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SSC
Species Survival Commission

Species

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2021 Report
of the Species Survival Commission and the Global Species and Key Biodiversity Area Programme



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of the Species Survival Commission and the Global Species and Key Biodiversity Area Programme







Coordination, compilation and proofreading
Jafet M. Nassar and Orlando Salamanca coordinated the production and publication of the *2021 Species Report*. Jon Paul Rodríguez, Chair of the SSC, is the author of the Chair's Report. Special thanks to: Simeon Bezeng, Monika Bohm, Catia Canteiro, Nahomy De Andrade, Julia Geschke, Sergio Henriques, Samuel Ivande, Kira Mileham, Dao Nguyen, Riley Pollom, Mayerlin Ramos, Aritzaith Rodríguez, Jon Paul Rodríguez, Bill Street, Angela Yang, and Edgard Yerena, for their assistance contacting the SSC Groups' chairs. Rebecca Miller proofread the SSC Groups' reports.

Graphic design
Aixa Díaz

Cover
Critically Endangered Dwarf Ibis (*Bostrychia bocagei*), Obo National Park, São Tomé. This is a rare and elusive bird, with ≤ 250 mature individuals and 90-100% of them inhabiting the forests of the islands of São Tomé and Príncipe, Gulf of Guinea. It is very difficult to photograph in its natural habitat, because it is normally hidden in the forest canopy. Photo: Lars Petersson

Insets
Marine Iguana (*Amblyrhynchus cristatus*) from Floreana. Subspecies in this genus are under revision. Photo: Paquita Hoeck (page 2)

Vulnerable Smooth-coated Otter (*Lutrogale perspicillata*). Photo: C. Bennetto (page 2)

Camouflage Grouper (*Epinephelus polyphekadion*) full of eggs. Photo: Stanley Shea (page 2)

Silk Moth (*Copiopteryx* sp., tentatively identified as *Copiopteryx semiramis*). Gallito de las Rocas conservation concession, Madre de Dios, Peru, 2018. Photo: Philip Bowles (page 3)

Opinions expressed in this publication do not necessarily reflect official views of IUCN SSC

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In this issue

2021 Report
of the Species Survival Commission and the Global Species and Key Biodiversity Area Programme



IUCN Species Survival Commission (SSC) 4

IUCN Global Species and Key Biodiversity Area Programme (GSP) 51

Reports of IUCN SSC Groups 67

Species Survival Commission
Chair's Report 2021

Introduction

During late 2020 and early 2021, IUCN was wrapped in controversy: what to do about the World Conservation Congress (WCC) originally planned to take place in 2020 in Marseille, France, but postponed due to the COVID pandemic? A strong case in favor of an in-person event was made by the French Government and the IUCN Secretariat, but IUCN Members, Council and Commissions were uncertain. Concerns were mostly over equity of participation and safety, as availability of vaccines and travel bans were very different around the world. The possibility of the WCC becoming a super spreader event, was also in people's minds. But the French Government, IUCN Council and the Secretariat discussed options and proposed measures to minimize risk and a hybrid event took place in September 2021.

By most measures, the Marseille World Conservation Congress was a great success. As anticipated, participation by some sectors of the IUCN family was not possible. Delegates from some regions, such as Asia and Oceania were extremely restricted or absent. Others were not allowed by their employers to travel and risk exposure to COVID. Some took the personal decision not to attend. But participation was strong and larger than anticipated: 5,700 attended in person, 3,500 participated virtually, and 25,000 members of the public visited the exhibition. No COVID outbreak took place, and the event was vibrant, exciting, and engaging. As you will read below, SSC involvement was intense, the Union elected Razan Al Mubarak to the Presidency, Nihal Welikala as Treasurer, renewed Council, and elected the six Commission Chairs: Sean Southey, Commission on Education and Communication; Andrea Andrade, Commission on Ecosystem Management; Kristen Walker, Commission on Environmental, Economic and Social Policy; Jon Paul Rodríguez, Species Survival Commission; Christina Voigt, World Commission on Environmental Law; and Madhu Rao, World Commission on Protected Areas. The Members also took the first steps for establishment of a seventh Commission, the Climate Crisis Commission.

SSC is a massive collaboration – over ten thousand experts in 167 groups are involved. We estimate that the time donated by SSC volunteers is equivalent to over US$ 110 million per year. As you will see throughout this report, SSC members, Secretariat staff, and IUCN Member organizations join forces with our partners, supporters, and their circles of influence to pursue our mission of *a just world that values and conserves nature through positive action to reduce the loss of diversity of life on earth*. Our network is firmly organized around the Species Conservation Cycle, going from assessment to planning to action, and assuring that all stages are communicated to relevant stakeholders around the world. It has been a learning process to adapt to SSC DATA, but we are getting progressively better at thinking about what we want to achieve and demonstrate to the world what we have done. It is not only incredibly valuable information to the SSC Chairs' Office team and our Steering Committee, but also allows us to achieve the level of transparency and accountability that donors at present demand.

The entire IUCN family is deeply grateful to the dedication of SSC members, responsible for the creation of the knowledge that underpins the **IUCN Red List of Threatened Species**, the development of systematic plans to reverse biodiversity decline, and supporting evidence-based conservation action around the world.

The core content of this report are the individual accounts of SSC groups, which start on page 67. Prior to that, we summarize the work of the SSC Chair's Office, follow it with an analysis of the activities of SSC groups derived from SSC DATA (page 36), and close these introductory sections with the annual report of the Global Species and Key Biodiversity Area Programme (page 51).

SSC Chair's Office team

This has been a dynamic year for our extended team. We began 2021 with 27 members and ended with 28. Although the size did not change much, what characterized the past 12 months was turnover. Early in 2021, Domitilla Raimondo stepped down from her role as SSC Deputy Chair, after four years of inspiring leadership. Among her numerous contributions, she developed a new proposed structure within SSC that organises species experts at the national level (National Species Specialist Groups) and made immense progress promoting IUCN knowledge standards across many African countries, together with Simeon Bezeng. Vivek Menon took over from Domitilla in May, bringing to the Steering Committee years of experience as the Founder and Executive Director of the Wildlife Trust of India, as well as Senior Advisor to the International Fund for Animal Welfare (IFAW), SSC Steering Committee member, and Chair of the Indian Elephant Specialist Group.

We also saw Bibiana Sucre step down as Executive Director in September, and Nahomy De Andrade take over soon after the World Conservation Congress in Marseille. We are deeply grateful to Bibiana for her vision and hard work in prioritizing, shaping, and building the Chairs' Office team at the beginning of the quadrennium, as well as her profound influence in developing the IUCN Species Strategic Plan. We also welcomed Nahomy, who was key in supporting the establishment and maintenance of our rich portfolio of partnerships working with Kira Mileham, while shifting this year to a wider oversight and strategic role.

As in years past, slightly over half of the team were staff hired by our generous and productive partners: **Albuquerque BioPark**, **Fundación Teimaikèn**, **Georgia Aquarium**, **Loro Parque Fundación**, **Oceanário de Lisboa**, **Parque das Aves**, and **Paradise Wildlife Park**. The largest group was hosted by the **Global Center for Species Survival** (GCSS) at Indianapolis Zoo, where we saw Mimi Kessler and Nicolette Roach leave to other jobs. The two positions will be filled next year. We were deeply grateful to Mimi and Nikki for their major and long-lasting contributions to the establishment of the GCSS. You may read a little about current team members below. **Sumatran Rhino Rescue** (page 20), our alliance with **Re:wild**, **International Rhino Foundation**, and **WWF**, continues to advance in supporting the Indonesian Government in saving the Sumatran Rhino from extinction.



Deputy Chair
Vivek Menon
INDIA



Chair
Jon Paul Rodríguez
VENEZUELA



Sumatran Rhino Coordinator
Anwar Purwoto
INDONESIA



Sumatran Rhino Senior Advisor
Jeff Holland
US



Network Coordinator
Edgard Yerena
VENEZUELA



Director Strategic Partnerships
Kira Mileham
AUSTRALIA



Executive Director SSC Office Caracas
Nahomy De Andrade
VENEZUELA



Strategy & Operations Manager
Orlando Salamanca
US



Species Report Coordinator
Jafet Nassar
VENEZUELA



Partnership and Grants Officer
Mayerlin Ramos
VENEZUELA



Communications Officer
Aritzaith Rodríguez
ARGENTINA



National Red List Programme Officer
Simeon Bezeng
SOUTH AFRICA

Global Center for Species Survival



Catia Canteiro [1]



Sergio Henriques [1]



Angela Yang [1]



Riley Pollom [1]



Monika Bohm [1]

2 Positions under recruitment

Species Survival Officers



Andrea Dempsey [2]



Jessica Schaus Calderón [3]



Alejandra Lafranchi [4]



Paula González Ciccia [4]



Anna Walker [5]



Clayton Meredith [5]



Tim Lyons [5]



Ana Catarina Fonseca [6]



Fabiana Lopes Rocha [7]



Eugenia Cordero [7]



Rosana Subirá [7]

1 Position temporarily paused [8]

Employed by SSC partners:

1) Indianapolis Zoo (US)
2) Paradise Wildlife Park (UK)
3) Loro Parque Fundación (Spain)
4) Fundación Temaikèn (Argentina)
5) Albuquerque Biopark (US)
6) Oceanário de Lisboa (Portugal)
7) Parque das Aves (Brazil)
8) The Deep Aquarium (UK)

JON PAUL RODRÍGUEZ, CHAIR
He holds a degree in biology from Universidad Central de Venezuela, and a Ph.D. in ecology and evolutionary biology from Princeton University. As Chair, he guides the activities of the Commission, assuring that SSC effectively delivers its strategic plan, and that the Commission works closely with our partners, the other IUCN Commissions, the Union's members, its national and regional committees, and the Secretariat.

VIVEK MENON, DEPUTY CHAIR
Vivek is a leading Indian wildlife conservationist, environmental commentator, author, photographer, and policy thinker with a passion for elephants. Founder of five environmental and nature conservation organisations, Menon spearheads Wildlife Trust of India as its Founder, Executive Director since 1998 building it from a three-member organization to one of India's best wildlife NGOs.

KIRA MILEHAM, DIRECTOR OF STRATEGIC PARTNERSHIPS
With degrees in both conservation biology and public relations and journalism, she also has a Ph.D. in human behaviour change, all from the University of Newcastle, Australia. Kira is responsible for strategically connecting the SSC to external partners to foster stronger collaboration for improved species conservation. Kira works closely with the zoo, aquarium, and botanical garden community in particular.

NAHOMY DE ANDRADE, EXECUTIVE DIRECTOR OF THE CHAIR'S OFFICE
Nahomy is an economist from Universidad Central de Venezuela with a Master's degree in public management from Instituto de Estudios Superiores de Administración, and additional courses in leadership and coaching. She has a leading role in managing the activities of the Chair's Office in Caracas. In that sense, Nahomy supports, guides, and facilitates the activities of the SSC staff.

ANWAR PURWOTO, SSC SUMATRAN RHINO COORDINATOR
Anwar is a forestry engineer in forest management from Bogor Agriculture University, with a Master's of science in environmental management from Griffith University. The Sumatran Rhino Coordinator is SSC's representative in Indonesia regarding the Sumatran Rhino Recovery Project. He coordinates project implementation partners, secures project permissions, oversees the implementation of project activities together with his government counterpart, and works closely with the Project Steering Committee.

JEFF HOLLAND, SSC SUMATRAN RHINO SENIOR ADVISOR
Jeff is a Zoologist working as a Zoo and Wildlife Consultant, with an undergraduate degree in zoology from the California State University of Pomona in the United States. He has over 30 years of extensive experience working with the captive management of wildlife both in zoological facilities and in the field. During 1986-2016 he worked at the Los Angeles Zoo starting as a keeper, then animal supervisor and as Curator of Mammals during 1999-2016. He is currently working on projects in the Philippines for tamaraw, in Sulawesi assisting in the development of rescue centers for confiscated anoa and babirusa, recovery of the Peninsular Pronghorn in Baja California, Mexico and is a member of the USFWS Sonoran Pronghorn Recovery Team in Arizona. Additionally, Jeff is working with the Chaco Center for Conservation and Research in Paraguay on the study of lowland tapirs in the Paraguayan Chaco and the captive breeding of the Chacoan Peccary.

EDGARD YERENA, NETWORK COORDINATOR
Edgard is a biologist from Universidad Simón Bolívar, with a Master's in ecology from the same university, and a law degree from Universidad Central de Venezuela. Edgard has been a long-time member of SSC Bear Specialist Group, focused on biodiversity conservation policy and planning. As Network Coordinator,

he supports the management of SSC Conservation Committees, Specialist Groups, Red List Authorities, and Task Forces, particularly for the delivery of the IUCN Species Strategic Plan, appointment of roles, creation of new groups, and integration with other components of IUCN, as well as channelling enquiries and requests.

ORLANDO SALAMANCA, OPERATIONS AND STRATEGY MANAGER
He holds an undergraduate degree in international relations from Universidad Central de Venezuela, a Master's degree in public management and a Master's degree in finance, both from Instituto de Estudios Superiores de Administración. Passionate about implementation, Orlando has a lead role supporting planning and follow-up, identifying areas for improvement, and addressing the biggest operational challenges in order to stay focused on the most impactful elements.

JAFET NASSAR, SSC AND GSP ANNUAL REPORT COORDINATOR
Biologist from Universidad Central de Venezuela, with a Ph.D. in tropical biology from University of Miami. Jafet is in charge of coordinating, compiling, and preparing the Species Annual Report, through integration between IUCN's Global Species Programme and SSC.

MAYERLIN RAMOS, PARTNERSHIP AND GRANTS OFFICER
Mayerlin is a lawyer from Universidad Metropolitana with a Master's degree in public management from Instituto de Estudios Superiores de Administración and additional courses in leadership and social projects development. She is in charge of administration, and supports, guides and facilitates activities of SSC staff by accomplishing results.

ARITZAITH RODRÍGUEZ, COMMUNICATIONS OFFICER
Aritzaith is a journalist from Universidad Católica Andrés Bello with postgraduate studies in corporative communication from Universidad Monteávila, and additional courses in marketing. As SSC Communication Officer, she oversees developing and implementing communications strategies and products for SSC, in close collaboration with IUCN's Global Species Programme and Global Communications Unit.

SIMEON BEZENG, NATIONAL RED LIST PROGRAMME OFFICER
He holds a degree in botany and environmental sciences from the University of Buea, Cameroon, followed by Master's and Ph.D. degrees in botany from the University of Johannesburg, South Africa. Based at **BirdLife South Africa**, Bezeng has key responsibilities in the promotion of Red Listing of species, ecosystems, and the identification of KBAs in three African Countries, as well as to support the Red List Committee and the National Red List Working Group Alliance more generally.

MONIKA BÖHM, FRESHWATER CONSERVATION COORDINATOR
Monika has over 10 years of experience in supporting freshwater IUCN Red List assessments, across different species groups, and gained knowledge on the diverse conservation issues affecting freshwater species. She has published papers on freshwater status and threats (e.g., Climate Change Vulnerability Analyses for crayfish) and is a certified Red List trainer having delivered several Red List training workshops around the world. Monika spent over a decade as a Postdoctoral Research Assistant and Research Fellow at the Zoological Society of London and has been a member of numerous Specialist Groups.

CÁTIA CANTEIRO, PLANT AND FUNGI CONSERVATION COORDINATOR
Cátia is a Species Conservation Assessor working at the Royal Botanic Gardens, Kew, London, with over 10 years' experience in the conservation of plants and fungi. For the past five years she has been working on extinction risk assessments for the IUCN Red List, assessing over 500 species. She started her career working

on conservation planning and action for fungi and plant species, including environmental impact assessments and monitoring studies, and on restoration of temporary ponds.

SERGIO HENRIQUES, INVERTEBRATE CONSERVATION COORDINATOR
Sergio is the current Chair of the SSC Spider and Scorpion Specialist Group with over 15 years' experience in the field assessing, planning, and acting towards arachnid conservation in collaboration with the other IUCN task forces, specialist groups, and the Invertebrate Conservation Committee. He has experience supporting outreach across different media (i.e., blogs, news, NPR, National Geographic), developing integrated plans to facilitate or mobilize resources for any activity promoting arachnid conservation, and identified gaps in expertise while engaging with the global network of experts to address these gaps.

ANGELA YANG, MAMMAL CONSERVATION COORDINATOR
Angela most recently worked for Rainforest Trust, where she led a department of 13 staff, overseeing over 190 projects around the world. She worked with the leadership team to develop strategy, coordinate activities and foster collaboration between departments, determine and implement organizational efficiencies, spearhead Committee meetings and lead capacity-building, both for the conservation staff and for our partner organizations around the world. Before Rainforest Trust, Angela worked with ZSL as the Programme Manager for East and Southeast Asia, and the Wildlife Conservation Society as the Senior Regional manager for their Global Health Program, overseeing operations in Asia, Africa and the Americas.

RILEY POLLOM, MARINE CONSERVATION COORDINATOR
Riley was a marine resource management officer for Parks Canada, where he worked to study and conserve endangered Southern Resident killer whales, and also serves as the Key Biodiversity Areas Regional Coordinator for the Wildlife Conservation Society in Canada. He has been a Red List Officer for the SSC Shark Specialist Group for the past four years, and previously worked in this capacity with Project Seahorse and the Seahorse, Pipefish and Seadragon Specialist Group. Riley also has held roles with The Nature Conservancy (Canada), the Canadian Wildlife Service and the Calgary Zoo.

FABIANA LOPES ROCHA, HEAD OFFICER
Fabiana is a wildlife veterinary and ecologist, with a M.S. degree in ecology and conservation from the Federal University of Mato Grosso do Sul and Ph.D. in science from the Oswaldo Cruz Foundation. Her academic interest is in the areas of ecology, parasitology, and conservation of wild mammals, with an emphasis on carnivores and One Health. She is the head officer of the Center for Species Survival Brazil, a three-way partnership of IUCN Species Survival Commission, the SSC Conservation Planning Specialist Group, and Parque das Aves. Her work is focused on bringing global standards and improving national capacity to assess, plan and act within governmental agencies, NGOs, and other relevant stakeholders to save species.

ROSANA SUBIRÁ, RED LIST OFFICER
Rosana is a biologist and has a Master's degree in ecology from the University of Brasília. She was coordinator of conservation strategies at the Chico Mendes Institute for Biodiversity Conservation (ICMBio), the Brazilian environmental agency, where she coordinated the processes for assessing the risk of extinction of fauna species, and the development and implementation of tools for fauna conservation, such as the National Action Plans (PANs), Plans for Reducing the Impact of Human Activities on Biodiversity (PRIM), and integrated management of threatened native

species. She is currently a consultant at Parque das Aves, working for the Center for Species Survival Brazil (CSS Brazil) as a Red List Officer. Her work is focused on articulating the integration between the Global Red List and the National Red List in close partnership with ICMBio and its network.

EUGENIA CORDERO, PROGRAM OFFICER
Eugenia has a M.S. and Ph.D. in ecology from the Universidade Federal do Rio Grande do Norte, where she focused on bat-plant interactions in the seasonally dry tropical forest. She has also participated in bat conservation strategies in Central America, using environmental education and communication as essential tools. She is a full-time staff member at the Parque das Aves, working as a program officer for the Center for Species Survival Brazil (CSS Brazil), particularly focusing on communication activities and on planning, in close collaboration with the SSC Conservation Planning Specialist Group.

ANNA WALKER, RED LIST OFFICER, INVERTEBRATE POLLINATORS
Anna has a background in ecological monitoring of various insect groups, including ground beetles and butterflies, and she holds a M.S. in entomology from Harper Adams University, in the UK. Anna is a full-time staff member at the New Mexico BioPark Society, working in collaboration with select SSC Specialist Groups on Red List assessment projects for invertebrates. Current projects include fireflies of North America and Mexico, Hawaiian moths, and butterfly species of New Mexico, USA.

TIM LYONS, RED LIST OFFICER
Tim has a M.S. in fisheries and aquatic sciences from the University of Florida's Tropical Aquaculture Laboratory, where he focused on tropical invasion ecology. He is a full-time staff member at the New Mexico BioPark Society, working in collaboration with the SSC Freshwater Fish Specialist Group and the IUCN Global Programme Freshwater Biodiversity Unit on priority Red List assessment projects for freshwater fishes.

CLAYTON MEREDITH, RED LIST OFFICER, MEDICINAL PLANTS
Clay's background is in human behavioural ecology and archaeology, in which he holds a Master's degree. Clay is a full-time staff member at the New Mexico BioPark Society working in collaboration with the chair of the SSC Medicinal Plants Specialist Group. Current projects in this area include Red List assessment of economically important North American medicinal plants, and imperilled species from the US Southwest, Appalachia, the Great Lakes region, and the Vancouverian Floristic Province.

ANA CATARINA FONSECA, RED LIST OFFICER, MARINE
Catarina is the Marine Red List Officer at Oceanário de Lisboa in Portugal, where she works as part of the IUCN Red List Partnership team. She started her career focusing on cetacean ecology and moving to marine conservation after obtaining an M.Sc. in conservation science from Imperial College London. Catarina is working on the assessment of species held in aquarium collections to improve conservation actions for these species, as well as working with IUCN's Marine Biodiversity Unit on the Global Marine Species Assessment project.

ANDREA DEMPSEY, SPECIES SURVIVAL OFFICER
Andrea is working as a Species Survival Officer at the Center for Species Survival UK, based at Paradise Wildlife Park, one day a week. Andrea has worked in the zoological sector since 2004 and obtained an M.Sc. in Primate Conservation in 2014 before relocating to Ghana the same year, returning to the UK in 2019. Since returning Andrea has been assisting the Red List Unit in Cambridge and the Red List

government body in their assessment process. Now Andrea is working with BIAZA to faciliate their contribution to the **Reverse the Red** movement through the Species Conservation Cycle. Andrea is the ISB/EEP Coordinator for *Cercopithecus diana* and the Vice Chair of the EAZA Afro-Eurasisan Taxon Advisory Group.

JESSICA SCHAUS CALDERÓN, SPECIES SURVIVAL OFFICER
Jessica is a biologist working as a Species Survival Officer at the Center for Species Survival Macaronesia (CSSM) in Tenerife, Spain. She obtained her M.Sc. and Ph.D. at Nottingahm Trent University (UK), has worked on several conservation projects in America and Europe and has spent recent years studying animal behavior in urban environments. She has experience in data analysis and modeling, citizen science, camera trapping and radio tracking techniques. Jessica's work at CSSM focuses on evaluating the current state of biodiversity in the Macaronesia and promoting species conservation in this biodiversity hotspot.

ALEJANDRA LANFRANCHI, EXECUTIVE COORDINATOR
Alejandra is an environmental engineer with experience in project leadership, implementation of management systems, and sustainability. She has experience working in environmental management in the corporate sector, social and environmental NGOs. She was a mentor in environmental and social innovation programs. She completed a diploma in energy efficiency and is currently the executive coordinator of the Species Survival Center.

PAULA GONZALEZ CICCIA, DIRECTOR OF CONSERVATION, EDUCATION, AND RESEARCH
Paula is a biologist with experience in managing integrated conservation projects based on intersectoral and interjurisdictional articulation and cooperative management of species. She has held technical and management positions both in NGOs and government agencies at the provincial and national level. She coordinated various interdisciplinary and led collaborative spaces conservation actions and community strategies in different provinces of the national territory. Currently serves as Director of conservation, education, and research in Fundación Temaikén and the Species Survival Center is part of the initiatives.

SSC Steering Committee

The SSC Steering Committee is composed of 24 people, 8 women and 16 men. Our goal is that least two members reside in each of the eight IUCN Statutory Regions. Institutional observers, plus representatives from the Secretariat, bring the total number of participants to 36.

Chair and Deputy Chair	Country
Jon Paul Rodríguez	Venezuela
Vivek Menon	India

Steering Committee Members	Country
Luigi Boitani, Regional Vice-Chair for West Europe	Italy
Onnie Byers	US
Claudio Campagna	Argentina
Topiltzin Contreras MacBeath	Mexico
Ehab Eid, Regional Vice-Chair for West Asia	Jordan
Dmitry Geltman, Regional Vice-Chair for East Europe, North and Central Asia	Russian Federation
Piero Genovesi	Italy
Brahim Haddane	Morocco
Ian Harrison	US
Axel Hochkirch	Germany
Mike Hoffmann *	UK
Jonathan Hutton	Switzerland
Olga Krever	Russian Federation
Mirza Kusrini, Regional Vice-Chair for South and East Asia	Indonesia
Frédéric Launay	Abu Dhabi, UAE
Gabriela Lichtenstein, Regional Vice-Chair for Meso and South America	Argentina
Russell Mittermeier	US
Gregory Mueller, Regional Vice-Chair for North America and the Caribbean	US
Nunia Thomas	Fiji
Pricelia Tumenta, Regional Vice-Chair for Africa	Cameroon
Amanda Vincent	Canada
Yan Xie	China

Institutional observers	Representative
BirdLife International	Stuart Butchart
Conservation International	Will Turner
Fondation Franklinia	Jean-Christophe Vié
Re:wild	Wes Sechrest Barney Long
TRAFFIC	Steven Broad
Wildlife Conservation Society	Elizabeth Bennett
World Association of Zoos and Aquariums	Theo Pagel
Zoological Society of London	Mike Hoffmann *

* Is both a member and an institutional observer

Representatives of the IUCN Secretariat
Dao Nguyen, Global Species Programme
Jane Smart, Global Species Programme
Richard Jenkins, Global Species Programme
Thomas Brooks, Science and Knowledge Unit

The SSC Steering Committee met virtually in 2021, twice: on 9-12 February and on 17-19 August. It is unclear if an in-person meeting will be able in 2022, but it is likely that we will reactivate them in 2023.

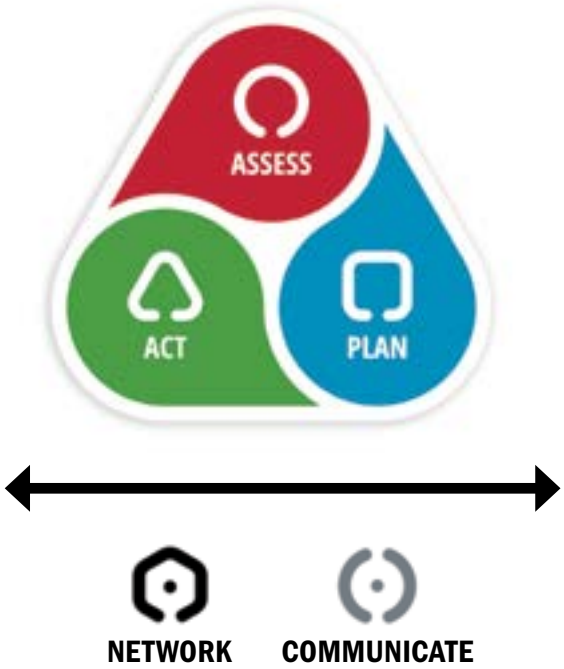


SSC Steering Committee Meeting,
August 2021
Photo: Topiltzin Contreras

IUCN Species Strategic Plan 2021-2025

The IUCN Species Strategic Plan 2021-2025 brings together the joint work of the IUCN Species Survival Commission and the Secretariat, as well as IUCN Member organizations and several other partners.

As part of the development of the new Species Strategic Plan, the visual image of the Species Conservation Cycle was refreshed. The cycle now focuses on the three components that are linked to each other: Assess, Plan and Act, and emphasizes the two transversal components, Network and Communicate, required for effective implementation.



This new schematic of the Species Conservation Cycle will guide our efforts for valuing and conserving biodiversity beyond the SSC network, to global movements such as **Reverse the Red**.

In the section below please find a snapshot of the 2021-2025 targets.

Assess: Understand and inform the world about the status and trends of biodiversity.

- 263 new scientific publications about species research.
- 99 publications produced in internal journals.
- 288 research projects completed.
- 62,097 new biodiversity assessments/reassessments:
  - 27,366 new global Red List assessments.
  - 18,470 global Red List reassessments.
  - 8,524 new national Red List assessments.
  - 2,678 national Red List reassessments.
  - 5,059 Green Status assessments.

Plan: Develop collaborative, inclusive and science-based conservation strategies, plans and policies.

- 358 new conservation plans/strategies developed.
- 49 conservation plans/strategies updated.
- 113 conservation plans invited/endorsed by national governments/conservation authorities.
- 78 policies where SSC members provided technical input for conservation.
- 57 documents provided to support/guide policy making.

Act: Convene and mobilize conservation actions to improve the status of biodiversity.

- 307 technical consultations provided to support conservation actions.
- 957 threatened species benefiting from *in situ* conservation action and 26 from *ex situ* conservation action.
- 656 species benefiting with an increase or prevented decrease in population or range size, because of conservation actions.
- 246 actions addressing major drivers/emerging threats of species or population loss.
- 143 areas under management for species or groups of species.
- 86 conservation translocations conducted.
- 138 sustainable use practices supported.
- 11 unsustainable use practices tackled.

Network: Enhance and support our immediate network and alliances to achieve our biodiversity targets.

- 3,903 new SSC members to be recruited by 2025.
- 2,034 new people trained:
  - 988 in assessment tools.
  - 546 in conservation planning.
  - 326 in conservation action.
  - 20 in communication skills.
  - 36 in management skills.
  - 118 in other fields.
- 37 governments supported to develop species conservation policies.
- 10 Reverse the Red pilot countries implementing assess-plan-act to deliver post- 2020 conservation targets.

Communicate: Drive strategic and targeted communications to enhance our conservation impact.

- 440 digital communication outputs developed in relation to specific taxonomic groups.
- 238 Species e-bulletin, Save Our Species newsletter, SSC Groups' newsletter editions.
- 146 communication products using innovative tools.

Download the **2021-2025 IUCN Species Strategic Plan** in English, Spanish or French, and please access our **interactive visualization**.

SSC at the IUCN World Conservation Congress

The IUCN World Conservation Congress (WCC) was the first hybrid (in-person and virtual) environmental event since the pandemic began, and the SSC Network had a strong presence through many forum sessions, the Reverse the Red Pavilion, and supporting the discussion of motions.

Assess-Plan-Act to Reverse the Red

After the assessment of extinction risk of a species, that information is used to bring together stakeholders and develop conservation action plans; the collaborative implementation of those action plans has led to the recovery of many species. This Species Conservation Cycle is the conceptual framework of SSC. As a main session during the WCC, SSC leaders introduced assess-plan-act, as well as **Reverse the Red**, and case studies from around the world that have improved the outcomes for fungi, plants, amphibians, mammals, and freshwater species.

As a fungus case study, Greg Mueller, Chair of the Fungal Conservation Committee, spoke of the collaborative effort to conserve the Chilean threatened endemic *Butyriboletus loyo* (EN). This effort is carried out by Fungi Foundation, INFOR (Chilean National Forestry Institution), Universidad Austral, and the Mapuche communities in the region of Los Ríos, in Panguipulli. These organizations developed a strategic action plan that included an *in situ* research component to increase production as well as efforts to develop best practices for harvesting the species. This work was implemented after the red list assessment identified that unsustainable harvest was a major threat to the species. Chile is a leader in including fungi in environmental policies and actions.

“No need to assess everything before acting!” said Jean-Christophe Vié, Director General of Fondation Franklinia and SSC Steering Committee Member. Trees are an iconic group representing the largest part of the earth’s biomass, their preservation leads to enormous collateral benefits for numerous other species. The Global Tree Specialist Group (GTSG) jointly with Fondation Franklinia, Botanic Gardens Conservation International, and several other organizations has been assessing the World’s trees finding that at least 30% of the 58,497 known species are threatened. In terms of implementing conservation actions, several projects are ongoing in alliance with the Colombian Plant Specialist Group, Central Africa Plant Red List Authority, Western Ghats Plant Specialist Group, and New Caledonian Plant Red List Authority, together with NGOs, botanical gardens, and research institutions. Conservation action projects include identifying and protecting mature individuals; supporting seed collection, banking and propagation; reducing threats, planting and monitoring post-planting; while at the same time empowering local communities to protect species, develop capacities, and livelihoods.

Mirza Kusrini, SSC Regional Vice-Chair for South and East Asia, shared the experience from Indonesia, where the bleeding toad, *Leptophryne cruentata* (CR), has declined sharply by causes unknown. According to assessments, since the amphibian populations are small, fragmented and fluctuate in size, there is a need for a long-term monitoring program. Led by SSC members, a group of experts participated in two virtual workshops to shape the conservation planning strategy of this species. As a result, it was decided to do annual monitoring, ecological research, and *ex situ* research to design a future program of conservation breeding and translocation.

Vivek Menon, SSC Deputy Chair and Chair of the Asian Elephant Specialist Group (AsESG) shared their experience with the Bornean Asian Elephant. After the re-assessment completed in 2020, the Asian Elephant is categorized as Endangered on the *IUCN Red List of Threatened Species*. Nevertheless, AsESG experts consider the Borneo elephant’s taxonomy distinct from elephants of mainland Asia, which means

it needs a separate assessment as a sub-species. The Bornean Asian Elephant Plan (2020-2029) envisages improving protection to halt elephant killing, improving landscape connectivity, ensuring the best *ex situ* practices for elephant management and conservation, and sustaining population monitoring. Since December 2019, AsESG has supported the implementation of conservation action together with Sabah Wildlife Department and local partners, such as realigning fences in palm oil plantations to facilitate passage, undertaking rescue and translocation of problem animals, and developing the Borneo Elephant Sanctuary as a conservation center.

Topiltzin Contreras, Co-Chair of the Freshwater Conservation Committee, shared the experience of the Morelos minnow or Balsas Shiner, *Notropis boucardi*, a freshwater fish endemic to the state of Morelos, in central Mexico. The assessment pointed out that the species has decreased due to the impact of invasive trout, the invasive plant *Egeria densa* and urban development. To revert that trend, experts joined efforts with Federal and local authorities, as well as with the general public to develop a communication and conservation strategy. Efforts combined removal of the invasive species, law enforcement over urban pressures, patrolling and monitoring by local communities and declaration of the area as a Ramsar site, among other actions. After 12 years with the plan in place, the population of the Balsas Shiner went from about 100 individuals to thousands occupying a broader area.

Domitilla Raimondo, Co-Chair of the Plant Conservation Committee shared the South African example of implementing assess-plan-act at the national level. Carrying out national-level species and ecosystems assessments influence the priorities and policies established by the country. Land-use planning and management is guided by the assessments to secure habitat for highly threatened species, for example through protected areas, stewardship agreements, among others. The assessments also identified unsustainable use of species for traditional medicine as an important threat, and this led to work with traditional healers in promoting sustainable practices. The poaching of succulent plants has shown a dramatic increase in the past two years; this has been addressed with an increase in confiscations and the *ex situ* propagation of as many species as possible to save genetic diversity.

SSC Sessions at the Reverse the Red Pavilion

The Reverse the Red Pavilion was the perfect spot to showcase the diverse work of the SSC Network, from growing focus on supporting national expert networks to establishing partnerships and tools to ensure species survival, engaging stakeholders, and achieving post-2020 biodiversity targets.

Recently launched, the IUCN Green Status of Species is the first global standard to assess species' progress toward recovery. During this session, Molly Grace, Co-Chair of the Green Status Working Group, explained how the Green Status produces Species Recovery Categories to accompany the well-known extinction risk categories of the IUCN Red List, throughout exploring species case studies.

Led by Richard Jenkins, The IUCN Red List of Threatened Species: from 2017 to 2030 engaged several SSC leaders and other Red List Partners. They presented the progress in expanding the IUCN Red List, especially for plants, fungi and invertebrates, the importance of conducting reassessments so that the Red List Index can be produced, as well as the priorities for the IUCN Red List in the next decades.

Colleagues from the IUCN Save Our Species programme, headed by Ana Nieto, led the session of Conservation action to benefit Species, Habitats, and People. They explained the three-legged approach of SOS' conservation projects (species, habitats and people), and focused on how to deliver positive impacts, engaging important donors and the private sector.



Views of the Reverse the Red Pavilion at the IUCN World Conservation Congress in Marseille, France
Photo: SSC archives





The session Key Biodiversity Areas — a blueprint for scaling up action to conserve our planet's biodiversity, led by Penny Langhammer, launched the 28th edition of the CEMEX Nature and Conservation Book Series: *Key Biodiversity Areas*, in which leading global experts explore the importance of these sites in addressing the biodiversity crisis. The session highlighted the critical role KBAs play in achieving targets of the post-2020 GBF.

Led by Anastasiya Timoshyna, Co-Chair of the Medicinal Plant Specialist Group, the session Building Back Better: Expert Solutions for Addressing Wildlife Trade Challenges, showcased a selection of approaches to addressing the over-exploitation of species, covering regulatory frameworks, standards and certifications for sustainable trade, and changing behaviors. The session engaged participants in the development of further thinking about innovative solutions for addressing wildlife trade challenges.

Nisha Owen, Chair of the Phylogenetic Diversity Task Force led a panel discussion at Weird, wonderful, overlooked: conserving the Tree of Life. This session discussed the importance of the Tree of Life as a fundamental component of global biodiversity, of critical intergenerational value, and how to conserve species that together represent billions of years of threatened evolutionary history.

Jon Paul Rodríguez talked about the creation of SSC National Species Specialist Groups and nationally focused partnerships to bring together experts focused on implementing IUCN methods and approaches. He highlighted that these initiatives

will also allow for emerging leaders to join the SSC network to grow professionally and be part of the global conservation community, while contributing to improve the status of biodiversity in their countries.

At Still ruffling feathers: How sustainable use benefits conservation the Sustainable Use and Livelihoods Specialist Group (SULi), led by Chair Dilys Roe, presented stories and narratives of local communities and the importance of sustainable use, viewed from their perspective. The interactive discussions provided the opportunity for participants to engage directly with SULi members and learn how to get involved in SULi activities.

The Asian Species Action Partnership (ASAP) also participated through a pre-recorded session. Their short film highlighted how conservation partnerships can be a powerful mechanism to address the many challenges facing species conservation and illustrates their role to push urgent action for species on the brink of extinction.

Bill Street, from the Indianapolis Zoo, led the introduction of the Global Center for Species Survival as a partnership between SSC and the Indianapolis Zoo. With expert coordinators dedicated to catalyzing the conservation of mammals, plants and fungi, birds, invertebrates, amphibians and reptiles, marine and freshwater species, the GCSS hopes to greatly increase the SSC's capacity to Reverse the Red for global biodiversity.

A call to action for Sumatran rhinos



Princess Laurentien of the Netherlands leads a session on Sumatran Rhinos at the Reverse the Red Pavilion.

The Sumatran rhino is one of the most threatened large mammals in the world. The session held during the World Conservation Congress in Marseille, last 4 September 2021, was a call to all participants to join efforts to save and recover the species. IUCN Species Survival Commission, Re:wild, International Rhino Foundation, and WWF are the Sumatran Rhino Survival Alliance, which is supporting the Government of Indonesia's Emergency Action Plan to save the species, working through local conservation organizations. The plan is to protect all remaining Sumatran Rhinos and search and rescue isolated Sumatran rhinos that are not breeding in the wild to breed them under human care.

The session gave an overview of the initiative by Barney Long of Re:wild. An impassioned speech was offered by Her Royal Highness Princess Laurentien of The Netherlands, who has worked on sustainable and environmental issues for many years, along with a positive and open discussion with the participants to identify possible out of the box solutions to this difficult conservation problem. The participants were very engaged, and the Princess facilitated a thoughtful and inspiring conversation.

Since its creation in September 2018, the Sumatran Rhino Survival Alliance has made important strides in bringing this species back from the brink:

- Successfully rescued a healthy female rhino – Pahu – that was relocated to a secure facility in Kalimantan.
- Completed an expansion of the Way Kambas Sumatran Rhino Sanctuary, providing space for five additional rhinos, and construction of a new Sumatran Rhino Sanctuary in Aceh is about to begin.
- Identified a number of rhinos for rescue to enhance the conservation breeding program.
- Established the Sumatran Rhino Husbandry and Propagation Expert Advisory Board to guide the implementation of the Emergency Action Plan adopted by the Indonesian Government.

SSC Leaders present at IUCN WCC

We were delighted to see a very high engagement from many SSC Leaders at WCC, both virtually and in-person. We want to recognize and thank all SSC Leaders who spoke at sessions, organized discussions, participated in panels, provided advice or facilitated the discussion of motions, among many other activities. As SSC, it is our role to enable IUCN to influence, encourage and assist societies throughout the world to conserve the integrity of biodiversity; the WCC is a key place to address this mandate. We compiled a list of SSC Leaders we heard from at WCC, but we're sure we're probably missing some of you, apologies!

Alex Zimmermann
Amanda Vincent
Anastasiya Timoshyna
Anna Loy
Axel Moehrenschlager
Barney Long
Beth Polidoro
Brahim Haddane
Cristina López-Gallego
David Mallon
David Obura
Dilys Roe
Domitilla Raimondo
Erik Meijaard
Fred Launay
Gabriela Lichtenstein
Gernot Segelbacher
Greg Mueller
Ian Harrison
Jean-Christophe Vié
Jon Hutton
Jon Paul Rodríguez
Kathy Hughes
Kent Redford
Liz Bennett
Luigi Boitani
Mike Hoffmann
Mirza Kusrini
Molly Grace
Monika Böhm
Nisha Owen
Onnie Byers
Penny Langhammer
Philip McGowan
Piero Genovesi
Randall Reeves
Rima Jabado
Russ Mittermeier
Stephen Woodley
Topiltzin Contreras
Vivek Menon
Wendy Foden
William Karesh

Expanding the SSC Partnerships Network

The structure of SSC Partnerships continues to evolve with a focus for 2021-2025 on expanding the SSC network and species conservation impact at the national level.

Through the creation of Centers for Species Survival (CSS) and National Species Specialist Groups (NSSG), SSC aims to set up a coordinated platform of experts, local communities, national governments, and civil society to lead and improve our collective ability to assess-plan-act for species conservation, especially at local level. Through this approach, we continue to grow and refine the structure of partnerships to better reflect and support the interconnections between the different types of SSC Specialist Groups, CSS and other partners. The structure is based on three main dimensions:

Geographic: focus on national and subnational multi-taxa support for the assess, plan and act components of the Species Conservation Cycle. The new NSSG play a relevant role in organizing a network of volunteer experts, ideally in collaboration with a CSS, to help coordinate efforts across taxonomic and disciplinary groups for each country, to support governments and facilitate science-based decision making and the development of policies that will contribute towards halting the loss of species.

Taxonomic: focus on assess-plan-act priorities as determined by SSC taxonomic groups with the support of CSS, based on the following areas of expertise: amphibians, fungi, birds, reptiles, plants, fishes, and invertebrates.

Disciplinary: the main objective will be to provide guidance, best practices and capacity on key topics relevant to species conservation. These SSC Disciplinary Groups and possible new CSS would provide technical input to international conventions, national, regional or global species assessments and understanding

emerging conservation issues and opportunities, as well as driving innovative solutions to key challenges.

Since the quadrennium started, one of the main goals of the Chair's Office has been to develop funding mechanisms to support a network of Specialists Groups in a systematic and more democratic way. Now it is a reality. SSC grant programs have allowed us to support a wide range of Specialist Groups, encourage them to achieve their annual plans and contribute further towards the Species Strategic Plan. Some partners have joined this initiative, in a model that we look forward to continuing to strengthen in the coming years.

	Geographic	Taxonomic	Disciplinary
	Focus on regional, national, subnational multi-taxa support for APA	Focus on APA for priority Taxonomic Groups	Provide guidance, best practice and capacity on a key theme relevant to species conservation
Centers for Species Survival	CSS: Brazil CCS: Argentina CSS: Southeast Asia CSS: Macaronesia CSS: UK	Global CSS CSS: New Mexico CSS: Portugal Potentially CSS: Amphibia	Potentially CSS: Technology and Innovation CSS: Community Engagement CSS: Biobanking
Specialist Groups	(New) National Species Specialist Groups E.g. Colombia Species Specialist Groups	Amphibian, Bird, Mammals, Reptile, Fish, Fungi, Plant, Invertebrates	Disciplinary SGs E.g. Climate Change, Conservation Planning, Wildlife Health, Biobamking etc.

This structure aims to reflect and reinforce two priorities for the quadrennium: consolidate the CSS model around the world, as well as expand the role of SSC in implementation of Species Conservation Cycle at the national level.

Chair's Office Partners	Centralised partnerships with the SSC Chair's Team providing support through strategic umbrella alliances, funding grant programs and / or operational support. E.g. Reverse the Red, Re:wild, Provita, On the Edge, National Geographic, WAZA, etc.		
	Geographic	Taxonomic	Disciplinary
Centers for Species Survival	Dedicated partner-based staff teams of at least one full-time staff member in coordination with the SSC Chair's Office and working closely with relevant Specialist Groups to catalyse strategic and collaborative species conservation.		
Specialist Groups	National Species SGs	Taxonomic SGs	Disciplinary SGs
SSC Group Partners	Collaborations of any scope directly with Specialist Groups working to address priority species conservation, communication or networking needs.		

In addition to this new partnership structure that shows the interaction between the SSC network and the different CSS, SSC continues to have a diverse platform of partners around the world from zoos, aquariums and botanical gardens to recognized production companies which play a key role in funding, hosting projects, administrating resources and providing technical support to advance with the **2021-2025 IUCN Species Strategic Plan**.

SSC Internal Grant Programs

SSC Internal Grant

Early 2019, the SSC Chair's Office launched a grant opportunity for funding small requests within the SSC network: the **SSC Internal Grant**, thanks to the generous support of the Environment Agency - Abu Dhabi. This funding mechanism has three main goals:

- Support SSC groups in achieving their targets as established in their respective SSC DATA database section and our Species Strategic Plan 2017-2020, in alignment with our strategic framework: the Species Conservation Cycle.
- Encourage and incentivize all SSC Groups to carry out their annual planning process using the SSC DATA Information System, the monitoring and evaluation tool developed by the SSC Chair's Office. Having delivered their SSC DATA report is a requirement for accepting proposals from SSC groups.
- Motivate the SSC network to get more familiar with our strategic framework: the Species Conservation Cycle, and their components: Network–Assess–Plan–Act–Communicate.

From January 2020, the NGO Planta! also contributed to this grant by providing an annual support up to ~US$6,000, to be allocated towards projects related to Plant Specialist Groups, strengthening our capacity to support the SSC Network.

In 2021, 23 grants were awarded, for a total of US$ 73,307. The following proposals were funded:

SSC Group	Activity	Amount (US$)
Macaronesian Island Plant Specialist Group*	Preliminary conservation actions of *Musschia isambertoi*	3,496
Coral Specialist Group	Catalyzing Reassessment of Indo-Pacific Corals	3,300
Mid-Atlantic Island Invertebrates Specialist Group	Help Rescuing the Desertas Critically Endangered Land Molluscs Species from Extinction	3,480
Wild Pig Specialist Group	Action Planning for the arrival of African Swine Fever in Asia: Part 1 – Visayan warty pig and Mindoro warty pig	3,400
Grasshopper Specialist Group	Conservation and translocation of *Zeuneriana marmorata* in Italy	3,500
Conservation Translocation Specialist Group	Developing an Online Training Course for Conservation Translocation Planning	3,500
Mushroom, Bracket, and Puffball Specialist Group	Comprehensive assessment of genus *Cantharellus*	3,500
Species Conservation Success Task Force	Integrating the Green Status of Species into the Red List website	3,432
Marine Fishes Red List Authority	Red Listing of Pygmygoby Fishes	3,500
Deer Specialist Group	Developing and implementing a new communication strategy for the Deer SG	2,350
Small Carnivore Specialist Group	Improving and enabling the One Plan Approach for small carnivore conservation	2,500
West African Plant Red List Authority	Training workshop and launch of WAPRLA	3,500
Chameleon Specialist Group	Re-Assessments of Malagasy Chameleons	3,500
Vulture Specialist Group	Developing a Conservation Plan for West Africa's Critically	3,500
Palm Specialist Group	Red Listing the palm species of western Ecuador	3,500
UICN SSC Madagascar Plant Specialist Group	Floristic inventory, cartography and evaluation of the impacts of anthropogenic activities on continental wetlands	2,890

Terrestrial and Freshwater Invertebrates Red List Authority	Red Listing of velvet worms (Onychophora)	3,000
Snake Specialist Group	Development of a formal SSG website	3,000
Sea Snake Specialist Group	Reactivating the Sea Snake Specialist Group	3,000
Australasian Marsupial and Monotreme Species Sp	Status assessment of the Endangered island endemic Gebe cuscus (*Phalanger alexandrae*)	3,500
South American Camelids Specialist Group	Support to the Communication plan of the South American Camelids Specialist Group.	1,020
Lichen Specialist Group	Building Iberian conservation networks and the global Red List assessment of the regionally vulnerable lichen Lethariella intricata	3,439
Global Tree Specialist Group	Red List of Dipterocarpaceae	3,500
	Total	**73,307**

*funded by Planta!

SSC EDGE Internal Grant

This generous **grant program** is a partnership with **On the EDGE Conservation** (OTEC), and aims to contribute to halting the loss of evolutionarily distinct lineages, through improving assessment and planning for overlooked and evolutionarily distinct species.

In 2021, 8 projects received US$ 73,420 allocated to Red List assessments and conservation planning. The projects supported were:

SSC Group	Amount (US$)
Madagascar Plant Specialist Group	9,770
Spider and Scorpion Group	10,000
Grasshopper Specialist Group	9,000
Freshwater Plants and Western Ghats Plants Specialist Groups	5,700
Afrotheria Specialist Group	10,000
Viper Specialist Group	9.400
Mushroom, Bracket, Puffball Specialist Group	10,000
Lagomorph Specialist Group	9,550
Total	**73,420**

SSC Quarterly Report

SSC Quarterly Reports aim to provide timely advances of the work of the Chair's Office and the Commission in general to SSC Members, partner organizations, colleagues at the Secretariat, the SSC Steering Committee, and the world outside IUCN. We welcome articles from the network and beyond, and are especially interested in thought-provoking pieces that raise controversial issues or spark a discussion. Please do reach out to us if there is a topic that you would like to cover or a subject that you believe we should address.



Ultimately, these reports facilitate communication and exchange within the SSC network and IUCN. For additional details on the activities of SSC and our partners, please visit the *SSC Quarterly Report* **archive**.

High Level Interventions

High-level interventions address conservation issues of serious concern through letters to governments or companies, which highlight species and habitats under threat, and propose actions on their behalf. Each letter provides the necessary background and technical information, following a thorough review process that engages with SSC groups, experts across the network, and the IUCN regional offices and programmes.



Capture of free-ranging Guanacos for sustainable use of the fibre by Cooperativa Payún Matrú. Reserva Provincial La Payunia, provincia de Mendoza, Argentina
Photo: Antonella Panebianco

Informing about WCC Resolution to halt the implementation of the National Plan for the Sustainable Management of Guanaco (Plan Nacional para el Manejo Sostenible del Guanaco) in Argentina. In January the SSC Chair informed the Minister of Environment of Argentina about the approval of the World Conservation Congress resolution (WCC 2020 Rec 097) requesting the halt of the implementation of a National Plan for Sustainable Management of Guanaco in Argentina, to introduce

changes aimed at guaranteeing the viability of the management of guanaco (*Lama guanicoe*) across its entire national distribution range, and the effective control of overexploitation and poaching. On 15 March, SSC received a positive answer from the Secretariat of Environmental Policy on Natural Resources of Argentina's Ministry of Environment and Sustainable Development informing about the decision to revisit the current Plan in consensus with regional governments, through working sessions on all the key aspects of the Plan, in a participatory fashion, involving the South American Camelid Specialist Group (GECS) as well as all relevant stakeholders, having in sight improving the current plan and eventually approving a new one.

Openness of SSC to the incorporation of traditional knowledge to species assessments. In February, the SSC Chair sent a letter to representatives of the Inuit People of the north circumpolar region in regards to their concerns about the incorporation of traditional knowledge (TK) into the conservation assessment of species (expressed in two letters received in December 2020). The Chair announced that discussions have been initiated within the IUCN Red List Committee on how to incorporate TK into Red List assessments, thus opening an opportunity for a wider conversation on the role of TK in IUCN's evidence-based approaches to policy. He proposed a series of virtual meetings in the near future that might lead to concrete steps in accordance with other IUCN instances.

Hippos in Colombia, risks of impact on biodiversity and human safety: Scientific-technical recommendations. The SSC Chair and the Chair of the Invasive Species Specialist Group (ISSG), Piero Genovesi, expressed their concern to the Environment Minister of Colombia, Carlos Eduardo Correa, in a letter sent on February, about the impact of African hippos as invasive species in some river ecosystems of this South American country. SSC recommends competent authorities to urgently start a program for managing the population of hippos, using carefully selected techniques to maximize efficacy and minimize stressor pain to the animals. SSC offered its advice on the management of this situation. Colombian colleagues informed that the Ministry responded positively and the Viceminister for Environmental Policy and Regulations informed about the initiation of a participatory drafting of a **National Strategy for the Management of Hippos**, in consultation with the scientific and conservation community. An **article** in EcoAméricas reported on the letter and on the issue.



A Critically Endangered Vaquita, *Phocoena sinus*, being tracked within the Zero Tolerance Area in the inner Gulf of California, Mexico, and a panga with a buoy for a set gillnet in the background on 17th October 2019
Photo: Todd Pusser

Meaningful actions to address the only immediate threat to the vaquita, Mexico. The SSC Chair urgently expressed the Commission's concern to the environmental Mexican authorities in a letter sent in March about the rapid decline of the vaquita, highlighting that todays' population is numbering only about 10 individuals. The vaquita (*Phocoena sinus*) is the most endangered marine mammal species in the world. It has a very restricted distribution, occurring only in the upper Gulf of California in Mexico. The present range of the vaquita appears to be concentrated in an extremely small area. The first priority to save vaquitas must be to immediately remove gillnets, with a strong focus on the legally predesignated Zero Tolerance Area.

Concern about illegal hunting of threatened bustards in Azerbaijan. In March, Nigel Collar and Mimi Kessler, Chair and Deputy Chair of the Bustard Specialist Group (BSG) sent a letter to the Minister of Ecology and Natural Resources of the Republic of Azerbaijan expressing deep concern over the illegal hunting of Little Bustards (*Tetrax tetrax*) that recently took place in Azerbaijan, even within Protected Areas, involving men with rifles and falcons. They also expressed concern about Great Bustards (*Otis tarda*) which were also reported as illegally hunted. Both the Little Bustard and the Great Bustard are protected by law in Azerbaijan. The Little Bustard is Near Threatened and the Great Bustard is Vulnerable, both on the IUCN Red List and in the Azerbaijan Red Book. BSG respectfully requested the Ministry to use its powers to ensure that illegal hunting of these species does not happen again, and Azerbaijan's reputation as a safe haven for threatened wildlife is restored. This country is of vital importance to the survival of both species.

Statement on deaths of giraffes by electrocution in Soysambu Conservancy, Kenya. The Giraffe and Okapi Specialist Group set a position statement on 1 March regarding the deaths of giraffes by electrocution in Soysambu Conservancy. This protected area, part of a World Heritage Site, contains an important population of near threatened Rothschild's giraffe, the deaths of which represent a nontrivial loss for this unique and imperiled taxon. The SSC acknowledges the importance of electrical transmission infrastructure to meet the demands of a growing human population, but we must do so by ways that ensure coexistence with giraffes (and other wildlife) and people living with them. This can be achieved by incorporating the ecology of wildlife into pre-construction environmental impact assessments (EIA), which is an important part of ethical development in sensitive systems. The Giraffe and Okapi Specialist Group (GOSG) is aware of the mitigation actions taken by the Kenya Wildlife Service and the Kenya Power and Lighting Company to assess the current height of transmission lines, with recommendations to raise the height of the lines to accommodate giraffes, eliminating the risk of electrocution. GOSG welcomes these efforts and encourages more explicit guidelines for mitigating conflict with wildlife into future EIA's – similar work has been conducted in numerous countries across Southern Africa. To ensure that no giraffe in future are impacted by such development, GOSG proposes the following suggestions: Increasing the height of transmission lines to 8 meters to prevent potential impact with giraffe and other large animals such as elephant; Implementing more systematic EIA protocols for baseline abundance and movement data of critical wildlife populations; Assess the viability of alternate routes and methods of building power lines in wildlife rich environments; and Developing more robust protocols and monitoring to ensure compliance with the existing EIA process. As an example, assess and develop similar guidelines to that proposed in the UNEP produced "**Guidelines on How to Avoid or Mitigate Impact of Electricity Power Grids on Migratory Birds in the African-Eurasian Region**."

Concern on Whooper Swans hunting permits in Iceland. Eileen Rees, Chair of the Swan Specialist Group, sent in March a letter to the Minister for the Environment and Natural Resources and Members of the Parliament of Iceland, questioning a proposal to permit the hunting of Whooper Swans on cornfields during the summer months from 1 May to 1 October, which includes the swans' breeding and brood rearing season, on the basis that this would reduce economic loss to farmers of swans grazing on these sites. This proposal is of great concern because the Icelandic Whooper Swan, which migrates to winter primarily in Britain and Ireland, is recognized as a distinct population and the level of interchange with the northwest mainland European Whooper Swan population is very limited. As such, introducing hunting of swans in Iceland during the summer, over a period that includes not only the breeding season but also the swans' flightless period during their annual molt,

risks having a rapid and deleterious impact on a population which breeds almost entirely in Iceland. Whooper Swan is currently protected throughout its range across Eurasia, extending to areas where the species is much more numerous than it is in Iceland. Moreover, whilst the Swan SG appreciates that grazing by swans can potentially cause financial loss to farmers, there is a requirement under the Agreement on the Conservation of African-Eurasian Migratory Waterbirds (AEWA; of which Iceland is a signatory), that financial loss resulting from foraging by the species be determined and confirmed, and also that other non-lethal measures should be put in place to deter birds from feeding on the crops, before lethal methods can be endorsed. The Swan Specialist Group urges the Icelandic Government not to proceed with the proposal to permit hunting of Whooper Swans, particularly at such sensitive times of year, but in any event to seek other non-lethal measures for reducing crop damage and/or economic loss.



Vulnerable Western Great Bustard (*Otis tarda*)
Photo: Franz Josef Kovacs

Indiscriminate poisoning of birds in Ukraine by rodenticide. Nigel Collar, Chair Bustard Specialist Group (BSG), sent a letter in April to the Prime Minister of Ukraine, alerting about the poisoning of wild birds in southern Ukraine due to the improper use of the rodenticide brodifacoum, which has intensified as the migration period has begun. Victims of such improper use included hundreds of cranes, geese, ducks, swans and raptors. The area over which the poisoning is conducted is also a critical area for the Great Bustard *Otis tarda*, which is listed as Vulnerable on the IUCN Red List and as Disappearing in the Red Book of Ukraine. There is historic precedent for our concern, as catastrophic declines in Great Bustard populations followed rodent extermination campaigns in the Pricaspian Basin in the second half of the 20th century. This resulted in the complete and irreversible elimination of the Great Bustard population which overwintered in the Caucasus. BSG respectfully appealed to the Government of Ukraine to limit their use of rodenticide to emergency situations only, apply it according to the manufacturer's instructions (i.e. bury the capsules in rodent burrows, or distribute the poison within specialized plastic containers that allow access only to rodents), and not to treat fields where rodent numbers are low or absent, and, when rodenticides must be used, select rodenticides that do not present a secondary poisoning hazard.

Ayyalon Cave's unique biota in Israel is threatened with destruction. The SSC Chair sent a letter in June to the Minister of Environmental Protection of the State of Israel, and to other competent Israeli authorities expressing his concern about the plans to build a flood water reservoir above the Ayyalon Cave, a unique habitat of many endemic and threatened cave species, as well as backing similar letter of

concern sent by other SSC members and leaders, i.e. Axel Hochkirch, Chair of the SSC Invertebrate Conservation Committee and Louis Deharveng, Chair of the Cave Invertebrate Specialist Group. Ayyalon Cave is a Key Biodiversity Area and provides habitat for several endemic species, which are found nowhere else on our planet. An endemic scorpion in this cave is even the only representative of a complete taxonomic family. The groundwater of the cave is known to have a high salinity and temperature, lack of oxygen and presence of hydrogen sulphide. It is a very unusual ecosystem being based on floating microbial biofilms. The implementation of the plan will lead to a complete destruction of this ecosystem through flood water percolating into the cave, changing the cave's groundwater chemistry and thus destroying the unique species assemblage inhabiting the cave. The SSC Chair offered assistance in finding environmentally friendly alternatives for a flood water reservoir, through its more than 10.500 members, many of which have sound knowledge of environmental planning processes in collaboration with relevant stakeholders.

Request to the World Health Organization to remove video in which sharks are vilified. In June, Amanda Vincent, Chair of the Marine Conservation Committee and Rima Jabado, Chair of the Shark Specialist Group sent a letter of concern to the Director General of the World Health Organization (WHO), requesting the removal from their media platform of a **WHO video** urging COVID-19 vaccination, in which sharks are vilified. After years of work to redeem the images of sharks and to create a more realistic and positive profile for these threatened species, we worry greatly about a campaign from WHO that reactivates a story of sharks as menacing killers. The biggest barrier to shark conservation has long been the negative perception of sharks around the world, demonizing this group of over 550 diverse species.



Vulnerable Sunda Bearded Pig (*Sus barbatus*)
Photo: Siew Te Wong

Joint position paper on Conservation impacts of African swine fever in the Asia-Pacific region: In June, SSC, Food and Agriculture Organization of the United Nations (FAO) and World Organisation for Animal Health (OIE) released a position paper on African swine fever (ASF). This is a virus that does not pose a hazard or risk to humans but has devastated domestic pig production and impacted wild pig populations, especially in the Asian-Pacific Region. It is a highly infectious and, usually fatal, disease of pigs. It was first reported in the region in August 2018 and has since led to the culling of hundreds of millions of domestic pigs in an effort to control its spread. No vaccine exists to combat the virus, and basic biosecurity measures currently remain the best approach to prevent further ASF spread and spill-over to wild pig species in the region. Its impact on wildlife conservation could be devastating due to the potentially high mortality rate in native wild pigs. FAO, SSC and OIE expressed increasing concern that ASF outbreaks could push the 11 native wild pig species to the edge of extinction. The loss of native wild species could also affect fragile ecological communities by depriving threatened predators of a vital food source. It is of particular concern the potential impact on the Vulnerable bearded pig (*Sus barbatus*) in Sabah, Malaysia, the Vulnerable Philippines warty pig (*Sus philippensis*) and there are concerns about wild pig populations in Indonesia. "Any intervention needs multi-sectoral and multi-institutional cooperation involving ministries, veterinary services, wildlife services, non-government organizations, researchers, industry and communities," the joint communique said. Stronger biosecurity, surveillance, monitoring and response systems across sectors inclusive of domestic and wildlife species are very much needed. FAO, SSC, and OIE called on increased dialogue among government ministries and relevant experts to develop effective policies, as well as coordinated regional efforts to address ASF. See position paper **here**.

SSC Statement on acceptance of Fauna, Flora and Funga: In July, SSC called for the due recognition of fungi as major components of biodiversity in legislation and policy. SSC endorsed the Fauna Flora Funga Initiative and asked that the phrases

"animals and plants" and "fauna and flora" be replaced with "animals, fungi, and plants" and "fauna, flora, and funga." See published statement **here**.

SSC supports the submission on enforcement matters addressed to the intergovernmental Commission for Environmental Cooperation of the United States-Mexico-Canada trade agreement (USMCA/CUSMA), requesting immediate actions to save the "vaquita marina porpoise": In August the SSC Chair expressed support to the submission on enforcement matters filed on 11 August 2021 by the Center for Biological Diversity, Animal Welfare Institute, Natural Resources Defense Council, and the Environmental Investigation Agency, addressed to the intergovernmental Commission for Environmental Cooperation (CEC - United States-Mexico-Canada trade agreement - USMCA/CUSMA), requesting immediate actions from governments, international bodies and potential donors to save the "vaquita marina porpoise", the most threatened marine mammal on the planet. Vaquita (*Phocoena sinus*) is a small porpoise endemic to the Upper Gulf of California in Mexico, which has experienced a catastrophic 99% decline in its population in the last decade. Scientific estimates show that there may be only about 10 specimens left. It is a Critically Endangered species due to its being incidentally trapped in gillnets set for totoaba (*Totoaba macdonaldi*), a fish that is also a threatened species, illegally fished because its swim bladders are sold in Asian black markets for exorbitant prices. SSC urges immediate serious efforts to implement the use of legally mandated vaquita-safe fishing gear and a long-overdue crackdown on violators, on the next fishing season on totoaba, during which might occur the final extinction of vaquita porpoise. See full letter **here**.

ASAP Position Statement on the Conservation of Saola: In August 2021 the Chair of the IUCN Species Survival Commission (SSC) and the SSC Asian Species Action Partnership (ASAP) published a joint position statement concerning the conservation of Saola. It is a call to action for one of the most imperiled mammals on the planet, the Saola, *Pseudoryx nghetinhensis*, a forest-dwelling bovine (200 pound / 90 kilogram) unknown to science until 1992. It lives in the Annamite Mountains of Vietnam and Laos. It was the first new large mammal to science in more than 50 years, an incredibly important discovery. To date, Saola has never been seen in the wild by a biologist. It is a Critically Endangered species according to the IUCN Red List. The statement calls for a concerted effort to determine how the species can be saved, and highlights the need for significantly increasing search efforts. ASAP encourages organisations working towards the conservation of species in Southeast Asia to help promote the call. There is still time to save Saola in the wild. Only 30% of Saola habitat has been surveyed for wildlife, with as little as 2% intensively surveyed for Saola. This is a resource problem and there is an urgent need for resources and intensive searches in strategic locations. See full statement **here**.

Critically Endangered Saola (*Pseudoryx nghetinhensis*) recorded with a camera trap
Photo: Ban Vangban village/WCS





Critically Endangered Saola (*Pseudoryx nghetinhensis*) in captivity
Photo: W. Robichaud/WCS

SSC offers help to save the Manumea, the national bird of Samoa. In October, Joe Wood and Charles Cerbini, Co-Chairs of the recently created Pigeon and Dove Specialist Group (PDSG) sent a letter to Frances Reupena, Chief Executive Officer of the Government of Samoa Ministry of Natural Resources and Environment. They expressed SSC's deep concern about the status of the Manumea (*Didunculus strigirostris*) and offered PDSG's technical and scientific support in saving the species from extinction. PDSG has considered the available evidence and concurs with the findings of a review of the 2006-2016 Manumea Recovery Plan, which concluded that 'there may not be another decade to save the national bird of Samoa'. Furthermore, they are of the opinion that the situation is now so perilous that, without diminishing the importance of the other objectives listed in a 2020-2029 Recovery Plan, the establishing of a captive population should be regarded as a crucial component of any conservation strategy. PDSG is encouraged that an intention to 'explore and evaluate the option of captive breeding' was captured in this latest plan, and commend those involved in compiling the plan for recognizing the necessity of this. However, they are concerned that the proposed timescale (a detailed feasibility study and risk assessment produced within 3-5 years with recommendations implemented within 6-10 years) is too long. Based on current data, it is entirely feasible that the Manumea will be extinct within 10 years unless decisive action is taken now. As an initial step, PDSG volunteered their assistance in coordinating the Captive Breeding Feasibility Study referred to in the Recovery Plan and drafting a comprehensive report. Furthermore, they are prepared to commit to ongoing support for the implementation recommended actions, including through the sourcing of funding, the provision of ongoing guidance and the active participation of SSC members. As a result of this letter, the Government of Samoa Ministry of Natural Resources and Environment and the Pigeon and Dove Specialist Group, have agreed to sign a Memorandum of Understanding relating to the implementation of such support.

Dana Biosphere Reserve in Jordan threatened by mining of copper. In October the Chair of the IUCN World Commission on Protected Areas, Madhu Rao, and Jon Paul Rodríguez, SSC Chair, sent a letter to the Prime Minister of Jordan, H.E. Dr. Bisher Al Khasawneh, expressing their concern about the proposal to modify the boundaries of the Dana Biosphere Reserve in favor of the mining of copper, and in so doing, excluding an area of almost 80 km^2 containing ecosystems of great significance for the conservation of nature. Dana Biosphere Reserve is one of the most important protected areas in the Middle East, including endemic and near endemic species, such as the threatened Syrian Serin, Sooty Falcon and many important plant species. Its invertebrate fauna is likely to include many endemics not yet known to science. The area's location at the interface of three continents and biogeographic zones, and its range of altitude, climate, topography, and geology makes it unique in terms of landscape and biodiversity. Dana Biosphere Reserve is also important for its heritage value and presence of archeological sites that evidence the dawn of human civilization. Jordan has recognized these values and has nominated the area to be listed as a World Heritage Site. Jordan´s Ministry of Energy and Natural Resources has requested the excision of a large area of the Dana Biosphere Reserve, to facilitate the mining of copper. This will result in the significant reduction of the area's natural habitats, with direct and cumulative impacts on biodiversity along the Wadi Araba region, as well as the potential loss of historical sites. Mining operations in the area will have significant negative impacts, including to water resources through pollution, and to the prevailing land-use of livestock management. The IUCN Species Survival Commission and IUCN World Commission on Protected Areas have offered their expertise to stand ready to assist the government of Jordan to assess the potential impacts of such boundary changes proposal,

and to suggest alternatives that would maintain the integrity of the Dana Biosphere Reserve. Both commissions offer, if requested, a team of experts to conduct an on-site mission to consider the issues and to make recommendations.



Irrawaddy dolphin (*Orcaella brevirostris*) from the Mekong River population, which is Critically Endangered
Photo: Eam Sam Un, WWF-Cambodia

A call to save the Irrawaddy dolphins (*Orcaella brevirostris*) residing in the Chheu Teal transboundary pool of the Mekong River on the Laos-Cambodia border. A **joint statement** of the Cetacean Specialist Group, the Cambodian Government's Fisheries Administration and WWF was released in October to stress that the isolated population of Irrawaddy dolphins (*Orcaella brevirostris*) residing in the Chheu Teal transboundary pool of the Mekong River on the Laos-Cambodia border is on the verge of disappearing. This very small transboundary population of dolphins, which is thought to have been isolated for some time from the larger groups downstream in Kratie and Stung Treng, is essentially lost. The statement calls on Laos and Cambodian governments to join hands, recognizing the near extirpation of the transboundary dolphin population, stop gill-net use and other illegal fishing methods in and around the transboundary pool and urgently devise a plan to restore the habitats by maintaining flows for both dolphins and mega-fish species. Continued provision of alternative livelihood opportunities for communities along the Mekong, community outreach, environmental education, and continued research and monitoring of the species population, are urgently needed.

Eradication of the mouflon (*Ovis aries*) from Tuscan Archipelago National Park. In November, Jon Paul Rodríguez wrote Dr Giampiero Sammuri, President of the Tuscan Archipelago National Park, to express the strong support of SSC to ongoing efforts for eradication of the mouflon (*Ovis aries*) from Tuscan Archipelago National Park. Invasive species represent a major threat to biodiversity globally and are particularly harmful on islands. The mouflon was introduced in the 1960s into the Tuscan Archipelago National Park, with cumulative negative effects on the native flora and ecosystems, including rare species-specific to the area. The removal of this alien invasive species is therefore an important step to protect local biodiversity. SSC will always support intervention aimed at reducing the risk of extinction of native animals, fungi and plants. On islands, this typically means controlling or eradicating invasives, as was aptly illustrated in SSC's 2019 publication on **Island invasives: scaling up to meet the challenge**. Therefore, the SSC Chair offered SSC's scientific advice, and willingness to help.

Guidelines, standards, and action plans

SSC continues to build the scientific foundations for evidence-based species conservation through various types of **publications**. Many more SSC outputs are described in the stand-alone reports of SSC groups (starting on page 67). There is a selection of publications, however, that we would like to highlight here, as they represent key contributions from SSC to the global conservation community and seek to catalyse conservation action.





Global conservation translocation perspectives: Case studies from around the globe. This seventh edition provides 69 case studies with 78 species covering plants, mammals, birds, fish, amphibians, invertebrates, and reptiles. The projects are ranked as Highly Successful, Successful, Partially Successful and Failure.

Available also in **Spanish**, the **Útila spiny-tailed iguana** (***Ctenosaura bakeri*****): conservation action plan 2020–2025**, this, this 5-year action plan brings together local and international expertise to communicate a series of steps and goals designed to facilitate the conservation management of Útila spiny-tailed iguanas.





IUCN Guidelines for amphibian reintroductions and other conservation translocations: The number of amphibian reintroductions and other conservation translocations has increased in recent decades. Amphibian reintroductions are challenging and may not always work, but amphibian reintroductions may be the best or only option for conserving some species. Clearer guidance to plan, implement, and obtain resources for amphibian reintroductions is needed to improve conservation outcomes. These Guidelines outline the most important considerations for each stage of an amphibian reintroduction. They provide guidance, best practices, case studies, and links to helpful resources that will be useful for a wide variety of practitioners involved in amphibian reintroductions.

A global register of competences for threatened species recovery practitioners, is a register of competences in the form of a directory of the possible skills, knowledge and personal attributes required by practitioners working in threatened species recovery programs around the world, in both *in situ* and *ex situ* contexts. This

register has the potential to transform approaches to capacity development within threatened species recovery and help improve the effectiveness of this branch of conservation.





A survey of user attitudes towards the proposed IUCN Green Status of Species, gathers opinions and input from a wide range of potential users of the Green Status of Species (GSS). Results will be used in further development of the GSS methodology and, probably more importantly, in deciding when and how it will be applied.

Turks and Caicos rock iguana (***Cyclura carinata***), this document presents a comprehensive four-year plan for the conservation and management actions considered essential to ensuring the long-term survival of *Cyclura carinata* in the wild. This document combines knowledge and expertise from local government, local and international NGOs, the tourism industry, educators, homeowners, private island managers, civil society, and members of the IUCN SSC Iguana Specialist Group working in the TCI.





Red colobus (***Piliocolobus***) **conservation action plan 2021-2026**, this publication brings together the knowledge of experts on these monkeys and African wildlife conservation to identify the populations in most urgent need of conservation and to develop priority conservation actions for each taxon and across the red colobus' geographic range.

Published also in **Spanish** and **French**, **IUCN Green Status of Species**, is the product of a wide testing and consultations that took place between 2018 and 2020 to further this knowledge standard, originally referred to as Green List of Species. The main objectives of the IUCN Green Status of Species are: to provide a standardised framework for measuring species recovery; to recognise conservation achievements; to highlight species whose current conservation status is dependent on continued conservation actions; to forecast the expected conservation impact of planned conservation action; and to elevate levels of ambition for long-term species recovery. These objectives together encourage conservation towards species recovery, throughout a species' range.

Securing additional funding to support the activities of the SSC

Fiscal sponsorship of SSC

As SSC does not have formal fiscal status, external donations and funds are generously administered by **Re:wild**, who provides banking, accounting, and contracting services at zero overhead cost to SSC, and contributes to the SSC Chair's Office (US$ 50,000). We are very grateful to all, but especially to those that we interact with regularly and are clearly part our team: Wes Sechrest, Russ Mittermeier, Ella Outlaw, Don Church, Barney Long, Robin Moore, Penny Langhammer, Jennifer Luedtke, Alex Quintero, Reagan Steppe, Tinisha Hancock, and Jessica Argubright. We look forward to continuing working together on saving species!

Funding of the SSC Chairs' Office

Most of the funding that supports the SSC Chair's Office is provided by external donors. In addition to Re:wild, mentioned above, and EAD, mentioned below, in 2021, the following organizations contributed an aggregate of US$ 760,472 to SSC: Al Ain Zoo, Disney's Animal Kingdom, Chicago Zoological Society, San Diego Zoo Global, Wildlife Reserves Singapore, Woodland Park Zoo, World Association of Zoos and Aquariums (WAZA), Georgian Aquarium, The Deep, Association of Zoos and Aquariums (AZA), Beauval Nature, Columbus Zoo, Copenhagen Zoo, Detroit Zoological Society, European Association of Zoos and Aquaria (EAZA), Jacksonville Zoos and Gardens, Sea World, Saint Louis Zoo, Indianapolis Zoo, Chester Zoo, British and Irish Association of Zoos and Aquariums (BIAZA), ABQ Biopark, Milwaukee County Zoo, Oregon Zoo, Santa Barbara Zoo, Smithsonian National Park, Zoo Leipzig, Honolulu Zoo, and Oklahoma City Zoo.

SSC Commission Operations Fund 2021

The SSC was granted a Commission Operations Fund of CHF 235,000 in 2021, the same amount as during 2017-2020. This was allocated as follows: CHF 65,000 for Chair's Office travel and representation costs, CHF 50,000 salaries and consultants, CHF 47,000 SSC meetings, CHF 21,000 office and general administration costs, and CHF 9,000.00 for technology and communications (e.g., publication of *Species*).

EAD-SSC-GWC Memorandum of Agreement

In December 2021, we had the honor and the privilege to sign a Memorandum of Agreement between the Environment Agency – Abu Dhabi (EAD), the IUCN Species Survival Commission (SSC) and Global Wildlife Conservation (GWC; currently Re:wild) concerning *Support for the office of the Chair of the IUCN Species Survival Commission 2021-2024*. This is a significant agreement, that provides CHF 562,500 per year for four years (2017-2020) to be administered by GWC as fiscal sponsor or SSC, distributed as follows: CHF 50,000 per year as partial funding for the office of the Chair of SSC, CHF 287,500 per year as partial funding for the implementation of the 2017-2020 IUCN Species Strategic Plan by SSC, and CHF 225,000 per year to support the contribution of the IUCN Global Species Programme towards the implementation of the 2021-2025 IUCN Species Strategic Plan. We are grateful to all our EAD colleagues for their support, advice and encouragement, but are especially indebted to Razan Khalifa Al Mubarak, Shaikha Al Dhaheri, Hanan Ibrahim Al Abed, Salim Javed and Frederic Launay.

Supporters of the SSC Chair's Office 2021



SSC DATA

The 2021-2025 quadrennium started with the full implementation of the SSC DATA Information System (SSC DATA IS) platform to gather, process, and analyse the targets, activities and results achieved by the SSC Network. All the leaders of the SSC groups have received assistance on the use of the system through personalized virtual meetings with members of the SSC Chair's Office and the Conservation Coordinators of the Global Center for Species Survival (GCSS), video tutorials, guides, and permanent attention through email by the team at the SSC DATA Unit.

SSC DATA IS offers the user a series of modules that allow the uploading and consultation of different data sources:

Group information. Contains the general description of the group, mission, leaders, Red List Authority coordinator, projected overall impact on the species' conservation status by the end of the 2021-2025 quadrennium, number of members, host organization, social networks, program officer, focal point for *ex situ* expertise, focal point for conservation planning, and core partnership needs.

Targets, activities, and results for the quadrennium. Contains the list of specific targets proposed by the group for the 2021-2025 quadrennium, the status of each target, the activities undertaken by the group and results derived from them every year. Each target and derived results are associated with several parameters: (1) components of the Species Conservation Cycle (Table 1), (2) Key Species Results (KSR, Table 2) derived from the implementation of the targets, (3) quantitative or qualitative indicators used to track progress, (4) activity categories, (5) regional and country locations where the activities conducted are having impact, (6) support/partnership needs, and (7) support received. The KSRs for the

2021-2025 quadrennium were approved in 2021 by the IUCN General Assembly, during the World Conservation Congress in Marseille, France. For targets under the 'Act' component of the Species Conservation Cycle, groups can indicate the target species. Finally, for each target, the leaders of the groups can indicate if results obtained helped support actions requested in any of the **2020 World Conservation Congress Resolutions**.

Partnerships Contains the description of the partners that provide support to each group, support type, and components of the Species Conservation Cycle supported.

Acknowledgements Contains information about individuals, institutions, and organizations that significantly contributed to the achievement of the targets proposed by each group during each year.

Image gallery and documents Contains all the images available to be used in the reports and documents derived from the implemented targets.

Table 1

Components of the Species Conservation Cycle

Component	Definition
Assess	Focus on monitoring species and informing the world about the status and trends of biodiversity, thus providing measures for the health of our biosphere.
Plan	Aims to enhance collaborative, inclusive, and science-based strategies, including policy change, to ensure the most effective species conservation actions.
Act	Improve the status of biodiversity, by convening and mobilizing actions involving governments, academia, civil society, and the private sector.
Network	Enhances and support the SSC network to further significant outcomes across the Species Conservation Cycle.
Communicate	The effectiveness of IUCN's species conservation work is enhanced through strategic and targeted communications.

Table 2

Key Species Results approved by the IUCN World Conservation Congress (3-11 of September 2021).

Key Species Result	Description
1	Develop new and strengthen existing partnerships and sustainable funding mechanisms.
2	Enhance the membership and the capacity of the SSC network and its alliances.
3	Enhance collaborations across and beyond IUCN to accomplish species conservation results under the principles of the One Programme Charter.
4	Catalyse actions with governments, IUCN members and other stakeholders to achieve post-2020 conservation targets.
5	Improve and publish biodiversity and conservation knowledge.
6	Expand the coverage, quality and content of biodiversity assessments: IUCN Red List, Environmental Impact Classification for Alien Taxa (EICAT), Climate Change vulnerability, Assess to Plan (A2P), Green Status of Species and species-focused Key Biodiversity Areas (KBAs).
7	Strengthen the Red List Index (RLI) as a biodiversity indicator, at global and national scales.
8	Strengthen and expand species conservation planning efforts at local, national, regional and global scales.
9	Strengthen species conservation in national, regional and global policies.
10	Enhance biodiversity conservation action through implementation of effective, collaborative and practical approaches.
11	Catalyze sustainable use practices to improve governance for people and nature.
12	Further strengthen IUCN's species theme as a strong and credible source on biodiversity information for target audiences.
13	Increase the visibility of different taxa and species conservation through strategic and innovative communications that attract new audiences.

Products derived from SSC DATA IS included the 2021 single-group reports, the *2021 Species Report* and several special reports and data sets requested by the SSC Chair's Office. In addition to this, our database provided the information required to support the **SSC Internal Grants** and **SSC EDGE Internal Grants** programs implemented during 2021.

Global response to the SSC DATA information gathering process

The SSC DATA IS platform allows year-round uploading of targets and results. This enabled the leaders of the SSC groups to begin the reporting process for 2021 as early as January 2021, however, most of the groups chose to upload their results during 2022, and the process extended until October 2022.

Uploaded results were the subject of an exhaustive process of data curation that ended with the production of the 2021 report for each SSC group (page 67). The assembled reports went through an editing and proofreading process to obtain the publication version. Each 2021 stand-alone report was delivered to the respective group for its use and free distribution through social networks and websites, and uploaded to the new **IUCN SCC website**.

During 2021, 167 groups were part of the SSC Network: 136 Specialist Groups (93 Animalia, 29 Plantae, 5 Fungi, and 9 Disciplinary), 1 Action Partnership, 14 Red List Authorities, 8 Task Forces, and 8 Committees. Of them, 146 (87.4%) submitted their 2021 results for data analysis and preparation of the 2021 reports. Across all these group categories, the response to the SSC DATA process was consistently high and resembled the behaviour of the SSC groups during previous years (Fig. 1).

Figure 1

Completion level of 2021 report submission per group type (%).

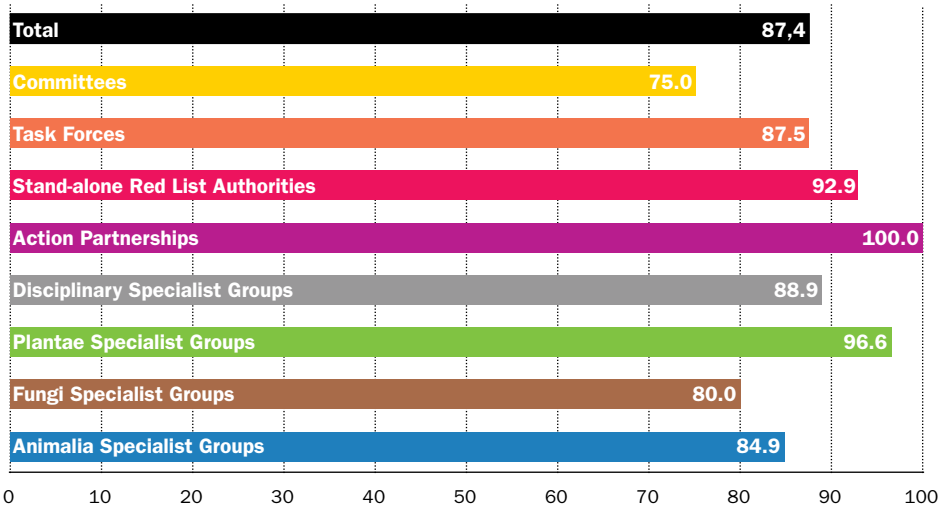
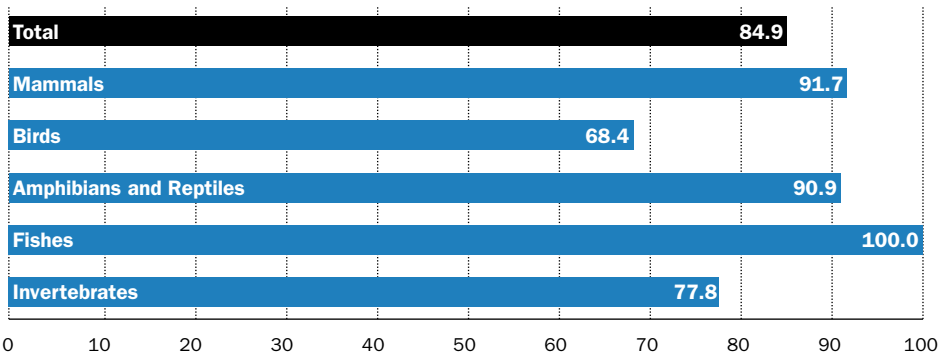


Figure 2

Completion level of 2021 report submission per zoological category (%).



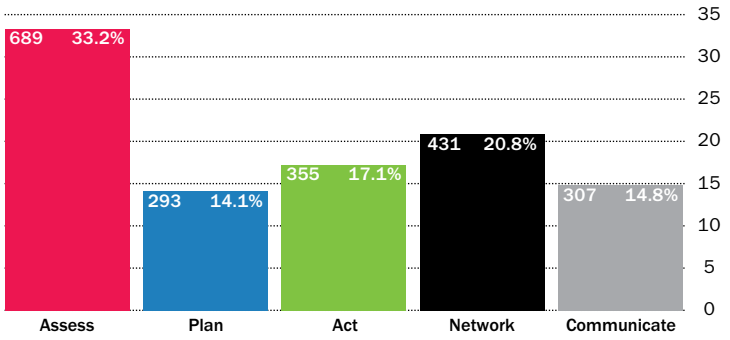
For Animalia groups, which comprise the taxonomic category with the largest number of SSC groups (36 Mammals, 19 Birds, 11 Amphibian and reptiles, 9 Fishes, and 18 Invertebrates), the majority of zoological categories responded massively to the data gathering process. However, we noticed a historically low level of report submission in the case of specialist groups dedicated to birds and invertebrates; 13 of 19 (68.4%) bird groups reported their 2021 results, and 14 of 18 (77.8%) invertebrate groups reported their 2021 results (Fig. 2).

SSC group targets for the 2021-2025 quadrennium

By the end of 2021, SSC groups had uploaded 2,075 targets for the 2021-2025 quadrennium. Target allocation into the five components of the Species Conservation Cycle was not evenly distributed (Fig. 3). Thirty three percent of targets corresponded to the Assess component, which indicates that actions related to Red List assessments, reassessments and Red List Indices dominate the Species Strategic Plan for the quadrennium. Network was second in importance, with near 21% of the targets, followed by Act with 17%, and finally Communicate and Plan, each with nearly 14%. Based on this distribution of targets, the SSC groups are giving priority to Red List assessments and reassessments at different spatial scales and to research activities. In second place, the groups aim to invest efforts to support their network by enhancing membership, capacity building, and key alliances. Quite remarkable is the Act component, which reached the third place of importance, indicating that many groups plan to invest more time and effort in the implementation of species conservation actions. Finally, the SSC Network is allocating similar importance to the formulation of targets aimed at conservation planning and innovative communication of biodiversity information and species conservation.

Figure 3

Targets for the 2021-2025 quadrennium by component of the Species Conservation Cycle (%) N= 2,075.



The percentage of targets associated with each component of the Species Conservation Cycle varied depending on the type of group analysed. For SSC groups belonging to Animalia, Plantae, and Fungi, the five components were represented. Across the three kingdoms, Assess dominated and Plan had the lowest representation (Fig. 4). For Fungi, 50% of the targets corresponded to the Assess component, followed by Network (21.9%), Communicate (15.6%), Act (9.4%), and Plan (3.1%). For Plantae, Assess comprised 39.3% of all targets, followed by Network (21.7%), Act (16.9%), Communicate (12.5%), and Plan (9.6%). For Animalia, Assess leaded with 32.6% targets, followed by Network (20.1%), and then Act, Communicate, and Plan showed similar percentages of targets (14-17%). The five components were represented in Disciplinary groups, leaded by Plan with 35.7% of the targets, followed by Act (19.4%), Network (17.4%), Assess (15.3%), and Communicate (12.2%). For the only Action Partnership in the network, targets were mostly allocated to Act (37.5%), Network (25.0%), and Communicate (25.0%). The remaining targets corresponded to the Plan component (12.5%). In the case of Stand-alone Red List Authority groups, concordant with their focus of action, 47% of the targets corresponded to Assess, followed by targets in the other four components, Network (19.7%),

Communicate (13.6%), Act (10.6%), and Plan (9.1%). Task Forces also had targets associated with the five components, but with clear dominance of Assess (45.5%) and Network (31.8%), and comparatively lower contributions of Communicate (11.4%), Plan (9.1%), and Act (2.3%). SSC Committees formulated targets in the five components, leaded by Network (26.7%), Assess (24.4%), and Act (22.2%), with similar weights, and Communicate (13.3%) and Plan (13.3%) with comparatively lower representation.

Figure 4

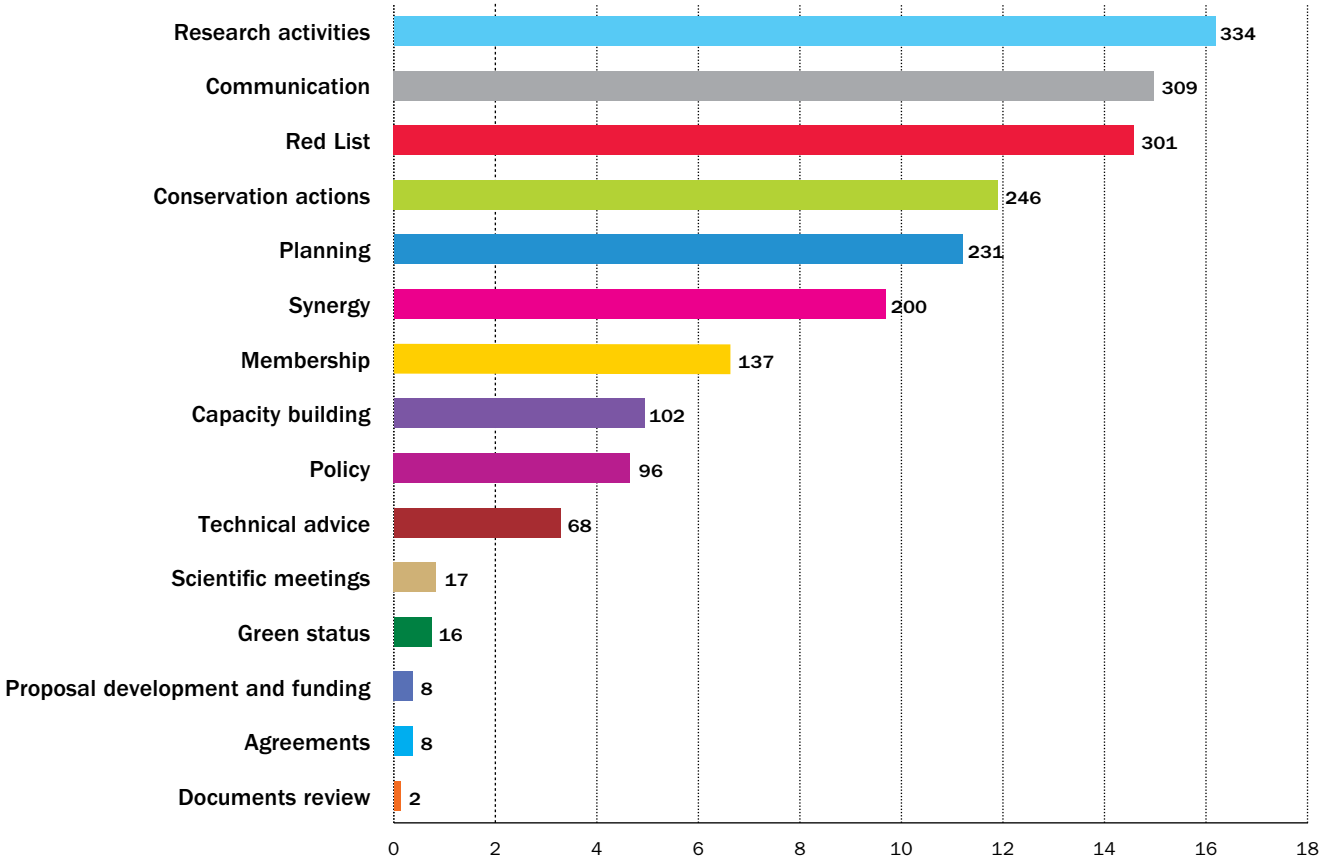
Targets of the different SSC group types as a function of the five components of the Species Conservation Cycle (%).



The targets proposed by SSC groups translate into 15 focal activities. For the 2021-2025 quadrennium, the top six actions included in order of importance are research activities (16.1%), communication (14.9%), red listing (14.5%), conservation actions (11.9%), planning (11.1%), and synergy (9.6%) (Fig. 5). A second group of activities, less frequently proposed (3.3% - 6.6%) but common to many SSC groups, included membership, capacity building, policy, and technical advice. Finally, the less frequently proposed activities (0.1% - 0.8%) included scientific meetings, Green Status, proposal development and funding, agreements, and documents review.

Figure 5

Activity categories of targets proposed by the SSC groups for the 2021-2025 quadrennium (%).



At a finer scale, the main activity types associated with the targets of Taxonomic Groups (Animalia, Plantae, and Fungi) included red listing (12-40%), research activities (9-18%), communication (10-15%), conservation actions (12-14%), planning (8-11%) and synergy (7-10%) (Table 3). In the case of Disciplinary Groups, top activities included planning (28%), communication (15.3%), and synergy (11.2%). For the Action Partnership, the activities of highest relevance were communication (25%) and conservation action (25%). In the case of Red List Authority Groups, the most frequently conducted activities corresponded to red listing (36.4%) and communication (13.6%). For Task Forces, there are five top activities that concentrate these groups' efforts, communication (22.4%), research activities (18.2%), membership (15.9%), planning (11.4%), and synergy (11.4%). Finally, for Committees the leading activities included conservation actions (16.7%), red listing (13.3%), and communication (13.3%).

Degree of accomplishment of targets by the SSC Network

The leaders of SSC groups indicated the status of their targets by the end of 2021. The level of accomplishment of the targets is classified into three categories: (1) *Achieved*, for those completely accomplished by the end of the year, (2) *On track*, for those showing progress in their associated activities or in some cases already presenting results, and (3) *Not initiated*, for those not yet initiated or postponed due to a variety of reasons.

Across the five components of the Species Conservation Cycle, percentages of on track targets varied between 56% (Network) and 65% (Act), and percentages of achieved targets varied between 6% (Assess) and 16% (Communicate) (Fig. 6).

Table 3

Activity categories of targets proposed by each type of SSC group (%) by the end of 2021.

Activity category of targets	Animalia (N= 1465)	Plantae (N= 272)	Fungi (N= 32)	Disciplinary (N= 98)	Action Partnership (N= 8)	Red List Authorities (N= 66)	Task Force (N= 44)	Committees (N= 90)
Agreements	0.41	0.37	0.00	0.00	0.00	0.00	0.00	1.11
Capacity building	4.23	6.62	12.5	3.06	12.50	9.09	4.55	6.67
Communication	15.49	10.66	15.63	15.31	25.00	13.64	22.37	13.33
Conservation actions	12.08	13.97	3.13	7.14	25.00	7.58	2.27	16.67
Documents review	0.14	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Green List	0.75	0.00	0.00	1.02	0.00	1.52	6.82	0.00
Membership	5.87	8.09	6.25	5.10	12.50	7.58	15.91	10.00
Planning	10.85	8.82	3.13	27.55	12.50	9.09	11.36	8.89
Policy	4.91	1.84	3.13	9.18	0.00	0.00	4.55	7.78
Proposal dev & funding	0.41	0.00	0.00	2.04	0.01	0.00	0.00	0.00
Red List	12.56	23.90	40.63	2.04	0.02	36.36	2.27	13.33
Research activities	17.88	13.97	9.38	9.18	0.03	9.09	18.18	8.89
Scientific meetings	0.82	1.84	0.00	0.00	0.04	0.00	0.00	0.00
Synergy	10.38	6.99	3.13	11.22	0.05	4.55	11.36	10.00
Technical advice	3.21	2.94	3.13	7.14	12.50	1.52	0.00	3.33

Overall, by the end of 2021, 71.4% of the targets formulated by the SSC Network were either on track (61.8%) or already achieved (9.6%) (Fig. 7). All group types showed progress in the achievement of their targets, but the proportions of on track and achieved targets varied across groups. SSC Committees, Fungi groups, and the Asian Species Action Partnership had combined percentages of on track and achieved targets between 50% and 62%. Animalia and Plantae groups had combined percentages of on track and achieved targets between 71% and 73%. Stand-alone Red List Authorities, Task Forces, and Disciplinary groups reached top combined percentages (77%-85%) of on track and achieved targets.

Figure 6

Degree of accomplishment of targets by the end of 2021 as a function of components of the Species Conservation Cycle. Numbers within coloured bars indicate number of targets.

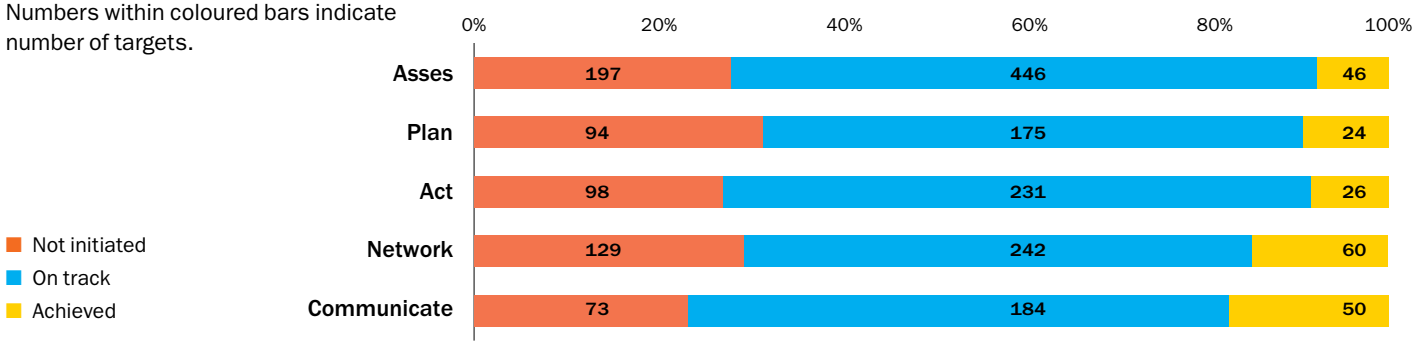
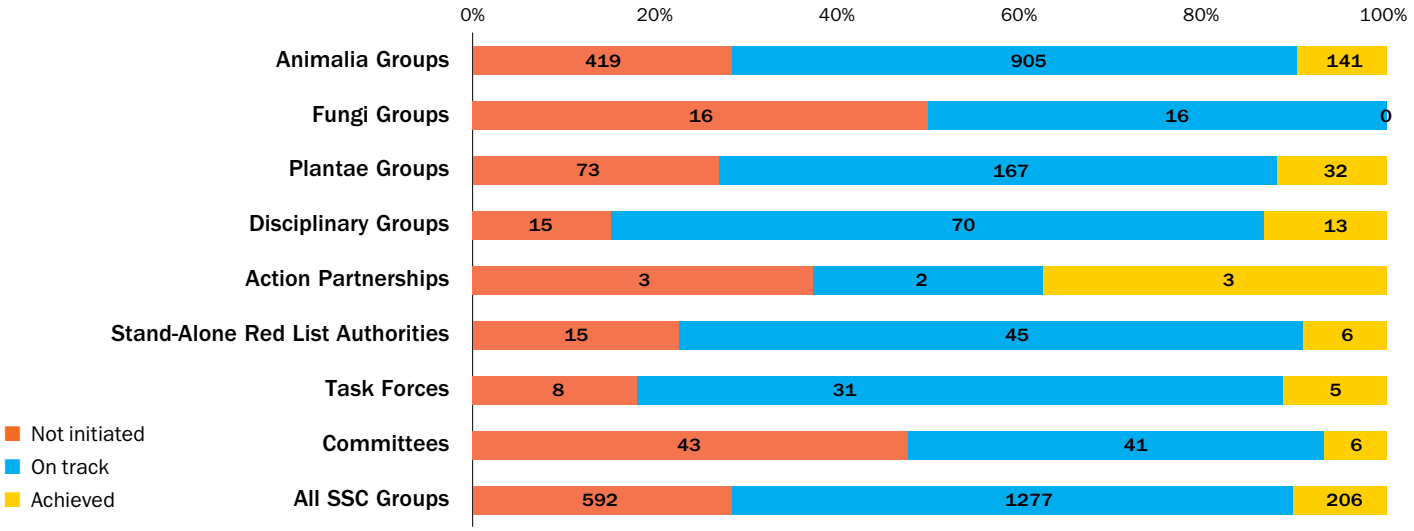


Figure 7

Degree of accomplishment of targets by the end of 2021 as a function of SSC Group types. Numbers within coloured bars indicate number of targets.



SSC Network activities and results in 2021

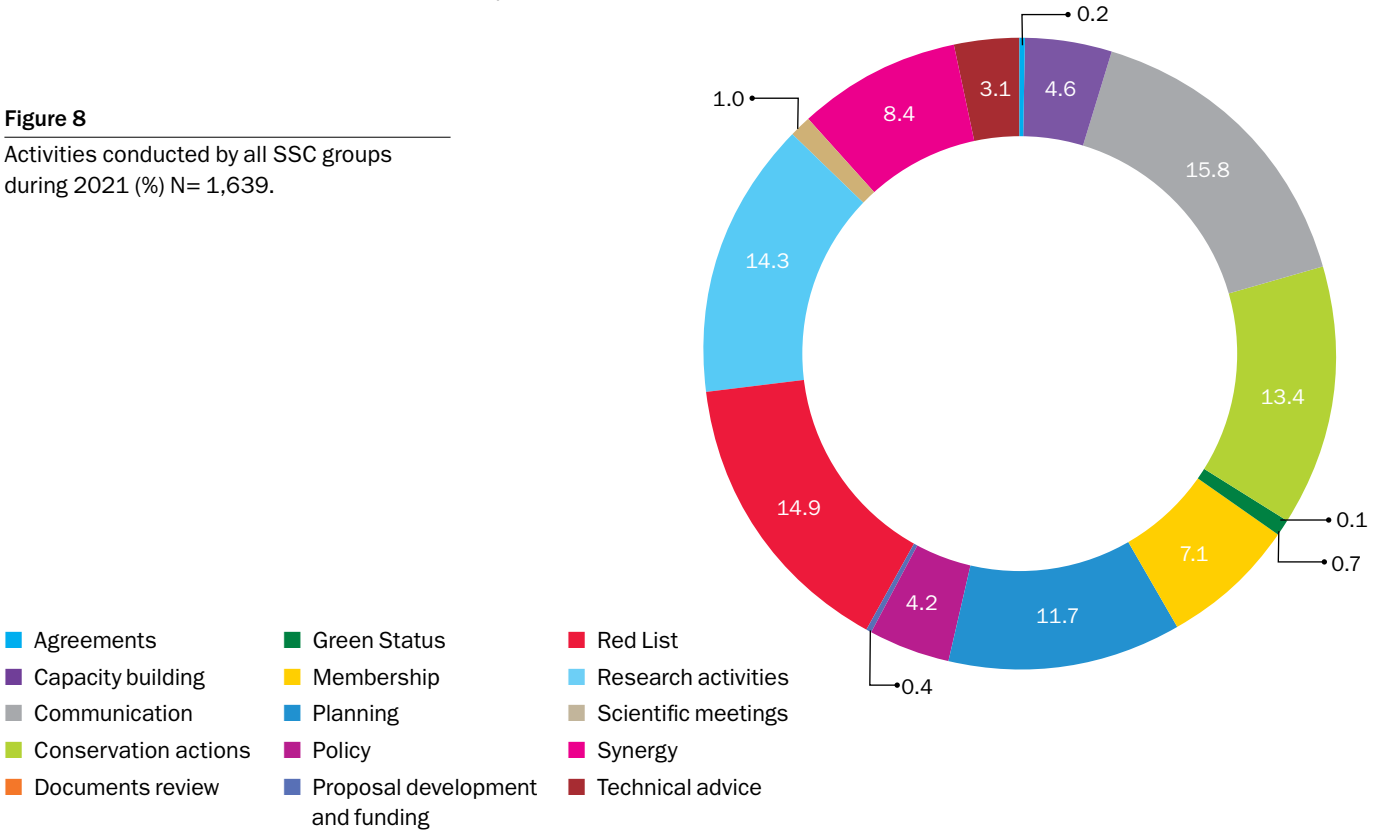
GLOBAL OVERVIEW OF ACTIVITIES AND RESULTS

On average, each SSC group conducted activities related to 3.4 (1.37 SD) components of the Species Conservation Cycle. Only a small fraction of the groups (11.7%) reported activities covering the five components during 2021. Also, a similar fraction of the groups (12.9%) reported activities related to a single component, as was the case for several Stand-alone Red List Authorities.

A total of 1,639 activities were conducted and their associated results reported by the groups for 2021 (Fig. 8). Activities and results mirrored the targets proposed for 2021-2025 (Fig. 5) in terms of activity categories, with communication (N= 259, 15.8%), red listing (N= 244, 17.9%), research activities (N= 234, 14.3%), conservation actions (N= 220, 13.4%), and planning (N= 192, 11.7%) ranking at the top of the reported activities.

Figure 8

Activities conducted by all SSC groups during 2021 (%) N= 1,639.



Among the most frequently used indicators to track progress of communication activities (N= 259) we can mention: number of digital communication outputs developed in relation to specific taxonomic groups (24.3%), number of Species e-bulletin, Save Our Species newsletter and SSC Groups' newsletter editions produced (14.7%), number of communication products using innovative tools (6.9%), number of print communications materials distributed in relation to specific taxonomic groups (6.9%), number of SSC members' presentations developed in relation to specific taxonomic groups (5.8%), and number of media articles mentioning IUCN Species theme (4.2%).

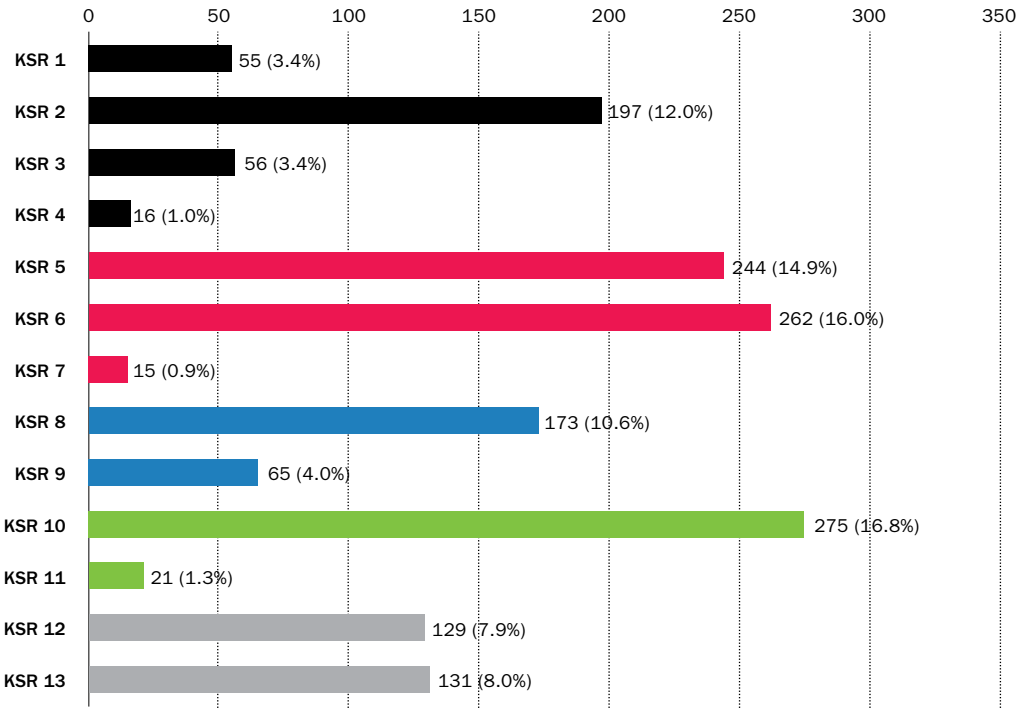
The most frequently used indicators to track progress of red listing activities (N= 244) included: number of global Red List reassessments completed (37.3%), number of new global Red List assessments completed (31.1%), number of new national Red List assessments published (6.1%), number of technical documents provided to support RL assessments/reassessments (5.3%), and number of national Red List reassessments published (4.5%).

The most frequently used indicators to track progress of research activities (N= 234) included: number of research projects completed or supported by SSC members per taxonomic group and region (42.7%), number of scientific publications about species research that acknowledge SSC affiliation (32.9%), number of publications produced in internal journals of SSC groups (9.0%), number of species that have been assessed through the different tools (2.6%), and number of new KBAs confirmed in the World database of KBAs (WDKBA) (1.7%).

The most frequently used indicators to track progress of conservation actions (N= 220) included: number of threatened species benefiting from *in situ* conservation action (24.0%), number of actions addressing major drivers/emerging threats of species or population loss (17.3%), number of species with increased or prevented decrease in population or range size as a result of conservation actions (15.5%), number of technical documents provided to support conservation actions (12.7%), number of areas under management for the species or group of species (8.6%), number of conservation translocations conducted (5.9%), and number of intervention letters addressing major drivers/emerging threats of species or population loss (2.7%).

Figure 9

Key Species Results associated with activities (N= 1,639).



The most frequently used indicators to track progress of planning (N= 192) included: number of conservation plans/strategies developed (35.9%), number of conservation plans/strategies updated (7.8%), number of technical documents to support the development of conservation plans/strategies (7.8%), number of plans invited/endorsed by national governments/conservation authorities (2.6%), and number of Assess to Plan (A2P) species assessments completed (1.6%).

The 13 Key Species Results (KSRs) of the 2021-2025 Species Strategic Plan have been reported by the SSC groups as part of their 2021 results (Fig. 9). For the Network component, KSR #2 (*Enhance the membership and the capacity of the SSC network and its alliances*) was the most reported (N= 197). For the Assess component, KSR #5 (*Improve and publish biodiversity and conservation knowledge*) and KSR #6 (*Expand the coverage, quality and content of biodiversity assessments: IUCN Red List, Environmental Impact Classification for Alien Taxa (EICAT), Climate Change vulnerability, Assess to Plan (A2P), Green Status of Species and species-focused Key Biodiversity Areas (KBAs)*) were the most frequently reported (N= 244 and N= 262, respectively). For the Plan component, KSR #8 (*Strengthen and expand species conservation planning efforts at local, national, regional and global scales*) was the most frequently reported (N= 173). For the Act component, KSR #10 (*Enhance biodiversity conservation action through implementation of effective, collaborative and practical approaches*) was the most frequently reported (N= 275). Finally, for the Communicate component, KSR #12 (*Further strengthen IUCN's species theme as a strong and credible source on biodiversity information for target audiences*) and KSR #13 (*Increase the visibility of different taxa and species conservation through strategic and innovative communications that attract new audiences*) were equally reported by the SSC groups (N= 129 and N= 131, respectively).

ACTIVITIES AND RESULTS BY MAIN SSC GROUP TYPES

Fungi Specialist Groups reported 17 activities in eight categories, with a major effort invested on red listing and research (Fig. 10). Plantae Specialist Groups reported 219 activities in eleven categories with red listing as the dominant one, followed by conservation actions, research, and communication. Animalia Specialist Groups reported 1,116 activities distributed among 15 activity categories with major efforts allocated in research activities, communication, conservation actions, and red listing. Disciplinary Specialist Groups reported 121 activities in 12 categories with planning covering 47% of the activities. The Action Partnership Group reported six activities in five categories and emphasis on communication. Stand-alone Red List Authority groups reported 52 activities in nine categories with 44% of the categories concentrated in red listing. Task Forces reported 41 activities in 10 different categories with four dominant ones, communication, membership, planning, and synergy.

ACTIVITIES AND RESULTS BY ANIMALIA SSC GROUPS

Animalia Specialist Groups make up 55.7% of the SSC network; thus, their activities and results allow for more detailed analysis, disaggregated according to Mammals, Birds, Amphibia and Reptiles, Fishes, and Invertebrates (Fig. 11). Depending on the group, between 10 and 14 activity categories were identified. Although all zoological groups concentrated on a few categories, their relative effort investment varied.

Mammal groups dominated with 490 activities that addressed the 13 KSRs. Main KSRs included: #2 (11.0%), #5 (17.1%), #6 (15.1%), #8 (9.0%), #10 (17.8%), #12 (8.0%), and # 13 (6.9%). Main activity categories included research activities (15.7%), Red List (15.5%), communication (14.7%), conservation actions (11.6%), and synergy (10.8%). Research activities emphasized on implementation of research projects and publications produced in internal journals of SSC groups. Red List activities concentrated on global Red List reassessments, national Red List reassessments, Green Status of species assessments, and production of

technical documents provided to support RL assessments and reassessments. Communication activities were focused on production of digital communication outputs developed in relation to specific taxonomic groups,production of print communications materials distributed in relation to specific taxonomic groups, and production of Species e-bulletin, Save Our Species newsletter and SSC Groups' newsletter editions. Conservation actions were mainly focused on implementation of actions addressing major drivers/emerging threats of species or population loss, conservation translocations, interventions aimed at population increase or prevention of population decrease or range size, *in situ* conservation interventions, and production of technical documents to support conservation actions. Synergic activities concentrated on search and establishment of funding and in-kind partnerships.

Figure 10

Activities conducted by main SSC group types in 2021. Activities are indicated for each activity category in percentage.

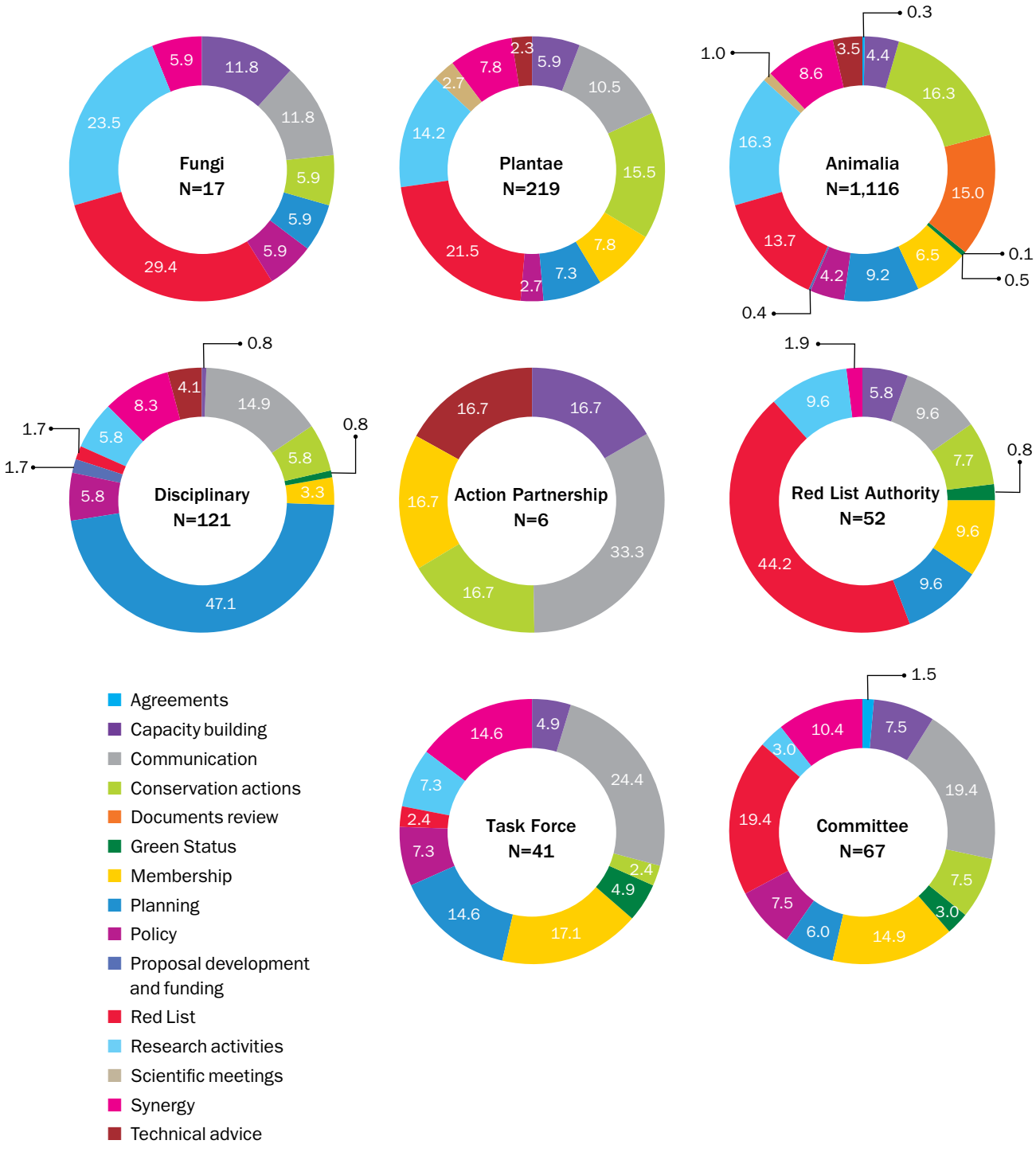
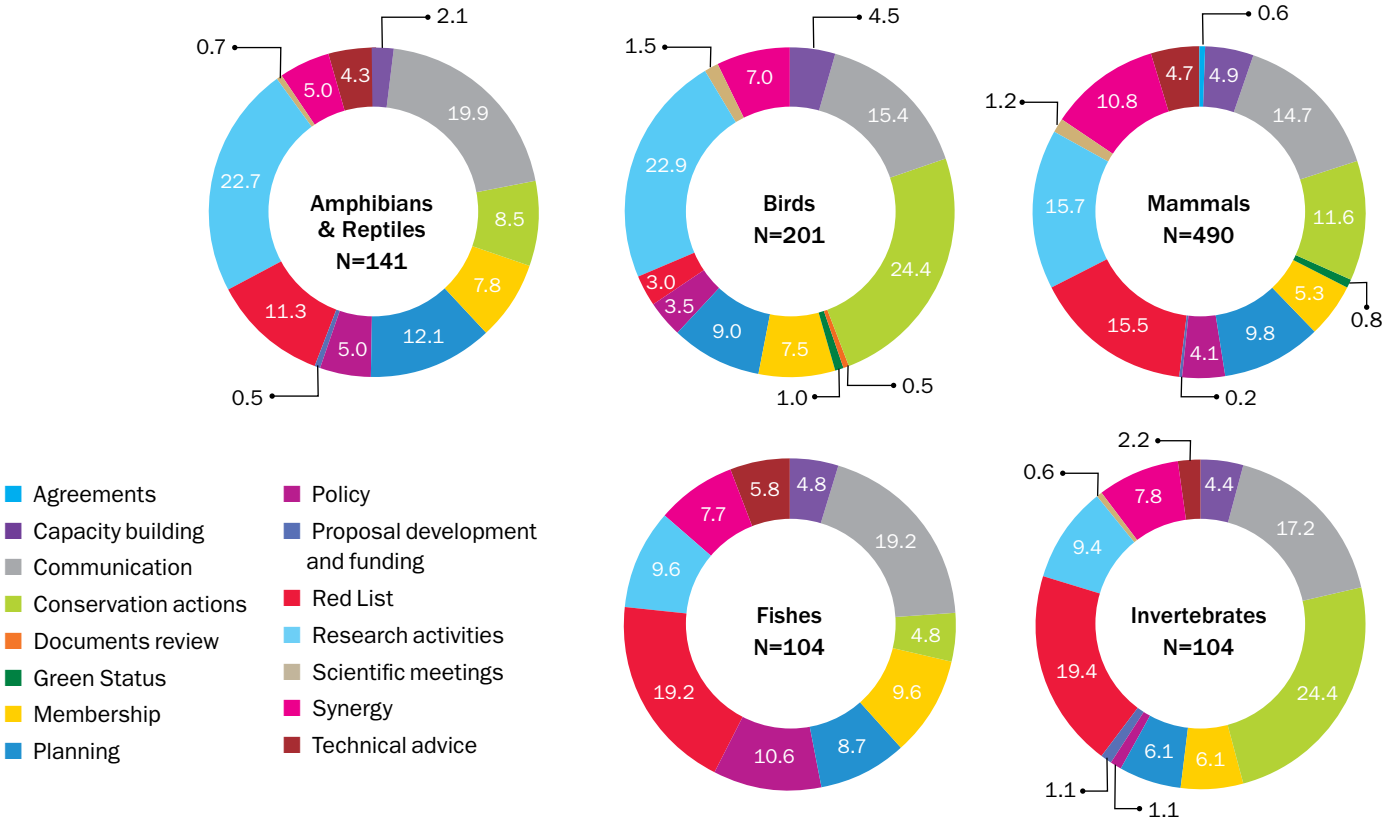


Figure 11

Activities conducted by Zoological Groups in 2021. Activities are indicated for each activity category in percentage.



Bird groups reported 201 activities that addressed 12 KSRs. Main KSRs included: #2 (13.4%), #5 (22.4%), #8 (9.0%), #10 (25.3%), #12 (8.5%), and #13 (8.5%). Main activity categories included conservation actions (24.4%), research activities (22.9%), and communication (15.4%). Conservation actions concentrated on implementation of actions addressing major drivers/emerging threats of species or population loss, areas under management for the species or group of species, interventions aimed at population increase or prevention of population decrease or range size, and *ex situ/in situ* conservation actions of threatened species. Research activities emphasized on implementation of research projects, production of publications in internal journals of SSC groups, and production of scientific publications about species research. Communication activities focused on production of digital communication outputs developed in relation to specific taxonomic groups, production of media articles mentioning IUCN Species theme, and publication of Species e-bulletin, Save Our Species newsletter, and SSC Groups' newsletters.

Amphibian and reptile groups reported 141 activities that addressed 11 KSRs. Main KSRs included: #5 (23.4%), #6 (12.1%), and #10 (12.1%). Main activity categories included research activities (22.7%), communication (19.9%), planning (12.1%), and Red List (11.3%). Research activities concentrated on publications in internal journals of SSC groups, implementation of research projects, production of publications in internal journals of SSC groups, and scientific publications about species research. Communication activities centred on generation of communication products using innovative tools, digital communication outputs developed in relation to specific taxonomic groups, production of print communications materials distributed in relation to specific taxonomic groups, and presentations developed in relation to specific taxonomic groups. Planning activities focused on development and update of conservation plans and strategies. Red List activities concentrated on completion and publication of global and national Red List assessments and reassessments.

Fishes groups reported 104 activities that addressed the 13 KSRs. Main KSRs included: #2 (12.5%), #6 (19.2%), #10 (11.5%), and #13 (15.4%). Main activity categories included Red List (19.2%), communication (19.2%), policy (10.6%), membership (9.6%), and research activities (9.6%). Red List activities centred on global Red List assessments and reassessments. Communication activities focused on generation of communication products using innovative tools, digital communication outputs developed in relation to specific taxonomic groups, production of print communications materials distributed in relation to specific taxonomic groups, and presentations developed in relation to specific taxonomic groups. Policy activities included production of documents provided to support/guide policy-making, technical input on policies, and position statements addressing major drivers/emerging threats of species or population loss. Membership activities focused on recruitment of new members. Research activities concentrated on scientific publications about species research.

Invertebrate groups reported 180 activities that addressed 11 KSRs. Main KSRs included: #2 (11.7%), #5 (7.8%), #6 (21.7%), #10 (25.6%), and # 13 (11.1%). Main activity categories included conservation actions (24.4%), Red List (19.4%), and communication (17.2%). Conservation actions focused on implementation of actions addressing major drivers/emerging threats of species or population loss, areas under management for the species or group of species, conservation translocations, interventions aimed at population increase or prevention of population decrease or range size, and *in situ/ex situ* conservation actions. Red List activities concentrated on global and national Red List assessments and reassessments. Communication activities were dedicated mainly to production of digital communication outputs developed in relation to specific taxonomic groups, presentations developed in relation to specific taxonomic groups, production of Species e-bulletin, Save Our Species newsletter, and SSC Groups' newsletters, and production of print communications materials distributed in relation to specific taxonomic groups.

ACTIVITIES AND RESULTS IN RELATION TO 2020 WORLD CONSERVATION CONGRESS RESOLUTIONS

SSC groups reported activities and results achieved during 2021 in connection with 54 (44.6%) of the 121 **IUCN Resolutions** adopted during the 2020 World Conservation Congress in Marseille, France.

Resolutions reported by SSC Groups were, as follows: 002, 005, 008, 009, 113, 114, 018, 020, 023, 025, 030, 032, 040, 048, 054, 057, 062, 063, 071, 081, 085, 089, 091, 093, 094, 095, 096, 097, 098,101, 103, 105, 107, and 128 for Animalia; 002, 009, 057, 062, 079, 081, 085, 093, 100, 102, 114, and 116 for Plantae; 009 for Fungi; 009, 025, 030, 048, 076, 079, 085, 093, 095, 098, 101, 102, 105, and 128 for Disciplinary; 057, 063, 079, 081, 107, 114, 116, and 128 for Red List Authorities; 003, 023, 025, 030, 032, 072, 091, 101, 107, 113, 114, 116, and 122 for Task Forces; 020, 023, 025, 054, 062, 081, 091, 095, 105, 107, 113, 122, 128, and 086 for Committees.

A total of 50 (34.2%) SSC Groups out of 146 reporting results for 2021 indicated that their activities helped support actions requested in the 2020 WCC Resolutions. The group that reported the top number of resolutions addressed was the Marine Mammal Protected Areas Task Force (12), followed by Marine Conservation Committee (10), Seed Conservation SG (10), Conservation Translocation SG (9), Cetacean SG (7), Iguana SG (7), Snapper, Seabream and Grunt SG (7), Asian Elephant SG (6), Bird Red List Authority (5), Deer SG (5), Spider and Scorpion SG (5), Bustard SG (4), Croaker and Drum Fishes Red List Authority (3), Madagascar Plant SG (3), Western Ghats Plant SG (3), Wild Pig SG (3), Asian Songbird Trade SG (2), Conifer SG (2), Crane SG (2), Otter SG (2), Pangolin SG (2), Southern African Plant

(2), Sustainable Use and Livelihoods SG (1), Bison SG (1), Chytrid, Zygomycete, Downy Mildew and Myxomycete SG (1), Climate Change SG (1), Conservation Genetics SG (1), Conservation Planning SG (1), Coral SG (1), Dragonfly SG (1), Fungal Conservation Committee (1), Global Tree SG (1), Groupers and Wrasses SG (1), Hippo SG (1), Human-Wildlife Conflict and Coexistence SG (1), Invasive Species SG (1), KBA Standard and Appeals Committee (1), Macaronesian Islands Plant SG (1), Mascarene Island Plant SG (1), Monitor Lizard SG (1), Orchid SG (1), Post-2020 Biodiversity Targets Task Force (1), Seahorse, Pipefish and Seadragon SG (1), Shark SG (1), Small Carnivore SG (1), South American Camelid SG (1), Vulture SG (1), Wildlife Health SG (1), Biodiversity and Family Planning Task Force (1), and Oil Crops Task Force (1).

Resolution 079 – "Linking *in situ* and *ex situ* efforts to save threatened species" was linked to the highest number of activities reported (51), followed by Resolution 107 – "Reducing the impact of fisheries on marine biodiversity" (24), Resolution 023 – "Reducing impacts of incidental capture on threatened marine species" (24), Resolution 095 – "Conservation of seahorses" (20), Resolution 025 – "Ecosystem conservation" (19), Resolution 128 – "Acting for the conservation and sustainable use of marine biological diversity in the ocean beyond national jurisdiction" (19), Resolution 089 –Preventing the extinction of the Great Indian Bustard (*Ardeotis nigriceps*) in India" (17), Resolution 093 – A call for increased consideration of genetic diversity in IUCN planning and actions" (13), Resolution 009 – "Protecting and restoring endangered grassland and savannah ecosystems" (12), Resolution 057 – Accounting for biodiversity: encompassing ecosystems" (12), and Resolution 085 – "Rewilding" (12). The rest of the resolutions were linked to fewer than 12 activities.

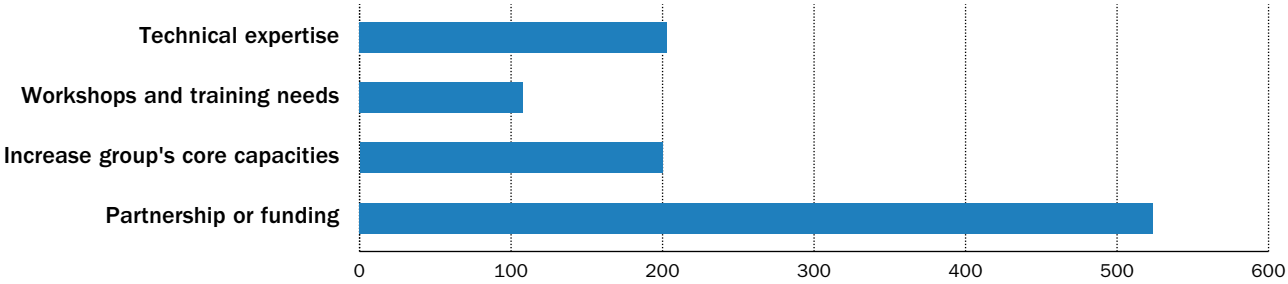
Core support and partnership needs of SSC groups

Out of 146 SSC groups that completed their SSC DATA results' submission for 2021, 34 (22.3%) did not provide any information related to their core partnership needs.

Regarding the types of support and/or needs reported by the SSC Network (Fig. 12), 93 (63.7%) groups expressed the need of partnership or funding support and 524 activities were related to this need; 65 (44.5%) groups pointed out their interest in technical expertise and 203 activities were related to this need; 57 (39.0%) groups expressed their need of increasing group capacities and 200 activities were related to this need; and 45 (30.8%) groups indicated the need of workshops and training courses and 108 activities were related to this need.

Figure 12

Core partnership needs of SSC groups for SSC DATA results in 2021



In relation to partnership and funding, the most frequent activities that require this type of support included conservation actions (18.7%), red listing assessments and reassessments (16.1%), meetings (13.5%), core operations (13.1%), staff (12.9%), and host organization(s) for core support (2.8%). Regarding technical expertise, the main interests pointed out by the network were conservation strategy planning

(84.7%) and mapping expertise (15.3%). In relation to the interest for increasing groups' core capacities, the focus of interest included communications strategies (30.7%), group management tools (23.3%), increase membership (18.5%), websites and social media (15.9%), and administrative support (11.6%). Finally, for workshop and training needs, the groups focused their interest in red listing (48.2%), conservation planning (42.9%), fundraising (8.5%), and population viability analysis (0.4%).

These trends are used as a guideline for the SSC Partnership Team to outline the SSC partnership strategy, as well as to analyse and make decisions to better allocate resources and match needs with different SSC partners.

Concluding remarks

We started the 2021-2025 quadrennium with more than 2,000 targets formulated by the SSC Network, a figure considerably larger than the initial number of targets (1,032) recorded for the previous quadrennium. Our network continues growing in number of group members, and with it, our Species Strategic Plan is getting stronger and expanding in number of targets, diversity of actors and approaches to species conservation.

The report submission rate for 2021 comprised 87% of all SSC groups, which represents a rate of participation slightly lower than the values observed for the annual reporting process throughout the 2017-2020 quadrennium. Adaptation to the use of the SCC DATA Information System is taking time. The system demands a small effort to learn how to feed the data in the different data modules and frequent usage to get used to it. The SSC DATA Unit and the Conservation Coordinators of the GCSS will continue providing the support and assistance needed to facilitate the process of annual reporting in SSC DATA.

Thanks to the targets uploaded by the groups to SSC DATA during 2021 we were able to launch new rounds of the SSC Internal Grants and SSC EDGE Internal Grants, specifically aimed at supporting the SSC groups in some of their core needs in the five components of the Species Conservation Cycle. Besides considering the quality level of the proposals submitted, a direct connection of the proposals with the targets registered in SSC DATA is a requirement to grant financial aid to the projects submitted by the groups. Therefore, we encourage SSC groups to upload their targets to SSC DATA IS and participate in our internal grants program.

At the SSC Chair's Office, we acknowledge and applaud the great contribution of all SSC groups building up the 2021-2025 Species Strategic Plan we just initiated this year. It is a promising new quadrennium that has started with strength, enthusiasm, and many possibilities of success for species conservation all over the world.

▶

Ophrys helenae (Helen's bee orchid, Greece). Sometimes treated as a subspecies of *O. sphegodes*, it is listed as rare in the Greek Red List book, although it can still be found in relatively large numbers in the NW of the country
Photo: Martha Charitonidou



Global Species and Key Biodiversity Area Programme 2021

Species are critical for the survival of the planet but face threats to their own survival: habitat destruction, invasive alien species, overexploitation, illegal wildlife trade, pollution and climate change are some of the most significant. IUCN's Global Species Programme [1] (GSP) works hand in hand with SSC at the forefront of the global fight to save species from extinction.

[1] Full name: IUCN Global Species and Key Biodiversity Area Programme

As part of the IUCN Secretariat, the Global Species Programme has distinct roles and responsibilities, and jointly implements the IUCN Species Plan with SSC. The IUCN Global Species Programme has staff in IUCN offices in Belgrade, Brussels, Cambridge, Gland Washington D.C., and Yaoundé. The major roles of the IUCN Global Species Programme include ensuring The IUCN Red List of Threatened Species™ is the primary website for global species information in the world, coordinating the input into global policy from across IUCN on species conservation issues and catalysing conservation action through empowering IUCN Members to undertake conservation action.

The IUCN Global Species Programme contributes to Assess, Plan and Act through:

ASSESS: Knowledge for species conservation – species conservation is directed to priority taxa, sites and places based on biodiversity knowledge. GSP provides many of the roles and functions that both maintain and promote The IUCN Red List of Threatened Species.

PLAN: Policy and planning for species conservation – the status of species is improved through decisions that limit further significant declines in wild species and their habitats, and catalyse population recoveries across all scales. GSP coordinates the knowledge and expertise of IUCN and delivers them to global policy makers through policy processes of multilateral environment agreements.

ACT: Species conservation action – improved status of wild species and habitats in key conservation sites through targeted interventions. GSP provides grants to conservation organisations.

Assessments for Species Conservation

The IUCN Red List of Threatened Species™

Thanks to the ongoing support of various project donors and the legacy provided by the IUCN-Toyota Red List Partnership, the number of new species assessments published on The IUCN Red List continued to grow. Three updates of the Red List were published in 2021. For the first (on **25th March**), the media release highlighted the status of elephants in Africa. The second update (on **4th September**) was during the IUCN World Conservation Congress, and the media release focused on recovery of some tuna species versus the decline in sharks and rays (a complete reassessment) and highlighted the plight of the Komodo Dragon. The third update (on **9th December**) and the media release reported on the first global assessment of the world's dragonflies and damselflies plus the declining status of the Pyrenean Desman.

Overall coverage of the Red List increased from 128,918 species at the end of 2020 to 142,577 species at the end of 2021. The number of threatened species increased from 35,765 to 40,084, although the overall proportion threatened (28%) remained about the same. In 2021, 16,845 assessments were processed, including 13,762 new species added to the Red List (particularly freshwater fish, reptiles and trees) and 3,083 reassessed species (particularly amphibians, birds, mammals, sharks, and rays).



The Komodo Dragon (*Varanus komodoensis*) was reassessed as Endangered due to a continuing decline in the extent of its habitat as a result of human activities and future climate change impacts
Photo © Paul Hien

The IUCN Red List Website continues to improve with new pages, enhancements and functionality added with each update. New features include:

- Redesign of the species pages, enabling incorporation of Green Status assessments.
- Inclusion of an automated abstract to enable search engines like Google Scholar to more easily find and index assessments as scientific papers.
- A new page with just the assessment narrative information.
- A new Acknowledgements field added to the assessments.
- New advanced search functionality to enable searches for species with Green Status assessments.
- New pages added to explain the new Species Threat Abatement and Recovery (STAR) metric which was developed based on Red List data.

The number of Red List website users continued to decline from over 4 million in 2019 to 2.9 million in 2020 and 2.7 million in 2021. This drop appears to still be linked to the pandemic but might also be because the Red List visibility dropped significantly in Google searches due to a change in Google's indexing algorithm. Efforts are underway to improve the Red Lists visibility in such searches. Despite the decline in visitors, the number of page views remains high at 16.2 million (16.6 million in 2020). The number of downloads of tabular data (15,992 downloads), spatial data, jpeg maps and assessment PDFs continues to remain similar to the previous high levels or in some cases even higher (e.g. 41,095 jpeg maps were downloaded in 2021 versus 30,439 in 2020).

Building Capacity for Red List Assessments

No new lessons or modules were added to the online Red List Training course, hosted by The Nature Conservancy (TNC) on their Conservation Training website. However, work began on a Portuguese translation of the course; that work is still ongoing. We also initiated discussions with TNC to update the course hosting agreement as this had expired. The training materials used by Red List Trainers for in-person or virtual training workshops were reviewed and updated.

With the ongoing global pandemic and many lockdowns still in place in 2021, we continued to see a high number of people enrolling on the course (2,171 enrolments), although not as high as in 2020 (2,607 enrolments). Many people just visit one or two modules for a basic introduction to the IUCN Red List, or to refresh their

memories about specific topics. Successful course completion is when students score at least 70% in all end-of-lesson quizzes. In 2021, the numbers of people successfully completing each version of the course were still considerably higher than in 2019:

- Global Assessor course: 474 (317 in 2019).
- Regional Assessor course: 460 (243 in 2019).
- Global & Regional Assessor course: 420 (231 in 2019).

Similar to the course module trends, the 2021 figures for the IUCN Red List exam were much higher than for previous years, with 604 people completing the default level exam (compared with 269 in 2019), and 414 people passing the exam (compared with 193 2019).

Since its release in 2014, 2,446 people have completed the default exam, with 1,789 people passing this exam (overall pass rate of 82%).

Fifteen people completed and passed the advanced exam in 2021, eight of whom were newly certified Red List Trainers. In total, 113 people have passed the advanced exam since April 2014.

We initiated use of an application form for the IUCN Red List Trainers course to make the application process fairer and allow development of criteria to help select eligible applicants for this course. Once again, due to pandemic, the Red List Trainers course was held online (27 Sep. to 1 Oct.) with nine participants; eight participants completed the course successfully. Currently, there are 67 certified Red List Trainers.

Due to ongoing global travel restrictions in 2021, we used online platforms to provide 6 remote training events, although three in-person workshops were also held. At least 202 people participated in these workshops. Reporting on all workshops held in 2021 is not complete, so the actual numbers are higher than those reported here. Although in-person training workshops are the preferred format, we have learned many lessons in 2020-21 to help us to improve the remote format for future workshops.

The Red List Guidelines were updated to version 15 at the end of 2021, delaying its release until January 2022. As a result, work on updating the French and Spanish translations is delayed until 2022/23.

Global Red List Assessments

REPTILES

The limited remaining funding for the reptile assessments available in 2021 from Environment Abu Dhabi supported the review of the reassessed genus *Lepidodactylus* and the submission of these and reassessments of the snakes and lizards of the Seychelles and the Comoros (reassessed in 2020), as well as continued support to the Red List Unit processing the Red List updates (2,488 reptile assessments were published on the IUCN Red List in 2021, of which 1,927 were new additions to the list). The first full reptile assessments were published for the Horn of Africa, much of Central Africa, Korea, and the Mascarenes, and for the full family Dactyloidae (anoles). As part of the continuing effort to add new descriptions to the Red List outside the assessment workshop process, 11 species of *Oedura, Boaedon* and *Heloderma* were assessed and published.

The major reptile project undertaken in 2021 was the reassessment of the reptiles of the Philippines, following a successful proposal to the Rainforest Trust led by Neil Cox submitted in February. This was the largest GRA 2 project to date, covering approximately 300 species, and the first project of this scale to be organized as a series of three online assessment workshops – organized by the Philippine

Department of Natural Resources and Conservation International Philippines. The workshops and the review of the majority of the resulting assessments was completed by the end of 2021. The Philippines reptile reassessment also represented a major collaboration between the Global Reptile Assessment process and the Conservation Planning Specialist Group's Assess 2 Plan process, both in support of the CPSG's Assess 2 Plan process and to update Red List data in order to permit an analysis of the distribution of threatened Philippine vertebrate diversity, both completed in early 2022.

Finally, an internal agreement was signed in 2021 to progress the planned reassessment of reptiles of the European region, to be held in 2022. This provided support to plan the reassessment process and update the species list, and start work on updating the assessments for this region – last assessed in 2009 – and creating assessments for newly-described European snakes and lizards.

FRESHWATER

In 2021, 2,051 assessments of species in the priority freshwater taxonomic groups (decapods, fishes, molluscs, odonates, and plants) were published on the IUCN Red List. This included completion of a comprehensive assessment of all odonates (dragonflies and damselflies, totaling 6,016 species) of which 16% were found to be threatened with extinction. This means that both the freshwater decapods (crabs, crayfishes, and shrimps) and odonates are now considered to be comprehensively assessed taxonomic groups. We are now working on completion of a comprehensive assessment of all freshwater fishes (c. 18,000 species). At the end of 2021, assessments of 11,291 freshwater fishes (c. 60% of described species) had been published on the Red List. This included 909 new assessments in 2021, primarily fishes from South America and the Caribbean.



The Yellowfin Tuna (*Thunnus albacares*) improved in status from Near Threatened to Least Concern due to sustainable fisheries management
Photo: Martin Gil Gallo / CC BY-NC

MARINE

In 2021, no in-person assessment workshops were held due to the ongoing pandemic. Despite this, substantial progress has been made on several projects as we continued to complete assessments virtually. This work resulted in the submission of ~700 marine species, most of which were never previously assessed.

As part of the work supported by the IUCN-Toyota Red List Partnership, 332 species of flatfishes, including heavily exploited, large-bodied halibuts, were submitted and 180 were published in 2021. Assessments for 275 species in the marine ornamental fish trade as part of a partnership between IUCN and the Swiss government to support CITES initiatives, including gobies, cardinalfishes, and damselfishes were submitted in 2021 and a further 160 species are scheduled for submission in 2022. With support from an internal SSC grant, 64 pygmygobies, which represent some of the smallest of the worlds' vertebrates, were submitted in 2021.

In collaboration with the IUCN SSC Snapper, Seabream and Grunt Specialist Group (SG), 10 assessments were submitted in 2021, with remaining species scheduled for submission in 2022. In collaboration with the IUCN SSC Coral Specialist Group

(SG), reassessments of all Atlantic reef-building corals were submitted in 2021 and the ~800 Indo-Pacific species are scheduled for submission in 2022. In collaboration with the IUCN SSC Tuna and Billfishes Specialist Group (SG), 15 reassessments of highly commercial species were published on the Red List in 2021, a further 50 species were submitted in 2021 and the remaining species are scheduled for submission in 2022.

Regional and National Red List Assessments

In 2021, the Brussels-based GSP Team continued to develop the European Red List of Hoverflies (2019-2022), via which approx. 900 European hoverflies were assessed. In December the European Red List of Hoverflies was published. The European Red List portfolio was further expanded through two new projects aiming to produce reliable information on the status of biodiversity available to support the work of conservation practitioners, scientists, land-use planners, policymakers, and other actors.

The year began with the start of the ERL Measuring the pulse of European biodiversity using the Red List Index project. The objective the project is to evaluate the changes in biodiversity status in Europe, at the EU and Pan-European scale, by updating existing European Red Lists up to and including 2014. This will provide a valuable evidence for the evaluation of the EU Biodiversity Strategy to 2020 and the development of its post-2020 follow-up. The proposed approach combines the mobilization of dedicated knowledge networks and data with the use of an established metric, the IUCN Red List Index (RLI), to update existing European Red Lists and assess species changes in status, to inform sectoral and land use policies which is critical to refine their scope of action. The project assesses and reassess more than 10,000 species from 11 taxa, included are vertebrates (mammals, amphibians, reptiles, freshwater fishes), invertebrates (non-marine molluscs, butterflies, saproxylic beetles, dragonflies, and bees), and plants (vascular and medicinal).

In April, we launched the European Red List of Moths project with the objective to produce the RL of Moths at the pan-European and EU27-level, in partnership with Butterfly Conservation UK and Butterfly Conservation NL. With this new project on moths funded by the European Union, experts will work on assessing the regional status of all native species of macro moths present in Europe and a selection of micro moths' species. The project started in April 2021 and is expected to run until March 2024. As an output, several factsheets and publications will inform practitioners, policymakers, and the public on the status of a selection of moths assessed following the IUCN's Red List methodology.

The United Arab Emirates national Red List project was completed. Working with the UAE Ministry of Climate Change and the Environment, this project resulted in the production of a series of national UAE Red Lists, policy briefs and an overall synthesis report (the 13 reports are available **here** for download).

Work on the National Red List of Endemics for the Republic of Korea (ROK) continued throughout 2021. This work is supported by the Ministry of Environment of the Republic of Korea through the IUCN and Republic of Korea Global Red List Partnership. However, the ongoing pandemic in the Republic of Korea and changes in personnel at the National Institute of Biological Resources (NIBR) meant that progress was slower than planned.

Key Biodiversity Area Assessments

The IUCN Global Species and Key Biodiversity Areas Programme continued to support a Programme Officer – Key Biodiversity Areas position in 2021, through a combination of project and framework funding. Their work included managing and delivering several KBA assessment projects as well as fundraising for KBAs

and making substantial contributions to the KBA Programme, in particular through involvement in the KBA Technical Working Group, Database Advisory Group and the KBA Committee. Programme staff also contributed to the development of the online KBA training course on the Conservation Training platform, developed by Re:Wild with funding from the ASEAN Centre for Biodiversity, Critical Ecosystem Partnership Fund, and Re:Wild. Through a continued CEPF-funded project, the Programme provided KBA training to 151 stakeholders in six countries throughout West Africa. These beneficiaries are distributed as follows by country: Cameroon (24), Nigeria (13), Ghana (38), Cote d'Ivoire (30), Liberia (20) and Sierra Leone (25). This work lay the foundations for a subsequent project funded by CEPF and led by RSPB, working towards establishing KBA National Coordination Groups (NCGs) in Guinea, Sierra Leone, Liberia and Ghana. A further project funded by CEPF and implemented by IUCN member FODER built on the momentum to work towards establishment of an NCG in Cameroon, with support from IUCN-PACO to establish a partnership with the Government of Cameroon. As part of the same IUCN project, a report was published in the IUCN Library: **Starnes & Darwall (2021)**, *Identification and validation of Western African freshwater Key Biodiversity Areas*. A new project was established with IUCN-ROWA and the Ministry of Climate Change and Environment (MoCCaE), to identify KBAs in the United Arab Emirates. Through this project, KBA training was provided to around 30 people from the UAE, including the Ministry SSC members, in October.

Invasive Species Assessments

Following on from the adoption of the IUCN **Environmental Impact Classification of Alien Taxa** (**EICAT**) in 2020, an EICAT Unit has been established which includes both IUCN SSC Invasive Species Specialist Group (ISSG) and GSP experts that will coordinate the EICAT assessment process at a global level. Through this group, a number of EICAT assessment processes have been coordinated with the aim of the results being published in 2022. All global EICAT assessments will be made available through the **IUCN Global Invasive Species Database** (**GISD**), which is undergoing structural changes to allow the display of EICAT assessments, and also allow users to search using EICAT Categories.

The IUCN GSP (Cambridge and Brussels), collaborated with the ISSG to continue their support on invasive alien species policy development and implementation in Europe through a series of contracts with the European Commission. One of these contracts provides **technical and scientific support in the implementation of the EU invasive alien species Regulation** (No. 1143/2014), directly linking IUCN SSC science and expertise to policy implementation. The second contract, led by IUCN alongside SSC ISSG and five other consortium members, is working with stakeholders to identify and assess measures for the **humane management of invasive alien species**, by looking at lethal and non-lethal measures that can be used to control the 22 vertebrate species that are included on the **list of invasive alien species of Union concern**. A key outcome of this project will be a manual on the management of these species highlighting the need to consider animal welfare. It will contain information on the feasibility, effectiveness and welfare impact of the different management measures that can be used to contain, control or eradicate these species, in order to strengthen the application of the EU IAS Regulation. During 2021 a series of eight regional workshops were undertaken in order to fill information gaps and build stakeholder engagement and dissemination plans. A final project conference and the dissemination of all the material will be undertaken in 2022.

Policy and Planning for Species Conservation

Policy and planning in the European office

In collaboration with the IUCN SSC, we engage in a number of different policy arenas through our global and regional teams. Continued collaboration with the IUCN SSC Invasive Species Specialist Group on invasive alien species policy development and implementation in Europe through a series of contracts with the European Commission. One of these contracts provides technical and scientific support in the implementation of the EU invasive alien species Regulation (No. 1143/2014), directly linking IUCN SSC science and expertise to policy implementation. Another project, which began in October 2019, is working with stakeholders to identify and assess measures for the humane management of invasive alien species by looking at lethal and non-lethal measures that can be used to control the 22 vertebrate species that are included on the list of invasive alien species of Union concern.

In a consortium of five partners, GSP Brussels co-led the implementation of the EU Pollinators Initiative, which ran until December 2020. Following up on the successful work, a new project started in April 2021 in collaboration with experts from the IUCN Species Survival Commission, in particular, the Invertebrate Conservation Committee, the Hoverfly Specialist Group, and Buglife, with the objective of producing Species Action Plans for the conservation of three threatened pollinator species in the EU. The work taps into an important IUCN knowledge product – it will follow the Guidelines for Species Conservation Planning (IUCN SSC 2017), developed by the IUCN SSC Conservation Planning Specialist Group (CPSG). Experts have so far developed a shortlist of 15 candidate pollinator species for which action plans are needed in Europe. These options were proposed based on a set of criteria ranging from ecosystem fragility, biodiversity richness, species distribution in the Member States, and potential for citizen science. During an online workshop, the shortlist was discussed with a wider group of experts in June 2021. As an outcome of this workshop, experts proposed three (multi-) species action plans to focus on as a priority. After agreeing with DG Environment, the multi-species action plans for the Canary Islands and Teasel bees and Veteran Trees Specialist action plan were selected to be prepared in the coming months.

Another project boosted the European pollinators' conservation portfolio in September 2021 a new Horizon 2020 project on Pollinators (SAFEGUARD) with 22 partners from 14 countries across Europe and three institutions in China, underscoring the global interest in tackling the pollinators' decline. The GSP team in Brussels is the main IUCN contact point of the project, with the policy team, the



The African Forest Elephant (*Loxodonta cyclotis*) recently split from the African Savanna Elephant (*L. africana*) entered the Red List as Critically Endangered due to a population reduction of >80% in the past 93 years due to illegal poaching for ivory and rapid land use change for agriculture and infrastructure development
Photo: Frank af Petersens, Save the Elephants

Nature Based Solutions and the IUCN office in Malaga also involved. SAFEGUARD aims to substantially contribute to reversing the loss of wild pollinators across Europe through increasing our understanding of the direct and indirect drivers of pollinator declines, environmental, economic and societal impacts and delivering an integrated assessment framework as a basis for a portfolio of effective policy and practice solutions. The Safeguard consortium brings together a world-class interdisciplinary team with a proven track record of leading work on tackling pollinator declines with management and policy responses, using a multi-actor approach, we will build on and add value to these and other European projects and initiatives to inspire the development of management and policy guidelines for the public and private sectors to safeguard wild pollinators and the benefits they provide. By the end of the project in 2025, Safeguard will provide a variety of cutting-edge tools and indicators to inform environmental policy at a national, European and global level.

The health of European pollinators on species and population level and other insects essential in our ecosystems strongly relies on our ability to rapidly turn the growing awareness about these worrying trends into swift, decisive actions. These decisions are crucial to mitigate the negative impacts of these alarming trends in human activities, mainly industrial agriculture. Taxonomists - the people who can identify, discover and monitor insect species - have a decisive role to play. To a significant concern, the numbers of trained insect taxonomists also seem to be fast declining. There is the real danger of losing numerous species before we get the chance to even learn about their existence! To address this threat in 2021, the IUCN, the Consortium of European Taxonomic Facilities (CETAF) and Pensoft launched an EC-funded project aiming to compile the first inventory of taxonomic expertise for any group of organisms, understandably choosing the class of insects. Bringing together scientists, research institutions and learned societies from across Europe, the project will compare the trends and extract recommendations to overcome the risks while preserving and further evolving the expert capacity of this scientific community.

The Post-2020 Global Biodiversity Framework (GBF)

In 2021, GSP continued to engage in the CBD meetings to influence for species conservation policy and new ambitious post-2020 species related goal and targets. Due to COVID-19 pandemic, all the meetings were held online. GSP coordinated with the IUCN SSC Network (Post-2020 Biodiversity Task Force, the Conservation Planning Specialist Group, the Human and Wildlife Conflict and Co-existence Specialist Group) to develop inputs into the IUCN positions and interventions at the 24th Meeting of the Subsidiary Body on Scientific, Technical and Technological Advice (**SBSTTA-24**), 3 May – 9 June 2021, the third meeting of the Subsidiary Body on Implementation (**SBI-3**) on 28 and 29 May 2021 and the third meeting of the Open-ended Working Group on the Post-2020 Global Biodiversity Framework (**OEWG-3**) 23 August-3 September 2021. Online meetings limited the opportunities for IUCN to make interventions, meet face to face with CBD Parties to discuss policy matters and there were no side events possible.

The Global Species Action Plan (GSAP)

Throughout 2021, GSP continued to lead the development of the GSAP with the GSAP team in three online meetings to further develop the document. GSP met several times with the secretariats of the eight biodiversity-related conventions for discussion and consultation on the GSAP. GSP also had a meeting with the Biodiversity Liaison Group (Liaison Group of Biodiversity-related Conventions) to present the GSAP for inputs and discussions as well as galvanise collaboration for species conservation policy under the post-2020 Global Biodiversity Framework. Due to COVID-19, all meetings were virtual.

GSAP was selected as one of the four priorities of the IUCN Strategic Initiative on post-2020 GBF promoted by the IUCN Director General. The GSAP was presented to IUCN Members through an online IUCN Member meeting in July 2021.

GSAP was presented at an IUCN Congress Forum hybrid event and was also presented at pavilions in September 2021 in Marseilles. GSAP draft document was further aligned to the updated first draft of the GBF. There is general support for the development of the GSAP to support the implementation of the post-2020 GBF.

GSAP was referenced at CBD Third meeting of the Subsidiary Body on Implementation (**SBI-3**) on 28 and 29 May 2021, Co-Chairs was asked to note and recognise the GSAP in the Post 2020 Global Biodiversity framework. GSP submitted the **GSAP INF document** to the third meeting of the Open-ended Working Group on the Post-2020 Global Biodiversity Framework.

Engagement with the Convention on the Conservation of Migratory Species of Wild Animals (CMS)

In 2021, GSP continued to support IUCN Secretariat and SSC Network engaging with CMS through the CMS Secretariat with discussions on conservation action for CMS listed species such as the Addax and collaboration on the African Carnivore Initiative. GSP also explored options for collaborations on joint projects and work programmes with the CMS Secretariat.

GSP attended as an observer in the virtual **5th CMS Scientific Council Meeting** in June 2021, IUCN SSC members (Antelope SG, Cat SG, Marine Turtle SG, Shark SG) participated in their organisation's capacity but also engaged as SSC when needed to provide technical advice on listed species and concerted action. GSP also attended the virtual 52nd **Standing Committee Meeting** in September 2021.

GSP continued to consult with CMS Secretariat on the development of the GSAP throughout 2021. CMS Executive Secretary was speaking on the panel at the GSAP event at the IUCN Congress in Marseilles.

Engagement with the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)

Throughout 2021, GSP and the IUCN SSC Specialist Groups continued their coordinated work integrating SSC expert knowledge and expertise into a global response on issues relating to the sustainable use of species and illegal trade in wildlife. International wildlife trade remains a prominent global topic due to the COVID-19 pandemic. GSP and the extensive SSC network continued to support global Multilateral Environmental Agreements (MEA), including CITES, with their legal and policy mechanisms and implementation. In 2021, GSP and SSC experts attended the online CITES 73rd meeting of the Standing Committee in May, as well as the 31st meeting of the Animals Committee, and the 25th meeting of the Plants Committee held online through the month of June. Throughout 2021, GSP continued to implement CITES decisions taken at the 18th Conference of the Parties, with funding for this work primarily provided by the CITES Secretariat. Work has focussed on African rhinos, marine ornamental fishes, pangolins and livelihoods tied to the international wildlife trade. SSC expert involvement and advice on recommended MEA actions and activities continued to ensure the implementation for these groups of species and thematic areas was effective.

The GSP, SSC and collaborative partners continue to adjust to the dynamic global situation, through adaptive measures such as in the case of the Pangolin project developing conversion parameters for all pangolin species where planned field work was switched to virtual meetings enabling the team to collect the necessary information and data for the report. Since the last SSC Steering Committee, the



Critically Endangered Rough Moss Frog (*Arthroleptella rugosa*)
Photo: Bionerds Pty Ltd

GSP, SSC and CITES Secretariat collectively worked to implement decisions made at CITES CoP18, specifically focussing on amphibians, marine ornamental fish, pangolins, capacity building in West Africa, African Elephants and African and Asian Rhinoceroses. Furthermore, significant support for the implementation of CITES is also being directly provided by specialist groups, including the Seahorse, Pipefish and Seadragon Specialist Group. In recognition of the integral importance of IUCN in the implementation of CITES, IUCN renewed its MOU with CITES. GSP and UNEP-WCMC also continue their active collaboration, including a work on a rapid assessment for CMS Appendix I species following the outcome of last year's rapid assessment for CITES Appendix I species. Further collaboration was carried out on a rapid study on the conservation status of Appendix I species. IUCN is reviewing its partnership agreement with TRAFFIC and WWF, to carry on essential collaborative work supporting the conservation and sustainable use of species.

Species Conservation Action

The IUCN Global Species Programme works to improve the long-term survival prospects of threatened species in line with IUCN's mission of a just world that values and conserves nature. Key to this is the process of translating species knowledge, policy, and planning into results-oriented conservation action. To facilitate this, IUCN has developed competency in coordinated grant making and grant management through its funding mechanisms, IUCN Save Our Species and the Integrated Tiger Habitat Conservation Programme.

Both fund frontline conservation organisations who have unique knowledge of their region and the local biodiversity. Together these programmes support a three-legged approach to conservation, focusing on Species, Habitats and People. Under various initiatives, these projects monitor threatened species populations, build capacity for better habitat management, and work with local communities to reduce their unsustainable dependency on natural resources. In 2021, IUCN Save Our Species' active projects operated in 101 countries and protected 99 threatened species.

IUCN Save Our Species

IUCN Save Our Species funded 25 conservation projects in 2021. The species portfolio grew to now include species such as the North Atlantic Right Whale and the Rough Moss Frog, in addition to the existing wide range of carnivores and various species of Lemurs and Gibbons under various initiatives.

SOS African Wildlife, co-funded by the European Union, launched a Call for Proposals for Threatened Species Grants. This call targeted lions, leopards, cheetahs, African wild dogs and Ethiopian wolves, as well as threatened species of bovids, equids, giraffids and small carnivores in continental sub-Saharan Africa. Eleven projects were selected thanks to over EUR 1,979,026 in funding.

Combined with our ongoing projects, these various conservation initiatives have had a positive impact on wildlife. One project in Zambia achieved incredible results in trying to protect the wildlife of Luangwa Valley: 48,155 km were covered on foot patrols, 1'307 person-days were spent monitoring carnivore groups, 309 anti-snaring patrols were conducted, 87 illegal firearms were confiscated and 157 suspects were apprehended with an 80% conviction rate.

In 2021, IUCN Save Our Species also launched its newest initiative: the Fondation Segré Conservation Action Fund. Funded by Fondation Segré, this EUR 3 million, five-year initiative will run until 2026 and focus on threatened species and their habitats across Asia, the Pacific, Latin America and the Caribbean, Africa, and the Middle East. The fund will also support young and early researchers as well as

conservation projects for all animal species through two different types of grants: Conservation Action Grants and Research Support Grants. A Call for Proposals was opened in July, and the 20 selected projects will start in 2022.

Furthermore, IUCN Save Our Species' partnership with Lacoste entered its final year. As part of this collaboration, a project to conserve the Critically Endangered North Atlantic Right Whale was funded after an open Call for Proposals in 2019.

Outside of grant-making, 2021 was also a noteworthy year for IUCN Save Our Species. An entirely new visual identity was launched in April 2021, which was also accompanied with a new website. This update placed the urgency with which we need to protect species at the forefront of our visuals, by explaining how essential species are to their ecosystems through a playful domino concept. The revamped website also improved on the previous one by offering a modern user experience, presenting species and ecosystem stories in an interactive way, and highlighting the work done in more detail.

IUCN Save Our Species also had a presence at the IUCN World Conservation Congress in Marseille. The programme had the chance to present projects and bring conservation expertise via two sessions: the "Conservation action to benefit Species, Habitats and People" presentation at IUCN Congress and the "Getting more bang for your buck" virtual session.

Elsewhere, efforts were made to diversify the content offered by IUCN Save Our Species in the form of a webinar. The event, for which 860 people registered, was titled "What makes community livelihoods work?" and gave participants a platform to share knowledge. They were also able to hear unique experiences from individuals at the forefront of wildlife conservation. This is the latest effort from IUCN Save Our Species to not only be a grant-making platform, but also a capacity building one. Given the success of the event and the positive audience response, more webinars are planned for the future.



Endangered Tiger (*Panthera tigris*)
Photo: Jimena Montane

Integrated Tiger Habitat Conservation

In 2014, IUCN launched the Integrated Tiger Habitat Conservation Programme (ITHCP) to contribute to the Global Tiger Recovery Programme (GTRP) – the landmark global agreement that aims to double wild tiger populations by 2022. Funded by the German Cooperation (BMZ), through the German Development Bank (KfW), the Tiger Programme aims to foster a collaborative approach between stakeholders from local communities, grassroots organisations, NGOs and governmental organisations. It is now one of the largest funds for tiger conservation globally and one of the major contributors to the GTRP.

Some projects in the first phase of the Tiger Programme, which was initiated in 2014 and consisted of 12 landscape projects, the largest of which is EUR 2.6 million, ended in December 2021. The results achieved during this period were published in the **2015-2021 Tiger Programme report**, just in time for International Tiger Day. It was found the period of Phase I, there has been an average increase of the tiger population within project sites by 40%, with the entire portfolio-wide population growing from 770 individuals to 966 between 2015 and 2021. During this period, the Programme also directly affected 81,778 beneficiaries, 84% of which were women.

Furthermore, as part of the ITHCP's third phase, five conservation projects in Nepal, Bangladesh and India were funded in 2021. Thanks to this additional EUR 5 million contribution, tiger conservation efforts will be pursued by IUCN and our grantees until at least the end of 2024, making ITHCP a ten-year programme. In addition, tranche one of the ITHCP's phase four was signed in 2021, bringing in an additional EUR 2.5 million to tiger conservation.



The Dawn Jewel (*Chlorocypha aurora*) from southern Cameroon is listed as Critically Endangered due to loss of habitat because of expanding agriculture. The assessment of the world's dragonflies and damselflies shows that 165 of the 6,016 species are at risk of extinction
Photo: Jens Kipping

Communications

Species in the news

There continued to be significant media interest in IUCN's species work in 2021, with particular demand for the data and news provided by the IUCN Red List. In addition to answering frequent media queries, IUCN issued six species-related media releases in 2021.

Altogether, the three Red List update media releases (first described in the Red List section of this report) generated over 4,000 media articles. The Red List update releases received media interest around the world, with coverage of the March and September updates spanning over 95 countries and the December update reported in over 60 countries. Many major news agencies and leading international media outlets reported on the Red List in 2021. Media agencies that reported on the Red List updates included **Associated Press**, **Agence France Presse**, **Reuters** and **Xinhua News Agency**. Coverage by IUCN's target media included articles in the New York Times (on the **African elephants** and **Komodo dragon**), BBC (on the **African elephants**, **tunas and sharks** and **dragonflies and damselflies**), **Financial Times**, **CNN**, **National Geographic**, **Nikkei**, Le Monde (on the **African elephants** and the **September update broadly**), **Le Point**, **El Pais** and Der Spiegel (on the **world's sharks and rays** and **dragonflies and damselflies**). Broadcast media coverage included TV coverage by the BBC, **Al Jazeera**, **ARD**, **DW**, **RTS**, **France24** and **France Info**, among others.

IUCN also issued media releases to announce the launches of the **Species Threat Abatement and Recovery (STAR) metric** and the **IUCN Green Status of Species**, as well as the **publication of a co-authored study on crop wild relatives in Plants, People, Planet**. The STAR metric received coverage in outlets including **ABC News** and the Green Status was reported in **The Washington Post**. The Guardian published articles on both the **IUCN Green Status** and the **crop wild relatives study**. A commentary piece by STAR paper authors appeared in **The Conversation**.

Reaching the public through social media

The IUCN Red List Twitter and Facebook channels reached over 270,000 followers across both platforms across 2021. The March and September updates were among the best performing Red List updates across the IUCN Red List and IUCN channels since records began in 2017, with the breaking news posts and a video produced in-house for the March update generating especially strong levels of engagement.

IUCN websites: a source of species expertise

IUCN websites continued to provide species conservation news and resources in 2021. While the IUCN Red List website underwent developments described in the IUCN Red List section of this report, the IUCN website also grew to include new pages on topics such as the Global Species Action Plan. Preparations also began for the new IUCN website ahead of its launch in 2022.

Updating the IUCN species network

The Species e-bulletin was published twice in 2021, sharing updates from the Global Species Programme, Species Survival Commission, and partners.

Acknowledgements

We would like to thank our many generous partners and donors, including Toyota Motor Corporation, the European Commission, Ministry of Environment of the Republic of Korea, The German Cooperation via KfW Development Bank, Environment Agency Abu Dhabi, Re:wild, National Geographic Society, Lacoste, Coq en Pâte, the JRS Biodiversity Foundation, Synchronicity Earth, CEPF, Cambridge Conservation Initiative, private foundations and other companies who continue to fund our species conservation work.

▶

Umbilicate foliose lichen
Umbilicaria phaea var *coccinea*,
growing on rock
Photo: Jessica Allen



Reports of IUCN SSC Groups

This section contains the individual reports of all SSC Groups that submitted their information through *SSC DATA*. The reports have been ordered by major SSC Groups, each marked with a specific coloured band: Animalia (dark blue), Fungi (brown), Plantae (green), Disciplinary (grey), Action Partnerships (purple), Task Forces (orange) Stand-alone Red List Authorities (red) and Committees (yellow). Within Animalia, the reports have been ordered alphabetically by major zoological groups and within them, also alphabetically, by zoological groups.

Following, is a succinct explanation of the structure of the individual reports and what information is found in each part of it.

Title of the SSC Group

Photograph(s) of the Chair / Co-Chairs

Group information

Includes names of Chair / Co-Chairs, Vice-Chairs, Deputy Chairs and Red List Authority Coordinator(s), their institutional affiliations, number of members and social networks (currently active).

Logo of the SSC Group

Mission statement

Includes the mission of the group.

Projected impact 2021-2025

This narration indicates how the planned activities, as a whole, will impact on the conservation status of species during the 2021-2025 quadrennium.

Targets 2021-2025

Includes the targets planned by the SSC Group for the 2021-2025 quadrennium ordered alphabetically by component of the Species Conservation Cycle. Each target is labeled with a numerical code (e.g. T-001, T-012) that identifies it in the SSC DATA database.

Activities and results 2021

Includes the activities conducted and results obtained during the reported year, ordered alphabetically first by component of the Species Conservation Cycle (see page 37 for description of each component), and second by Activity Category. Description of activities and results includes the indicator that best describes progress, its associated quantitative or qualitative result, and the narrative description of the activity conducted or result obtained. Each activity or result reported is linked to the Key Species Result (KSR) to which it is associated (e.g. KSR#1, KSR#5; see page 37 for complete description of KSRs).

Acknowledgements

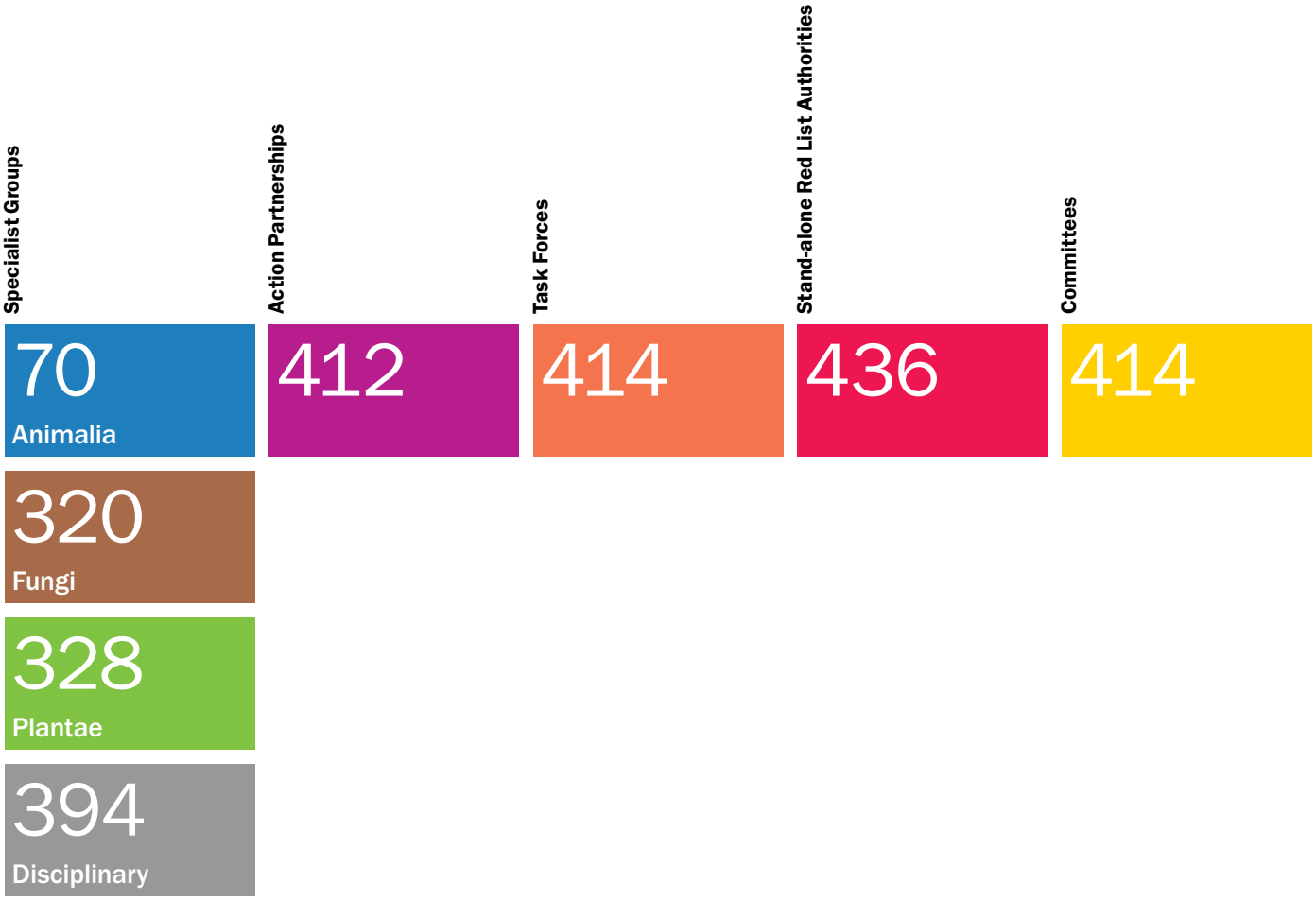
Includes the akcnowledgements to funding agencies, partners, and persons who contributed to the progress of the targets of the group.

Summary of achievements

Summarises information of the group's strategic plan for the quadrennium and progress achieved implementing targets for all the components of the Species Conservation Cycle during the reported year.

Recommended citation for a section of the report:

[Authors' names; e.g. Plumb, G, Ranglack, DH, and Perzanowski, K]. 2023. 2021 Report of the [Groups' name and pages; e.g. Bison Specialist Group. Pp. 242-245]. In: Nassar, JM, Salamanca, O, Andrade, ND, Bezeng, S, Bohm, M, Canteiro, C, Geschke, J, Henriques, S, Ivande, S, Nguyen, D, Pollom, R, Ramos, M, Rodríguez, A, Rodríguez, JP, Street, B, Yang, A, and Yerena, E (Eds.). *2021 Report of the Species Survival Commission and the Global Species and Key Biodiversity Area Programme*. International Union for Conservation of Nature. 482 pp.


Specialist Groups
70
Animalia
320
Fungi
328
Plantae
394
Disciplinary
Action Partnerships
412
Task Forces
414
Stand-alone Red List Authorities
436
Committees
414

IUCN SSC Amphibian Specialist Group



SOCIAL MEDIA AND WEBSITE
Facebook: @IUCNAmphibians
Twitter: @ASG_IUCN
Website: www.iucn-amphibians.org

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NUMBER OF MEMBERS
431

Mission statement

The Amphibian Specialist Group (ASG) provides the scientific foundation to inform effective amphibian conservation action around the world. More specifically, the ASG stimulates, develops and conducts scientific research to inform the conservation of amphibians and their habitats around the world, supports the assessment of the conservation status of amphibian biodiversity and informs the general public of amphibian conservation-related issues and priorities. This is attained by supporting and mobilising a global network of members to develop capacity and improve coordination and integration so as to achieve shared, strategic amphibian conservation goals.

Projected impact 2021–2025

Increased awareness of the amphibian decline and extinction crisis, increased support of amphibian conservation through updated Red List assessments, and evidence-based decision making, targeted and coordinated action through an updated Amphibian Conservation Action Plan (ACAP).

Targets 2021–2025

ASSESS

T-005 The Amphibian Red List Authority (ARLA) provides advice and expertise for national Red List processes.

T-006 Complete the Global Amphibian Assessment update (GAA2).

PLAN

T-001 Update the Amphibian Conservation Action Plan (ACAP).

T-013 ASG develops a strategic plan for the new IUCN quadrennium.

T-018 ASG Secretariat, Regional Chairs and members contribute towards single- or multi-species conservation action plans at the international or national levels.

T-019 ASG provides scientific advice and information for the identification and conservation of species of concern in national and international contexts.

ACT

T-002 Increase uptake of ACAP among stakeholders.

T-003 ASG provides technical advice to organisations and institutions globally.

T-017 ASG acts as a key ally of Amphibian Ark and the Amphibian Survival Alliance with the shared vision of “Amphibians thriving in nature”.

NETWORK

T-004 ASG leadership and membership are renewed.

T-014 Ensure a number of ARLA staff members are supported by donors.

T-015 ASG proactively recruits new members, focusing on regions with little or no representation at the start of the quadrennium.

T-016 Create/increase financial partnerships that support ASG staff.

COMMUNICATE

T-007 ASG actively contributes to the production of scientific publications related to amphibian research and conservation.

T-008 ASG reports activities to SSC Data.

T-009 Ensure the IUCN Red List is used to inform the project and funding priorities of NGOs and funding mechanisms.

T-010 ASG develops a communications plan laying out the intended use of each of its communications tools.

T-011 Together with the Amphibian Survival Alliance (ASA), ASG continues to produce *FrogLog*.

T-012 ASG participates in scientific or public events.



Hyalinobatrachium bergeri
Photo: Ariadne Angulo

T-020 Create and populate a Research Gate project page to collate and improve visibility of all ASG-related publications.

T-021 Maintain the Halliday-Bishop Amphibian Conservation Reference List.

Activities and results 2021

ASSESS

Red List

T-006 (KSR 6)

Number of global Red List reassessments completed: 8,130

Result description: in 2021, the Amphibian RLA submitted 747 first time assessments and 1,986 reassessments to the Red List Unit for publication. This increased the completion of the second Global Amphibian Assessment (GAA2) from 68% in December 2020 with 5,532 assessments completed to 99% complete. A total of 8,130 assessments are expected to be published on the IUCN Red List in the July 2022 update.

PLAN

Planning

T-001 (KSR 8)

Number of conservation plans/strategies developed: 0

Result description: by December 2021 we had final drafts submitted for all 12 ACAP themes and are wrapping up the introductory chapters. Once these are ready, all chapters will be assembled into a single draft document that will be made available to the broader community for a public consultation process prior to being sent for peer review.

T-018 (KSR 8)

Number of conservation plans/strategies developed: 1

Result description: ASG supported the launch of the Harlequin Toad (*Atelopus*) Conservation Action Plan (available at https://www.iucn-amphibians.org/wp-content/uploads/2021/08/HarleCAP-2021-English.pdf).

Policy

T-019 (KSR 9)

Number of instances where advice and information are sought and given: 1

Result description: ASG provided input into the development of the Amphibian Translocation Guidelines (available at https://www.iucn-amphibians.org/wp-content/uploads/2021/05/Ampb-Guidelines_170521_Final.pdf).

ACT

Synergy

T-017 (KSR 10)

Number of collaborative activities: 2

Result description: This year, ASG collaborated with the Amphibian Survival Alliance (ASA) and Amphibian Ark in the following: (1) participating in the ASA Strategic Planning Committee's process (with ASA and Amphibian Ark); (2) reconstituting the *FrogLog* editorial board and planning changes in the publication starting 2022 (with ASA).

NETWORK

Membership

T-004 (KSR 2)

Number of SSC members maintained: 198

Result description: At the time of writing (December 2021), ASG membership renewal is underway. As of 16 December 2021, 198 of the 355 ASG members enrolled in the IUCN Commission System have renewed their membership. Of the 431 members enrolled via the ASG application form, 37 have renewed this process. Of the 43 regional groups in which the ASG has been historically organised, we have 36 confirmed leaders (many of which co-chair a region). Three, potentially four, regions will likely require a succession.

Synergy

T-014 (KSR 1)

Number of 'funding' partners established and maintained: 3

Result description: The ARLA was fortunate to retain all its donors in 2021.

T-016 (KSR 1)

Number of 'funding' partners established and maintained: 0

Result description: No new partnerships have been established in 2021. We have been working hard to complete the Amphibian Conservation Action Plan (ACAP) as a product with which we can approach donors and ask for support. The SSC Chair's Office is currently facilitating discussions with the German Society for Herpetology and Herpetoculture (Deutsche Gesellschaft für Herpetologie und Terrarienkunde, DGHT) to explore a potential partnership with them.

COMMUNICATE

Communication

T-007 (KSR 12)

Number of publications that acknowledge SSC affiliation: 4

Result description: This year we produced the following scientific publications: (1) Borzée, A., et al. (2021). 'Update on



Nymphargus ocellatus
Photo: Ariadne Angulo



Rhinella yanachaga
Photo: Ariadne Angulo

Distribution and Conservation Status of Amphibians in the Democratic People's Republic of Korea: Conclusions Based on Field Surveys, Environmental Modelling, Molecular Analyses and Call Properties'. *Animals* 11(7):2057.https://doi.org/10.3390/ani11072057; (2) Button, S. and Borzée, A. (2021). 'An integrative synthesis to global amphibian conservation priorities'. *Global Change Biology* 27(19): 4516–4529. https://doi.org/10.1111/gcb.15734; (3) Wiedenfeld, D.A., et al. (2021). 'Conservation resource allocation, small population resiliency, and the fallacy of conservation triage'. *Conservation Biology* 35(5):1388–1395. https://doi.org/10.1111/cobi.13696; (4) Borzée, A., et al. (2021). 'Using the 2020 global pandemic as a springboard to highlight the need for amphibian conservation in eastern Asia'. *Biological Conservation* 255:108973. https://10.1016/j.biocon.2021.108973.

T-008 (KSR 12)

Report to SSC DATA: 1

Result description: The current report accounts for activities undertaken for the year 2021.

T-009 (KSR 12)

Number of organisations ASG interacts with to promote use of the IUCN Red List: 3

Result description: The Amphibian RLA provided staff time to support at least three NGOs in sourcing and interpreting IUCN Red List data to inform their priorities and actions during 2021: Re:wild, Synchronicity Earth and Wildlife Trust India.

T-011 (KSR 12)

Number of Species e-bulletin, Save Our Species newsletter, SSC Groups' newsletter editions produced: 2

Result description: this year the ASG, together with ASA, produced two issues of *FrogLog* (issues 122 and 123), the amphibian conservation community's publication. Due to ongoing capacity issues there has been a paucity in the production of *FrogLog* (two issues instead of four in 2021). Because of this situation, we have reconstituted the *FrogLog* Editorial Board and are revisiting how to maintain *FrogLog* in the context of the ASG membership renewal.

T-012 (KSR 12)

Number of presentations delivered in scientific events: 4

Result description: in 2021, the regional branch of ASG, ASG Brazil, organised and carried out its III ANFoCO (Amphibians in Focus) event between 30 November 2021 and 2 December 2021. This year the event was completely virtual, with 32 presentations covering a diversity of topics. Four of these presentations were given by members of the ASG Brazil Secretariat and a keynote presentation was given by former Co-Chair Débora Silvano. Details of the event can be found at https://www.canva.com/design/DAEs0eeaszw/tanBZHRDcziIg97eLMFAGw/view?utm_content=DAEs0eeaszw&utm_campaign=designshare&utm_medium=link&utm_source=sharebutton#2.

T-020 (KSR 12)

Number of publications uploaded to project page: 17

Result description: since the IUCN SSC Amphibian Specialist Group project was created, a total of 17 references have been added, inclusive of four new publications in 2021.

T-021 (KSR 12)

Regular update of the reference list (# of references): 4

Result description: This year we identified the possibility of developing a bibliography project that would allow us to transition the Halliday-Bishop Amphibian Conservation Reference List into a bibliographic reference database in Zotero. Prospective ASG member Nikhil Modak has begun to work on the project, which is shared with both AmphibiaWeb and the Amphibian Survival Alliance (ASA).

Acknowledgements

We would like to thank Re:wild, the Amphibian Survival Alliance, Detroit Zoological Society and Nanjing Forestry University for in kind and/or financial support provided to the Amphibian Specialist Group.

Summary of achievements

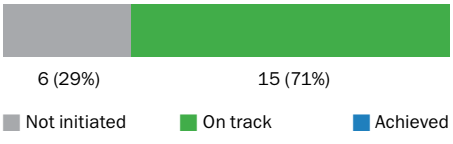
Total number of targets 2021–2025: 21

Geographic regions: 21 Global

Actions during 2021:

Assess: 1 (KSR 6)
Plan: 3 (KSR 8, 9)
Act: 1 (KSR 10)
Network: 3 (KSR 1, 2)
Communicate: 7 (KSR 12)

Overall achievement 2021–2025:



2021 Report

IUCN SSC Chameleon Specialist Group



CHAIR
Christopher V. Anderson
University of South Dakota, Department of Biology, Vermillion, South Dakota, US

RED LIST AUTHORITY COORDINATOR
Krystal Tolley
South African National Biodiversity Institute (SANBI), Applied Biodiversity Research Division, Cape Town, South Africa

NUMBER OF MEMBERS
24

SOCIAL MEDIA AND WEBSITE
Facebook: IUCN SSC Chameleon Specialist Group
Twitter: @IUCNchameleons

Mission statement

The mission of the Chameleon Specialist Group is to improve the conservation status and sustainable use of wild chameleons.

Projected impact 2021–2025

Provide an evidence-based approach and scientific knowledge directed at the implementation of conservation actions and public policies that lead to the reduction of the extinction risk for members of this enigmatic lizard family.

Targets 2021–2025

ASSESS

T-001 Asses newly described chameleon species for the IUCN Red List within two years of description, with publication of assessments within three years of description.

T-002 Undertake the reassessment of species with IUCN Red List assessments that are a minimum of 10 years old.

T-007 Publish results of fieldwork undertaken by the group in response to assessment findings.

PLAN

T-003 Support implementation of CITES.

NETWORK

T-004 Expand membership to improve geographic coverage and representation of taxonomic experts.

T-006 Locate and establish a relationship with a host financial institution.

COMMUNICATE

T-005 Establish and develop a new website for the group.

Activities and results 2021

ASSESS

Red List

T-001 (KSR 6)

Number of new global Red List assessments completed: 0

Result description: We obtained IUCN funding toward a reassessment and preliminary assessment project for chameleons and have assessments for 18 new species in draft that should be completed in 2022.

T-002 (KSR 6)

Number of global Red List reassessments completed: 0

Result description: We obtained IUCN funding toward a reassessment and preliminary assessment project for chameleons and have reassessments for 82 species in draft that should be completed in 2022.

Research activities

T-007 (KSR 5)

Number of scientific publications about species research that acknowledge SSC affiliation: 1

Result description: We published a paper on the status of the Critically Endangered Chapman's Pygmy Chameleon (*Rhampholeon chapmanorum*) in the journal *Oryx*: Tolley, K.A., et al. (2021). 'Clinging to survival: Critically Endangered Chapman's pygmy chameleon *Rhampholeon chapmanorum* persists in shrinking forest patches'. *Oryx* 56:451–456. https://doi.org/10.1017/S0030605320000952.

PLAN

Policy

T-003 (KSR 9)

Number of policies and implementation decisions where SSC members provided technical input: 3

Result description: We worked with national management authorities to provide technical input on trade issues relating to chameleons.



Least Concern Kenyan High-casqued Chameleon, *Trioceros hoehnelii*
Photo: Christopher V. Anderson

NETWORK

Membership

T-004 (KSR 2)

Number of SSC members recruited: 3

Result description: We increased our membership to 24 members, expanding our geographic expertise and strengthening regional coverage with high degrees of endemism.

Acknowledgements

We would like to thank Re:wild for funding our IUCN Red List reassessment efforts in 2021 and 2022 through the SSC Internal Grant programme.

Summary of achievements

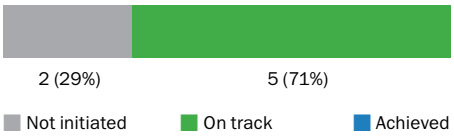
Total number of targets 2021–2025: 7

Geographic regions: 6 Global, 1 Africa

Actions during 2021:

Assess: 3 (KSR 5, 6)
Plan: 1 (KSR 9)
Network: 1 (KSR 2)

Overall achievement 2021–2025:



IUCN SSC Crocodile Specialist Group



CHAIR
Grahame J.W. Webb
Wildlife Management International Pty. Limited, Darwin, Australia

RED LIST AUTHORITY COORDINATOR
Sally Isberg
Centre for Crocodile Research, Noonamah, NT, Australia

NUMBER OF MEMBERS
701

SOCIAL MEDIA AND WEBSITE
Facebook: @iucncsg
Twitter: @CrocSpecGroup
Website: www.iucncsg.org

Mission statement

The Mission of the IUCN SSC Crocodile Specialist Group (CSG) is to assist the International Union for Conservation of Nature (IUCN) and the Species Survival Commission (SSC) to meet their missions with regard to the conservation, management and sustainable use of world crocodilians.

Projected impact 2021–2025

By the end of 2025, we envisage: (1) increased reintroductions and improved status of wild populations of Critically Endangered (CR) crocodilian species such as Chinese Alligator (*Alligator sinensis*; China), Siamese Crocodile (*Crocodylus siamensis*; Cambodia, Thailand, Viet Nam, Lao PDR) and Philippine Crocodile (*C. mindorensis*; Philippines); (2) improved legal protection status of Siamese Crocodile and Tomistoma (*Tomistoma schlegelii*) habitat in Lake Mesangat, East Kalimantan, Indonesia; (3) tracking study implemented on Tomistoma; (4) publications on traceability systems, sustainable use and livelihoods and Conservation Priorities; (5) completion of species Action Plans; and (6) a standard reference source developed for crocodilians.

Targets 2021–2025

ASSESS

T-001 Review and undertake IUCN Red List assessments for crocodilians.

T-009 Update CSG *Best Management Practices for Crocodilian Farming* manual.

T-010 Develop an updated standard reference source for crocodilian taxonomy and phylogenetic relationships.

T-013 Update the CSG 'Crocodilian Capacity Building Manual'.

T-014 Encourage the implementation of a radio- and satellite-tracking study on *Tomistoma* in Indonesia or Malaysia (Sarawak) or both.

T-017 Review and assess the main traceability systems available for reptile products in international trade.

T-022 Fund graduate/postgraduate students who elect to work on crocodilian conservation and management through the CSG Student Research Assistance Scheme (SRAS) and Fritz Huchzermeyer Veterinary Science Student Research Assistance Scheme (FHVS-SRAS) Programmes.

PLAN

T-003 Improve the status of wild Siamese Crocodile populations, by continuing to encourage programmes and countries to engage further and more rapidly in reintroduction programmes (Thailand, Cambodia, Viet Nam, Lao PDR).

T-004 Continue to monitor and track the status of wild Philippine Crocodile and Chinese Alligator populations and encourage the reintroduction programmes underway with both species.

T-011 Review and update Crocodilian Species Action Plans.

T-012 Develop 'CSG Conservation Priorities for World Crocodilians'.

T-015 Undertake country/species reviews.

T-020 Review the UN Sustainable Development Goals as they pertain to crocodilian conservation, management and sustainable use, for the benefit of all CSG members.

T-021 Encourage programmes aimed at improving the status of Lake Mesangat and associated areas (Kalimantan, Indonesia) for Siamese Crocodiles and *Tomistoma*.

ACT

T-018 Prepare and disseminate case studies on Livelihoods and Sustainable Use.



Mugger Crocodile (*Crocodylus palustris*)
Photo: Pratik Pandeya



Adult Philippine Crocodile (*Crocodile mindorensis*) with hatchlings at Cologne Zoo, Germany
Photo: Thomas Ziegler

T-019 Assess the impact on crocodilian conservation efforts by various NGOs to curtail all trade in wildlife to meet ideological goals outside the mission of both SSC and IUCN.

NETWORK

T-002 Expand membership of CSG with new members working on crocodilian research, conservation and management.

T-005 Develop a CSG Communication Strategy.

T-007 Continue to develop and promote the CSG Future Leaders Programme.

T-016 Maintain involvement at international forums (e.g. CITES, IUCN, IUCN World Conservation Congress).

Activities and results 2021

ASSESS

Communication

T-009 (KSR 5)

Annual update of CSG Manual: 1

Result description: CSG *Best Management Practices for Crocodilian Farming* is reviewed and updated as new information becomes available.

T-010 (KSR 5)

Development of an updated standard reference source: 0

Result description: Work on a standard reference for crocodilians is ongoing. Face-to-face meetings planned in 2020 and 2021 were not possible due to the COVID-19 pandemic, but virtual meetings have allowed work to progress. A taxonomy workshop is planned for July 2022.

Red List

T-001 (KSR 6)

Number of national Red List reassessments published: 2

Result description: Assessments for Saltwater Crocodile (*C. porosus*) and American Crocodile (*C. acutus*) were finalised.



SRAS student Alberto Contreras
Photo: Sergio Padilla Paz

Saltwater Crocodile (*Crocodylus porosus*) predating Rhesus Macaque
Photo: Bijay Das





Female Cuban Crocodile (*Crocodylus rhombifer*) with satellite transmitter
Photo: Gustavo Sosa

Research activities

T-013 (KSR 5)

Number of publications produced in internal journals of SSC groups: 1

Result description: The CSG 'Crocodilian Capacity Building Manual' is updated as new information becomes available.

T-014 (KSR 5)

Number of publications produced in internal journals of SSC groups: 0

Result description: A postgraduate student (Herdhanu Jayanto, New Mexico Highlands University, New Mexico, US) will undertake a 2-year consultancy through his MSc programme and implement a radio- and satellite-tracking study on Tomistoma (*Tomistoma shlegelii*) in Berback National Park, Sumatra, Indonesia. The CSG provided CSG-Tomistoma Task Force funding for this project.

T-017 (KSR 5)

Number of publications produced in internal journals of SSC groups: 1

Result description: The CSG Executive Committee endorsed and released a report on *Traceability in Crocodylian Conservation and Management*. This is considered to represent a significant contribution to this issue.

T-022 (KSR 5)

Number of publications produced in internal journals of SSC groups: 0

Result description: Twenty (20) applications for SRAS funding were received in 2021, of which 19 were approved and funded; one application was still under review.

PLAN

Planning

T-003 (KSR 8)

Number of conservation plans/strategies updated: 0

Result description: The Cambodian Crocodile Farmers Association (Siem Reap) donated additional 'pure' adult Siamese Crocodiles to Phnom Tamao Zoo (FFI), for captive breeding and production of pure-bred hatchlings for subsequent release into wild habitats.

T-004 (KSR 8)

Number of conservation plans/strategies updated: 0

Result description: The recently reintroduced Philippine Crocodile population at Siargao Island is monitored by the NGO Crocodylus Porosus Philippines Inc. (CPPI) and its collaborators. Nesting has been reported, and radio-tracking of individuals has revealed significant insights on habitat use and movement. Habitat reconstruction continues in Anhui Province for Chinese Alligators, and the programme continues to have a significant research effort.

T-011 (KSR 8)

Number of conservation plans/strategies updated: 6

Result description: This is an ongoing initiative. To date, six Action Plans have been completed, 10 draft plans are under internal review, and eight plans are outstanding.

The latter group includes 'new' species from the West-Central Africa region, for which these will be the first action plans developed.

T-012 (KSR 8)

Number of conservation plans/strategies updated: 0

Result description: A formal listing of conservation priorities is still outstanding, as it depends in part of other targets being achieved.

T-015 (KSR 8)

Number of conservation plans/strategies updated: 0

Result description: The COVID-19 pandemic greatly constrained international travel in 2021, and no specific country/species reviews were planned or undertaken.

T-020 (KSR 9)

Completion of review: 0

Result description: The UN Sustainable Development Goals were reviewed, and the CSG Executive Committee provided with a draft overview as to how they might apply to the various management tools that exist for the conservation of crocodilians.

T-021 (KSR 8)

Number of conservation plans/strategies updated: 0

Result description: The ability to develop programmes in Lake Mesangat has been severely constrained over the last two years due to the COVID-19 pandemic, with key contacts unable to return to Indonesia.

ACT

Conservation actions

T-018 (KSR 10)

Number of technical documents provided to support conservation actions: 0

Result description: Work continues on case studies on Livelihoods and Sustainable Use, and it is hoped that a final document will be available by July 2022.

T-018 (KSR 10)

Number of case studies disseminated: 0

Result description: Work continues on case studies on Livelihoods and Sustainable Use, and it is hoped that a final document will be available by July 2022.

T-019 (KSR 10)

Number of technical documents provided to support conservation actions: 0

Result description: Ongoing. The COVID-19 pandemic has been used by various NGOs to call for a ban on wildlife trade. As indicated by a recent IUCN publication (*Situation Analysis on the Roles and Risks of Wildlife in the Emergence of Human Infectious Diseases*), this is not justified on scientific grounds. More directly, animal rights activists have been very active in some countries (e.g. Australia), actively spreading disinformation about crocodile farming, and even using illegal means in an attempt to generate misinformation for their purpose.

NETWORK

Capacity building

T-007 (KSR 2)

Number of people trained in management skills: 0

Result description: The CSG's Future Leaders Program is currently chaired by Dr Pablo Siroski. The pandemic has restricted the ability of the group to meet in person. Virtual participation at the IUCN Congress (September 2021) was possible, and the CSG Working Meeting in July 2022 (postponed since May 2020) will provide an opportunity for workshops and future planning (e.g. 19th Meeting of the Conference of the Parties to CITES in Panama).

Membership

T-002 (KSR 2)

Number of SSC members recruited: 16

Result description: CSG membership at end of 2021 was 701 members, with 16 new members having been added through the year, three members deceased, and two members resigned.

T-005 (KSR 2)

Number of SSC members recruited: 0

Result description: A draft Communication Strategy is currently under review by the CSG Executive Committee.

Synergy

T-016 (KSR 3)

Number of international forums attended: 2

Result description: The COVID-19 pandemic has impacted on the scheduling of international events, and severely restricted international travel. CSG members were able to be involved on a virtual basis with the IUCN World Conservation Congress (September 2021), and the 31st meeting of the CITES Animals Committee (May–June 2021).

Acknowledgements

CSG wishes to acknowledge its CSG members, who individually and collectively make an enormous contribution to crocodilian conservation, management and sustainable use, in line with the IUCN and SSC mission statements. CSG also wishes to thank the individuals and organisations that donate towards the operations of the CSG through the International Association of Crocodile Specialists Incorporated.

Summary of achievements

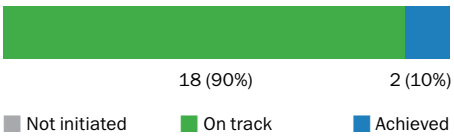
Total number of targets 2021–2025: 20

Geographic regions: 17 Global, 3 Asia

Actions during 2021:

Assess: 7 (KSR 5, 6)
Plan: 7 (KSR 8, 9)
Act: 3 (KSR 10)
Network: 4 (KSR 2, 3)

Overall achievement 2021–2025:



2021 Report

IUCN SSC Iguana Specialist Group





SOCIAL MEDIA AND WEBSITE
Website: **https://iucn-isg.org**

CO-CHAIR
Stesha Pasachnik
Fort Worth Zoo, Fort Worth, Texas, US

CO-CHAIR
Charles Knapp
John G. Shedd Aquarium, Chicago, Illinois, US

RED LIST AUTHORITY COORDINATOR
Tandora Grant
San Diego Zoo Institute for Conservation Research, San Diego, California, US

NUMBER OF MEMBERS
93

Mission statement

The mission of the IUCN SSC Iguana Specialist Group (ISG) is to prioritise and facilitate conservation, science and awareness programmes that help ensure the survival of wild iguanas and their habitats. To achieve this we implement, advise and fundraise for programmes that include population surveys, protected areas management, invasive species control, field research, genetic studies, education, and captive breeding/headstarting initiatives. Headstarting, in which hatchling iguanas are raised in a safe, captive environment until they reach a larger, less vulnerable size, is proving invaluable in rescuing several Critically Endangered iguanid taxa from the brink of extinction.

Projected impact 2021–2025

We will increase *in situ* conservation action, advance conservation action plans, hold annual meetings, complete additional Red List assessments and Green Status of Species assessments, increase the use of our specialist group listserv, add resources to our virtual library, and publish newsletters, protocols and papers focusing on iguanas.

Targets 2021–2025

ASSESS

T-002 Complete Red List assessment updates.

PLAN

T-004 Complete species conservation action plans.

T-005 Update conservation action plans.

T-010 Develop rapid response protocol for hurricanes.

ACT

T-009 Compile and curate outreach assets.

T-011 Execute actions outlined in the action plans.

T-012 Conserve and manage threatened iguanas prior to action plan development.

NETWORK

T-003 Hold annual meetings.

COMMUNICATE

T-007 Increase publications in the ISG virtual library.

T-008 Maintain and increase the use of the ISG listserv.

T-013 Publish scientific and other literature on iguanas.

Activities and results 2021

ASSESS

Red List

T-002 (KSR 6)

Number of global Red List reassessments completed: 2

Result description: We completed one Red List assessment and one Green Status of Species assessment.

PLAN

Planning

T-004 (KSR 8)

Number of conservation plans/strategies developed: 1

Result description: One new action plan was published in 2021 for the Utila Spiny-tailed Iguana (*Ctenosaura bakeri*).

T-005 (KSR 8)

Number of conservation plans/strategies updated: 2

Result description: We updated two action plans in 2021 for the Turks and Caicos Rock Iguana *(Cyclura carinata)* and the Grand Cayman Blue Iguana *(Cyclura lewisi)*.

T-010 (KSR 8)

Protocol completed: 0

Result description: We are still in the process of developing this protocol.



San Esteban Spiny-tailed Iguana (*Ctenosaura conspicuosa*); assessments for the Gulf of California iguana species were added to the Red List for the first time in 2018
Photo: Victor Reynoso



Jamaican Rock Iguana, *Cyclura collei*, nesting in the Hellshire Hills
Photo: Joey Markx

ACT

Conservation actions

T-012 (KSR 10)

Number of threatened species benefiting from *in situ* conservation action: 15

Result description: We have 15 iguana species benefiting from *in situ* conservation actions, including Fiji Crested Iguana (*Brachylophus vitiensis*), Fiji Banded Iguana (*Brachylophus bulabula*), Galápagos Land Iguana (*Conolophus subcristatus*), Utila Spiny-tailed Iguana (*Ctenosaura bakeri*), Black-chested Spiny-tailed Iguana *(Ctenosaura melanosterna*), Roatán Spiny-tailed Iguana *(Ctenosaura oedirhina*), Motagua Spiny-tailed Iguana *(Ctenosaura palearis*), Turks and Caicos Rock Iguana *(Cyclura carinata*), Jamaican Rock Iguana *(Cyclura collei*), Hispaniolan Rhinoceros Iguana *(Cyclura cornuta*), Grand Cayman Blue Iguana *(Cyclura lewisi*), Clouded Rock Iguana *(Cyclura nubila*), Anegada Rock Iguana *(Cyclura pinguis*), Ricord's Rock Iguana *(Cyclura ricordii*) and Lesser Antillean Iguana *(Iguana delicatissima*).

Synergy

T-009 (KSR 10)

Number of resources compiled: 0

Result description: We are still in the organisational stage of this target.

NETWORK

Synergy

T-003 (KSR 2)

Number of meetings: 2

Result description: Our 2021 meeting was held virtually and we are in the planning stages for our 2022 meeting.

COMMUNICATE

Communication

T-007 (KSR 13)

Number of communication products using innovative tools: 55

Result description: We have added 55 new publications to the library. Although this reached our planned goal, it remains active and we will continue to add publications each year.

T-008 (KSR 12)

Percentage increase in listserv use: 24%

Result description: We have maintained our listserv and its use has increased 24% from 2020 to 2021.

T-013 (KSR 13)

Number of print communications materials distributed in relation to specific taxonomic groups: 17

Result description: Our members have published 17 papers focusing on iguanas.

Acknowledgements

We thank the International Iguana Foundation (IIF) and their donors, for the financial support of eleven projects awarded for the 2021/2022 cycle, totalling US$ 97,392, focused on iguana conservation in Central America, the Caribbean, the Galapagos and Fiji. Further, we are grateful to the IIF for the End of Year campaign focusing on protecting the Critically Endangered Utila Spiny-tailed Iguana (*Ctenosaura bakeri*), which raised over US$ 36,000 for these efforts. We thank the Fort Worth Zoo, Shedd Aquarium, and San Diego Zoo for supporting the ISG roles of Stesha Pasachnik, Charles Knapp, and Tandora Grant, respectively. We also thank those members who made donations in 2021 to our ISG travel fund for future meetings, contributed to Red List assessments and action plans, and participated in other ISG activities. Lastly, we thank attendees at our annual meeting who presented virtual updates, participated in lively discussions, and contributed to important discussions on diversity and inclusion within our group and the wider conservation community.

Summary of achievements

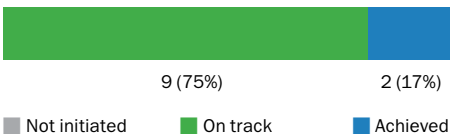
Total number of targets 2021–2025: 11

Geographic regions: 11 Global

Actions during 2021:

Assess: 1 (KSR 6)
Plan: 3 (KSR 8)
Act: 2 (KSR 10)
Network: 1 (KSR 2)
Communicate: 3 (KSR 12, 13)

Overall achievement 2021–2025:



IUCN SSC Marine Turtle Specialist Group





SOCIAL MEDIA AND WEBSITE
Website: seaturtle.org;
https://www.iucn-mtsg.org

CO-CHAIR
Roderic Mast
Oceanic Society, Washington, DC, US

CO-CHAIR
Paolo Casale
University of Pisa, Pisa, Italy

RED LIST AUTHORITY COORDINATOR
Bryan Wallace
Ecolibrium, Inc., Boulder, Colorado, US

NUMBER OF MEMBERS
293

Mission statement

The mission of the IUCN SSC Marine Turtle Specialist Group is to develop and support strategies, set priorities, and provide tools that promote and guide the conservation of marine turtles and their ecological roles and habitats.

Projected impact 2021–2025

During the 2021–2025 quadrennium, the Marine Turtle Specialist Group (MTSG) will disseminate essential knowledge about the status of sea turtles globally through reports and networking that will inform scientific publications, management strategies and action plans. The group will also update Regional Management Units (RMUs) and conservation priorities for sea turtles, which guide IUCN Red Listing as well as conservation and management strategies at local, national and international levels. The MTSG's work over the quadrennium will provide sea turtle researchers and conservationists with the most up-to-date and essential information to take the most effective action to protect sea turtles and their habitats at regional or local levels, thereby benefiting the status of sea turtles all over the world.

Targets 2021–2025

ASSESS

T-001 Complete global and subpopulation Red List assessments of the Olive Ridley (*Lepidochelys olivacea*), Green (*Chelonia mydas*), Hawksbill (*Eretmochelys imbricata*) and Flatback (*Natator depressus*) turtles.

T-002 Produce 10 Regional Reports (at least partially completed) covering >80% of countries where sea turtles occur.

T-003 Plan, fundraise, conduct pre-workshop analyses and implement the seventh MTSG 'Burning Issues' Workshop (BI-7) focused on validating RMUs, re-assessing vulnerability of all taxa, and creating a framework for 'Important Marine Turtle Areas'.

T-004 Publish three Regional Reports through IUCN.

Activities and results 2021

ASSESS

Red List

T-001 (KSR 6)

Number of global Red List reassessments completed: 0

Result description: Flatback subpopulation Red List assessments are underway. Most Green Turtle subpopulation Red List Assessments are either published (Hawaii, South Atlantic, North Indian) or about to be submitted (East Indian/West Pacific, Southwest Indian, East Pacific, Central



Olive Ridley Turtles (*Lepidochelys olivacea*) nesting during an arribada on Playa Escobilla, Mexico
Photo: Ashleigh Bandimere



Olive Ridley Turtles (*Lepidochelys olivacea*) nesting during an arribada on Playa Escobilla, Mexico
Photo: Ashleigh Bandimere



Post-nesting Green Turtle (*Chelonia mydas*) on Playa Cololа, Mexico
Photo: Ashleigh Bandimere

South Pacific). There are a couple still in draft form, such as the Mediterranean and North Atlantic.

Research activities

T-002 (KSR 5)

Number of publications produced in internal journals of SSC groups: 9

Result description: In 2017, the IUCN SSC Marine Turtle Specialist Group launched a regional reporting initiative that aims to harness the collective power of our global expert members to compile and summarise the most relevant data for conservation of sea turtles in each of the 10 MTSG regions and their respective marine turtle Regional Management Units (RMUs). Through this initiative, the MTSG aims to publish annual Regional Reports that summarise all known published data and pertinent unpublished data (at the authors' discretion) for each country and region in which sea turtles occur. Our hope is that the information in these Regional Reports will become a valuable reference for conservationists worldwide, and moreover will facilitate the production of future Red List assessments, a process that heretofore has been painstaking. In short, the Regional Reports are intended to: (1) help the MTSG fulfil its role as the global authority on sea turtles, and (2) spread the labour of Red List assessments to a broader force of MTSG members. In 2021, we completed nine draft reports that cover 72% of the countries where sea turtles occur. Four of these reports are considered complete and are in the publication process through IUCN.

T-003 (KSR 5)

Workshop held, results published: 1

Result description: The primary goal of BI-7 is to improve how we assess sea turtle conservation status and priorities, and to go beyond the limits of Red List criteria (that principally assess the level of extinction risk) by providing specific indications for priority conservation measures. To date, we have developed a process for defining global 'Important Marine Turtle Areas' (IMTAs) for all sea turtle species, using the best available data and expert opinion. This is the world's first global delineation and prioritisation of in-water habitats for sea turtles and would serve as an urgently needed tool to inform fisheries managers, governments, and organisations who are working to protect sea turtles and their habitats worldwide. We are in the process of updating Regional Management Unit boundaries and expanding and assessing the criteria used to classify population vulnerability and threats.

T-004 (KSR 5)

Number of publications produced in internal journals of SSC groups: 4

Result description: Four Regional Reports are in the publication process through the IUCN.

Summary of achievements

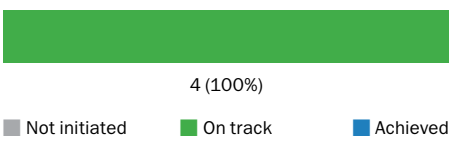
Total number of targets 2021–2025: 4

Geographic regions: 4 Global

Actions during 2021:

Assess: 4 (KSR 5, 6)

Overall achievement 2021–2025:



IUCN SSC Monitor Lizard Specialist Group



SOCIAL MEDIA AND WEBSITE
Website: **https://iucn-mlsg.org**

CHAIR
Mark Auliya
Zoological Research Museum Alexander Koenig (ZFMK) of the Leibniz Institute for the Analysis of Biodiversity Change (LIB); Adenauerallee 160, D-53113 Bonn, Germany

RED LIST AUTHORITY COORDINATOR
Michael Cota
Pathum Thani/Natural History Museum, National Science Museum, Thailand

NUMBER OF MEMBERS
35

Mission statement

Knowledge of the conservation status of monitor lizards (*Varanus* spp.) is essential for the formulation of appropriate conservation measures that would also support the protection of demarcated ecosystems. In gaining this knowledge, it is elementary to work hand in hand with national authorities and local communities.

Projected impact 2021–2025

The conservation status of many species still bears multiple uncertainties; many range-restricted species are threatened; interdisciplinary research and multi-stakeholder efforts are essential to halt the threatened status.

Targets 2021–2025

ASSESS

T-003 Publish scientific papers on taxonomic-related and conservation issues in specific *Varanus* spp.

T-004 Continue field work.

T-006 Complete Red List assessments of relatively newly described species and Philippine species by end of 2021.

PLAN

T-005 Develop scientific results into conservation strategies on the science-policy interface.

NETWORK

T-001 Restructure the memberships within the group.

COMMUNICATE

T-002 Design a website.

Activities and results 2021

ASSESS

Red List

T-006 (KSR 6)

Number of new national Red List assessments published: ongoing

Result description: In 2021, Monitor Lizard Specialist Group (MLSG) members were engaged with the appropriate expertise to assess *Varanus* spp. that remain unassessed. This was particularly in relation to species from the Pacific region. First assessments are available for Mariana Monitor (*Varanus tsukamotoi*) and Bennett's Long-tailed Monitor (*V. bennetti*). In addition, the Chair of the MLSG has been involved in communicating with experts on Philippine monitor lizards, in the context of a workshop that was to take place in October/November 2021, on 11 species assessments/reassessments – i.e. Bangon Monitor (*V. bangonorum*), Sierra Madre Forest Monitor (*V. bitatawa*), Cuming's Water Monitor (*V. cumingi*), Enteng's Monitor (*V. dalubhasa*), Panay Monitor (*V. mabitang*), Marbled Water Monitor (*V. marmoratus*), Rough-necked Water Monitor (*V. nuchalis*), Gray's Monitor (*V. olivaceus*), Palawan Water Monitor (*V. palawanensis*), Sulu Islands Water Monitor (*V. rasmusseni*) and Samar Water Monitor (*V. samarensis*) – that have been finalised and their publication due.

Research activities

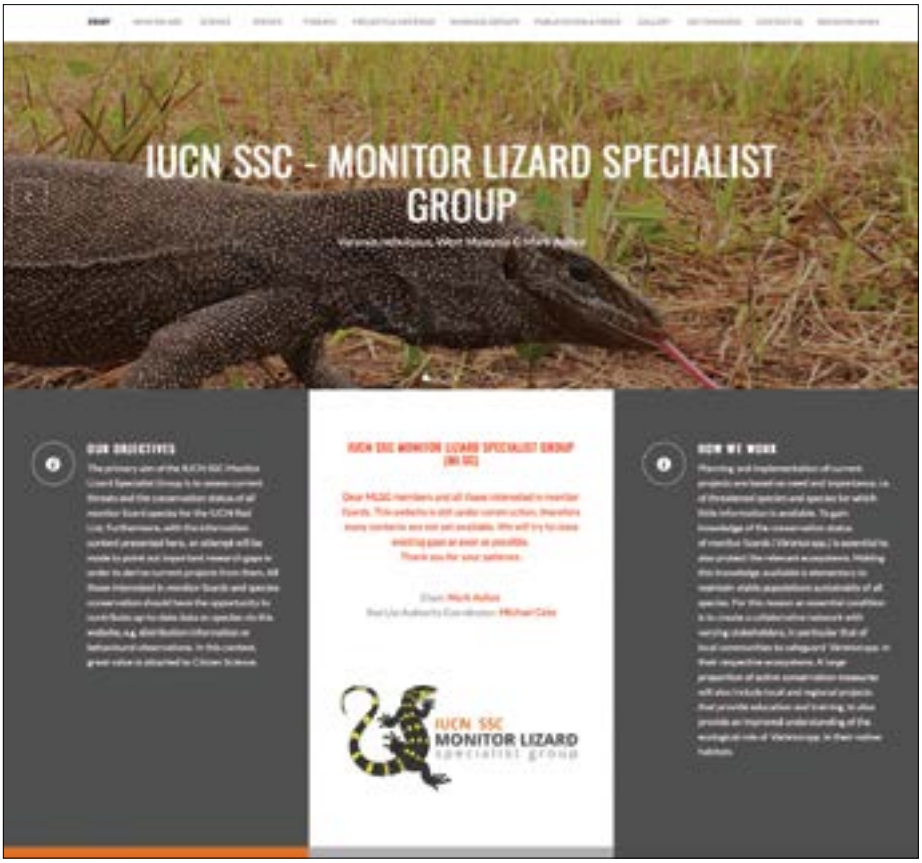
T-003 (KSR 5)

Number of scientific publications about species research that acknowledge SSC affiliation: 15

Result description: At least 15 publications in 2021 were co-authored by members of the MLSG.

T-004 (KSR 5)

Continue field research on the conservation status of *Varanus* spp.: ongoing



Screenshot of MLSG website



Confiscated *Varanus mitchelli*, the Cologne Zoo is now taking care of
Photo: Thomas Ziegler

Result description: In 2021, field work was conducted in Togo on behalf of Togolese counterparts in the framework of a genetic study; however, due to the pandemic, administrative and bureaucratic issues remain. In addition, field studies were planned in India in 2021 but could not be established or implemented due to the pandemic. However, new efforts are being made to set up these studies.

NETWORK

Membership

T-001 (KSR 2)

Number of SSC members recruited: 6

Result description: Inactive members were replaced with at least six new members.

COMMUNICATE

Communication

T-002 (KSR 12)

Building of a website of the MLSG: 1

Result description: The website of the MLSG has been designed.

Acknowledgements

I would like to first and foremost thank those members that have taken the time in 2021 to involve themselves in MLSG communication topics by email; COVID-19 was and still is challenging for all of us. I further want to thank the Alexander Koenig Society (Alexander Koenig-Gesellschaft e.V.) for providing funds to build a professional website; this was only possible with the support of U. Schepp (MSc.), Federal Agency of Nature Conservation, Germany, and Prof. Dr Wolfgang Boehme, Vice President Alexander Koenig Society (AKG) and former Head of Department Vertebrata & Curator Herpetology of the Zoological Research Museum Alexander Koenig.

Summary of achievements

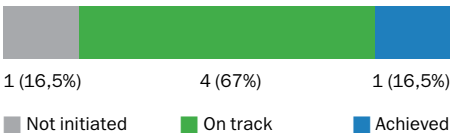
Total number of targets 2021–2025: 6

Geographic regions: 4 Global, 2 Africa, 1 Asia

Actions during 2021:

Assess: 3 (KSR 5, 6)
Network: 1 (KSR 2)
Communicate: 1 (KSR 12)

Overall achievement 2021–2025:



2021 Report

IUCN SSC Skink Specialist Group



SOCIAL MEDIA AND WEBSITE
Twitter: @skinks_IUCN
Website: https://www.skinks.org

CHAIR
David Chapple
School of Biological Sciences, Monash University, Australia

RED LIST AUTHORITY COORDINATOR
Shai Meiri
School of Zoology, Faculty of Life Sciences, The Steinhardt Museum of Natural History, Tel Aviv University, Tel Aviv, Israel

NUMBER OF MEMBERS
160



Least Concern Copper-tailed Ctenotus (*Ctenotus taeniolatus*)
Photo: Damian Michael

Mission statement

The IUCN SSC Skink Specialist Group aims to complete Red List assessments for all skink species to identify species with high extinction risk, determine the factors underlying high extinction risk, develop strategies to manage risk, improve the status of threatened skink species, and coordinate conservation management for threatened skink species.

Projected impact 2021–2025

By the end of 2025, we anticipate having assessed all remaining non-assessed species, coordinating reassessment of species as their assessments expire, and coordinating the assessment of newly described species. We aim to promote and foster collaboration among the world's skink experts and provide an avenue for regular interaction and collaboration (annual newsletter, website, email list, assessment workshops, skink conferences). We aim to: (i) conduct analyses to determine the factors underlying extinction risk in skinks; (ii) identify regions, and taxonomic groups within skinks, that have elevated extinction risk; and (iii) determine the intrinsic and extrinsic



Least Concern *Tribolonotus gracilis*
Photo: Fred Kraus



Least Concern White's Skink (*Liopholis whitii*), Namadgi NP, Australian Capital Territory
Photo: D.G. Chapple

factors that are associated with extinction risk in skinks. This will be communicated via scientific publications, regional assessment reports, our website, and through the popular media.

Targets 2021–2025

ASSESS

T-001 Complete assessment of all described skink species.

T-002 Complete reassessment of all skink species with expired assessments.

T-003 Complete assessments for all newly described skink species.

PLAN

T-006 Determine the biogeography of skink globally.

ACT

T-007 Assist skink conservation efforts globally.

COMMUNICATE

T-005 Maintain a website and Twitter account.

T-008 Create and update a listserv for all Skink Specialist Group members.

Activities and results 2021

ASSESS

Red List

T-001 (KSR 6)

Number of new global Red List assessments completed: 100

Result description: The Skink Specialist Group completed, or reviewed, ca. 100 skink assessments during the year. A further ca. 150 assessments or reassessments are currently in progress and will be submitted during 2022.

T-002 (KSR 6)

Number of global Red List reassessments completed: 50

Result description: The Skink Specialist Group completed ca. 50 reassessments of skink species, mostly from the Philippines and South Africa. A large number of additional reassessments are currently in progress.

T-003 (KSR 6)

Number of new global Red List assessments completed: 25

Result description: The Skink Specialist Group has completed assessments for ca. 25 newly described skink species, mostly from the Philippines. A further ca. 100 assessments are currently in progress and will be completed during 2022.

PLAN

Planning

T-006 (KSR 9)

Increased knowledge of the distribution and diversity of skink species: 25%

Result description: A project, led by the Skink Specialist Group, is underway to investigate the biogeography of the world's skinks. A database has been created of the distribution of all species, and Skink Specialist Group members have provided trait data on skink species worldwide, which we are going to use to examine several eco-geographical rules. It is hoped that the first publication from this project will be submitted during 2022.

ACT

Technical advice

T-007 (KSR 10)

Number of technical consultations provided to support conservation actions: 50

Result description: This is an ongoing goal. The Skink Specialist Group has supported conservation actions in Australia, the Philippines, South Africa, New Zealand and the Seychelles. This important work will continue.

COMMUNICATE

Communication

T-005 (KSR 13)

Number of digital communication outputs developed in relation to specific taxonomic groups: 100

Result description: The Skink Specialist Group maintains a website, Twitter account and email list. These are used regularly to communicate with members, the general public and a range of other stakeholders. This work is ongoing.

T-008 (KSR 12)

Number of Species e-bulletin, Save Our Species newsletter, SSC Groups' newsletter editions produced: 4

Result description: The Skink Specialist Group maintains an email list, and regularly sends email updates and news to the Specialist Group members. This includes opportunities to be involved in research activities and Red Listing activities.

Acknowledgements

We would like to thanks Monni Bohm for support during the year.

Summary of achievements

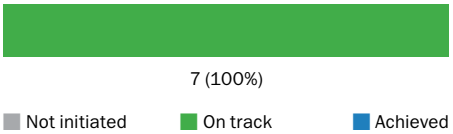
Total number of targets 2021–2025: 7

Geographic regions: 7 Global

Actions during 2021:

Assess: 3 (KSR 6)
Plan: 1 (KSR 9)
Act: 1 (KSR 10)
Communicate: 2 (KSR 12, 13)

Overall achievement 2021–2025:



IUCN SSC Snake Specialist Group



SOCIAL MEDIA AND WEBSITE
Facebook: @IUCNSSG
Instagram: iucn_ssg
Twitter: @IUCN_SSG
Website: **https://www.iucnsnake.org/**

CHAIR
Daniel Natusch
EPIC Biodiversity, France

RED LIST AUTHORITY COORDINATORS
Phil Bowles
IUCN Biodiversity Assessment Unit c/o Conservation International, Washington, DC, US
R. Graham Reynolds
University of North Carolina Asheville, North Carolina, US

NUMBER OF MEMBERS
131

Mission statement

The Snake Specialist Group's (SSG) mission is to provide expert opinion and scientific advice to IUCN and other conservation organisations, government, and non-government agencies, applicable to the conservation of snakes.

Projected impact 2021–2025

(1) To provide expert opinion and scientific advice on the conservation, management and sustainable use of boas and pythons; (2) to assess and disseminate the role of boas and pythons (and other snakes) in ecosystem health and functioning, and their support to people's livelihoods; (3) to foster and encourage research into all aspects of these taxa; (4) to provide solutions to identified problems.

Targets 2021–2025

ASSESS

T-010 Re-assess priority species within the SSG's remit for the IUCN Red List .

T-011 Ensure no Red List assessments are older than 10 years at the end of the quadrennium (2025).

PLAN

T-014 Attend and provide input to key multilateral environmental agreements (e.g. CITES, Convention on Biological Diversity (CBD), etc.) to help improve science-based policy and decision making.

T-016 Identify species at greatest conservation risk and develop conservation planning at the local, national and regional level.

ACT

T-015 Increase the number of technical consultations provided to support conservation and wildlife management initiatives.

T-018 Increase support for scientific research and conservation action involving threatened species.

T-024 Increase the number of sustainable use initiatives supported, such that those initiatives continue to be sustainable and do not jeopardise conservation.

T-025 Continue to provide technical support to sustainable use and wildlife management initiatives to ensure sustainable practices and benefits to local communities.

NETWORK

T-001 Organise an inaugural meeting for SSG members.

T-002 Appoint two members as Red List assessors.

T-003 Broaden funding base beyond private sector donations.

T-009 Increase the number of governments that the SSG is supporting to meet their conservation goals.

T-012 Increase representation of members from species Range States.

T-017 Increase financial and in kind support to scientific research projects, such that acknowledgement of the SSG is warranted.

T-019 Increase the number of early career (less than 35 years old) SSG members.

T-020 Establish Thematic Working Groups and Chairs within SSG.

T-022 Increase the number and type of stakeholders involved in implementing conservation and wildlife management plans.

T-029 Explore mechanisms for diversification within the SSG.

T-031 Appoint one member as fundraising officer for the SSG.



Coastal Taipan (*Oxyuranus scutellatus*)
Photo: Christina Zdenek



Carpet Python (*Morelia spilota*)
Photo: Jessica Lyons

COMMUNICATE

T-007 Publish an annual newsletter for the SSG.

T-008 Establish a website for the SSG.

T-013 Enhance social media presence through the development, rebuilding and maintenance of the SSG's social media platforms.

T-026 Enhance communication within the SSG and develop a formal communication strategy.

T-027 Explore the action of developing an online resource which compiles key literature on boa and python conservation.

T-028 Contribute to the development of materials for communication and awareness-raising, by offering presentations, online webinars, workshops, etc.

T-030 Appoint two (2) members as communication officers for the SSG.

Activities and results 2021

ACT

Conservation actions

T-025 (KSR 11)

Number of communities benefited from sustainable use programmes: 4

Result description: Four communities have benefited from sustainable use programmes, including Argentina, Indonesia, Malaysia and Viet Nam.

NETWORK

Capacity building

T-002 (KSR 2)

Number of people trained in assessment tools: 2

Result description: Two Red List Authorities have been appointed for the newly formed SSG.

Membership

T-012 (KSR 1)

Number of SSC members recruited: 3

Result description: Three new members have been admitted to the SSG.

T-019 (KSR 2)

Number of SSC members recruited: 2

Result description: Two new members have been admitted to the SSG.

T-020 (KSR 2)

Membership expertise distribution: 12

Result description: Several new members have been added to the group since forming the SSG.

Proposal development and funding

T-031 (KSR 2)

Number of fundraising officers appointed: 1

Result description: One member was appointed as fundraising officer for the SSG.

COMMUNICATE

Communication

T-007 (KSR 13)

Number of communication products using innovative tools: 1

Result description: We have developed a new communication team for the group, who is working to complete the first newsletter for the newly formed SSG.

T-013 (KSR 13)

Number of digital communication outputs developed in relation to specific taxonomic groups: 5

Result description: Several social media posts have been created for the newly formed SSG. The new communications team is working closely to publish more social media posts in the coming months.

T-026 (KSR 12)

Enhance communication in the SSG and develop a formal communication strategy: achieved

Result description: A formal communication strategy was finalised in 2021 for the newly formed SSG.

T-028 (KSR 13)

Number of communication products using innovative tools: 0

Result description: We are working with the new communication team for the SSG to explore other innovative communication tools to aid snake conservation.

T-030 (KSR 12)

Number of communication officers appointed: 2

Result description: Two members were appointed as communication officers for the SSG.

Acknowledgements

The SSG wishes to acknowledge and thank the following entities for supporting the SSG's work: the IUCN Species Survival Commission, Fundación Biodiversidad, CITES Secretariat, EggPicnic, and the Southeast Asian Reptile Conservation Alliance (SARCA). Thanks to Phil Bowles for contributing to the completion of Red List assessments. Thanks to our dedicated members and supporters of the SSG and snake conservation.

Summary of achievements

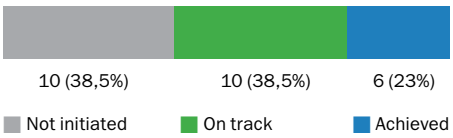
Total number of targets 2021–2025: 26

Geographic regions: 23 Global, 1 Africa, 3 Asia, 1 Oceania

Actions during 2021:

Act: 1 (KSR 11)
Network: 5 (KSR 1, 2)
Communicate: 7 (KSR 12, 13)

Overall achievement 2021–2025:



2021 Report

IUCN SSC Tortoise and Freshwater Turtle Specialist Group



SOCIAL MEDIA AND WEBSITE
Facebook: IUCN / SSC Tortoise and Freshwater Turtle Specialist Group
Twitter: @craigstanford7
Website: **https://iucn-tftsg.org**

CHAIR
Craig Stanford
Department of Biological Sciences, University of Southern California, US

RED LIST AUTHORITY COORDINATORS
Carla Eisemberg
RELI, Charles Darwin University, Darwin, Northern Territory, Australia
Vivian P. Páez
University of Antioquia, Antioquia, Colombia

NUMBER OF MEMBERS
400

Mission statement

The Mission of the IUCN SSC Tortoise and Freshwater Turtle Specialist Group (TFTSG) is to identify and document threats to the survival of all species of tortoises and freshwater turtles, and to help catalyse conservation action to ensure that none become extinct and that sustainable populations of all species persist in the wild.

Projected impact 2021–2025

We intend to complete assessments of all 360 species and 485 taxa by the end of the current quadrennium. There are also multiple species for which captive breeding and *in situ* projects are expected to make a measurable impact on preventing *in situ* extinction of those species.

Targets 2021–2025

ASSESS

T-001 Annual regional Red List assessments: 75% total species assessed.

Activities and results 2021

ASSESS

Red List

T-001 (KSR 6)

Number of national Red List reassessments published: ongoing

Result description: We are in transition between two Red List Coordinators, and about to undertake a long list of new assessments covering the Amazon region and then elsewhere. Assessments of the South American region are now underway by new Red List Coordinator Vivian P. Páez.

Summary of achievements

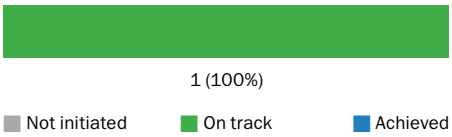
Total number of targets 2021–2025: 1

Geographic regions: 1 America

Actions during 2021:

Assess: 1 (KSR 5)

Overall achievement 2021–2025:





Critically Endangered Radiated Tortoise (*Astrochelys radiata*), Madagascar
Photo: Craig Stanford



Eduardo Reyes does conservation fieldwork in Chiapas, Mexico
Photo: Craig Stanford

IUCN SSC Viper Specialist Group





CO-CHAIR
José Jesús Sigala-Rodríguez
Universidad Autónoma de Aguascalientes, Aguascalientes, Mexico

CO-CHAIR
Stephen Spear
La Crosse, Wisconsin, US

RED LIST AUTHORITY COORDINATORS
Marcio Martins
Universidade de São Paulo, Brazil
Jelka Crnobrnja-Isailović
University of Niš, Serbia

NUMBER OF MEMBERS
110

SOCIAL MEDIA AND WEBSITE
Facebook: @viperspecialistgroup
Instagram: @viper_iucn
Twitter: @viper_IUCN
Website: https://viperconservation.org

Mission statement

The Viper Specialist Group (VSG) is a platform from which conservation biologists can work to increase our scientific understanding of viper biology and can implement conservation actions to prevent declines and extinctions.

Projected impact 2021–2025

This quadrennium marks the period where our group increases our activities to preserve viper species and habitats. A thorough reorganisation of our group to start working based on committees, together with a new website and a more active role in social networks, has allowed us to propose 76 targets for the quadrennium that will impact positively the knowledge and conservation of viper species globally.

Targets 2021–2025

ASSESS

T-002 Identify knowledge gaps in species assessments.

T-010 Project the impact of climate change on selected species of vipers in Mesoamerica and obtain missing ecological information for poorly known viper species in Mesoamerica.

T-011 Analyse the use of short distance translocation for rattlesnakes as a strategy to mitigate conflict with humans.

T-012 Develop an understanding of the potential effects of climate change in the North American region on viper activity, distribution, range shift and interactions with other members of the biological community.

T-013 Examine how environmental factors and habitat influence activity patterns, reproduction and defensive behaviour in different regions of southern California.

T-014 Examine the efficacy using intra- and extra-home range translocations to manage human-rattlesnake conflicts at state properties in West Virginia, with Timber/Canebrake Rattlesnakes (*Crotalus horridus*) through 2022.

T-016 Use long-term monitoring data of Eastern Diamondback Rattlesnakes (*Crotalus adamanteus*) to examine how rattlesnakes respond to habitat changes in military training areas.

T-017 Assess the snake diversity of Meghri Ridge, Syunik Province, Armenia.

T-018 Assess the status of pathogens, such as atadenovirus, nidovirus and cryptosporidiosis, in viperids of the southeast.

T-020 Conduct population monitoring of montane populations of rattlesnakes in the Huachuca Mountains, to determine baseline population of *Crotalus lepidus* and *Crotalus willardi* and assess impacts of grazing and herpetological tourism on the area.

T-021 Document the population ecology and natural history of *Crotalus durissus cascavella* in Brazil, determine risks for human-snake conflict and how to reduce negative effects, and assess pathogen risk in populations.

T-022 Understand urban population ecology of the Eastern Diamondback Rattlesnake (*Crotalus adamanteus*) around Florida Gulf Coast University and assess current risks to populations from a known exotic pentastomid.

T-023 Serve as sample and data repository for rattlesnake research.

T-024 Continue the Eastern Diamondback Rattlesnake (*Crotalus adamanteus*) long term research project on habitat selection, population ecology, vital demographic rates, conservation genetics, natural history and health assessments at Jekyll Island, Georgia.



Bitis worthingtoni or the Kenyan Horned Viper is considered Vulnerable in the Red List
Photo: Wolfgang Wüster

T-025 Determine if hazing of rattlesnakes could be an effective strategy to mitigate nuisance snake conflicts with humans.

T-026 Conduct long-term mark-recapture monitoring of rattlesnake populations in Arizona.

T-027 Assess ecology, behaviour, habitat use (including using telemetry techniques), reproduction and human conflict mitigation for the Chocoan Bushmaster (*Lachesis acrochorda*).

T-028 Use whole genome sequence data to assess the genetic costs of living in small, isolated populations in Eastern Massasauga Rattlesnakes (*Sistrurus catenatus*).

T-029 Use whole genome sequence data to assess the genetic costs of living in small, isolated populations of Timber/Canebrake Rattlesnakes (*Crotalus horridus*) in Ohio.

T-030 Continue ongoing long-term analysis of demography and status of Timber/Canebrake Rattlesnakes (*Crotalus horridus*) at the northern extent of their geographic range.

T-031 Update distribution maps for African vipers.

T-032 Assess the neutralizing capacity of antivenoms against Mesoamerican viper venoms.

T-035 Identify Black-headed Bushmaster (*Lachesis melanocephala*) distribution in relation to human presence.

T-037 Continue working with the Mangshan Pit Viper (*Protobothrops mangshanensis*) and *Deinakgistrodon* project in national parks in China.

T-038 Continue work on the *Protobothrops jerdonii* complex.

T-039 Analyse phylogeny and evolutionary morphology of New World pitvipers.

T-040 Launch surveys to obtain natural history information for *Vipera latastei* and *Vipera monticola*.

T-041 Launch surveys to obtain natural history information for all Anatolian vipers.

T-043 Conduct field studies to collect data on distribution of Halys Pit Viper (*Gloydius halys*) in Russia.

T-044 Conduct national monitoring of Meadow Viper (*Vipera ursinii*).

T-045 Conduct regional atlas project (Lazio Region) of the Meadow Viper (*Vipera ursinii*) and *Vipera aspis*.

T-046 Search potential sites of yet-to-be discovered Greek Meadow Viper (*Vipera graeca*) populations.

T-047 Collect and compile statistics on snakebite envenomation in Siberia and the Far East (Russia).

T-055 Review current systematics of Asian pitvipers.

T-056 Assess conservation status of other island endemics.

T-058 Review contribution to mortality from roadkill/deliberate killing of vipers.

T-059 Assess true extent of human conflict/snakebite involving vipers.

T-062 Complete Red List assessments for as many species of vipers in the world as possible.

T-063 Conduct reassessments of the Red List status for the more than 70 species of vipers in Mexico.

T-072 Gather baseline data for conservation management of Broad-banded Temple Pitviper (*Tropidolaemus laticinctus*) in Sulawesi.

PLAN

T-003 Develop a Viper Action Plan with specific actionable items.

T-073 Establish a breeding colony of Eastern Diamondback Rattlesnakes and Timber/Canebrake Rattlesnakes (*Crotalus horridus*) to support reformed rattlesnake roundups.

T-075 Complete and publish the VSG strategic plan.

T-077 Perform a conservation gap analysis for South American vipers.

T-078 Launch surveys to obtain natural history information for Nose-horned Viper (*Vipera ammodytes*) complex.

T-079 Launch surveys to obtain natural history information for *Vipera ursinii ursinii*.

T-081 Implement *ex situ* viper conservation programmes in the South American region.

T-083 Identify priority sites for the conservation of vipers and promote the creation of areas for the conservation of vipers in each region.

T-085 Conduct Pindos Mountain alpine meadow restoration.

T-086 Establish Montane Rattlesnakes Conservation Working Group.

T-087 Develop bag limits/hunting guidelines for states that do not currently have regulations for viperid species.

ACT

T-005 Prepare a database on killing (e.g. deliberate killing/roadkills) and illegal trade of vipers throughout the region (Asia) at local and national levels to identify the trends of threats to vipers from those activities.

T-088 Examine effects of urban development on rattlesnakes.



Symposium on the Conservation of the horned vipers endemic to Mexico *Mixcoatlus* and *Ophryacus*
Photos: Jesús Sigala



Participants of the Red List Training session for *Mixcoatlus* and *Oprhyacus* in Aguascalientes, Mexico
Photos: Jesús Sigala



Bothriechis aurifer, a pitviper found in Mesoamerica listed in the Red List as Vulnerable
Photo: Justin Elden

T-089 Conduct long-term ecological research on Tiger Rattlesnakes (*Crotalus tigris*) in the Sonoran Desert.

T-090 Study ecology of Prairie Rattlesnake (*Crotalus viridis*) populations at the southern extreme of their distribution in Southwest New Mexico.

T-091 Assess snake fungal disease (SFD) in free-ranging rattlesnakes of the American Southwest (North American Region).

T-092 Survey general recovery of *Vipera ursinii ursinii* habitats in 'Campo Imperatore', the core area of its distribution in Gran Sasso and Laga Mountains National Park (Central Italy).

T-093 Protect Greek Meadow Viper (*Vipera graeca*) populations with highest threats.

T-094 Reduce number of rattlesnake round-ups and pressure on local populations of various rattlesnake species.

T-095 Establish the Eastern Diamondback Working Group.

T-096 Address inaccessibility in science through Bridge the Gap – a programme designed to establish mentors for youth and provide hands-on opportunities and experiences in science and reptile conservation.

T-097 Train the general public, military installations, zoos, consultants and researchers how to safely contain, reduce pathogen transmission, and relocate venomous reptiles to reduce human-snake conflict.

T-098 Examine ecology and conservation of the federally threatened New Mexico Ridge-nosed Rattlesnake (*Crotalus willardi obscurus*).

T-099 Study spatial ecology of Armenian Mountain Viper (*Montivipera raddei*) in two different landscapes: human-modified vs recovered-natural.

NETWORK

T-001 Increase representativity in membership.

T-006 Develop effective partnerships between zoos and VSG.

T-008 Increase the efficiency and amount of internal and external communication.

COMMUNICATE

T-004 Create a new website about the Viper Specialist Group with taxonomic updates to make this information more widely available.

T-101 Host the Venomous Herpetology Symposium (https://www.venomsymposium.com).

T-102 Restructure the editorial board of the Viper Specialist Group newsletter to restart its publication.

T-103 Increase the efficiency and amount of internal and external communication.

T-104 Increase communication between *ex situ* programmes.

T-107 Connect youth with the natural world and instil an appreciation and deeper understanding of rattlesnakes and other misunderstood species through STEM Station – a programme that teaches science in the outdoors.

T-108 Establish distance learning opportunities that teach students about rattlesnake ecology and conservation through a comprehensive curriculum that aligns with state educational standards.

T-109 Run Conservation Camp – a ground-breaking youth programme meant to give students experiences in habitat evaluation, environmental monitoring and wildlife surveys to foster a connection with the natural world and install a deeper understanding of rattlesnakes and other misunderstood species.

T-110 Create outreach materials that can be customised by region for living with vipers.

Activities and results 2021

ASSESS

Red List

T-062 (KSR 6)

Number of new Red List assessments published per species group, region, and biological realm on the IUCN Red List of Threatened Species: 1

Result description: The first assessment is being carried out; we started with six species of vipers in Mexico and will continue with other species in the region.

T-063 (KSR 6)

Number of species groups that are comprehensively reassessed in a timely manner: 1

Result description: This target is being worked on. The Co-Chairs obtained funding at the end of 2021 from the Edge Foundation to assess/reassess the status of six species of Mexican vipers in two genera: *Mixcoatlus* and *Ophryacus*. We already started visiting type localities and will finish the assessments by mid-2022. Taking advantage of this, we plan to assess/reassess all the other Mexican viper species by the end of 2022 with the help of our Red List Authority Coordinators.

Research activities

T-002 (KSR 6)

Number of species that have been assessed through the different tools: 0

Result description: The COVID-19 pandemic delayed the start of Red List assessments, but we have several programmed for 2022.

T-010 (KSR 5)

Number of research projects completed or supported by SSC members per taxonomic group and region: 0

Result description: We are in the process of finalising a publication for a species in southern Mexico.

T-011 (KSR 5)

Number of research projects completed or supported by SSC members per taxonomic group and region: 0

Result description: We have completed the experimental phase of short distance translocation for rattlesnakes and quantification of results and are proceeding with the data analysis phase.

T-012 (KSR 5)

Number of research projects completed or supported by SSC members per taxonomic group and region: 0

Result description: We have started the data collection phase, establishing three focal sites for Prairie Rattlesnakes at the northern, central and southern portion of their range, and have started gathering detailed data on behaviour and spatial ecology with respect to temperature and other environmental variables.

T-013 (KSR 5)

Number of research projects completed or supported by SSC members per taxonomic group and region: 1

Result description: This target has started but does not yet have results. The project is still underway.

T-018 (KSR 5)

Number of scientific publications about species research that acknowledge SSC affiliation: 1

Result description: Monitoring is still ongoing. We are in need of additional samples from Canebrake/Timber Rattlesnakes to test for pathogens. Atadenovirus and cryptosporidiosis have been confirmed in Eastern Diamondback Rattlesnakes (*Crotalus adamanteus*) and *Agkistrodon conanti* in Florida and Georgia.

T-020 (KSR 5)

Number of research projects completed or supported by SSC members per taxonomic group and region: 1

Result description: The project is currently in the planning phase with intent to begin field work in 2024.

T-022 (KSR 5)

Number of research projects completed or supported by SSC members per taxonomic group and region: 1

Result description: Eastern Diamondback Rattlesnakes (*Crotalus adamanteus*) appear to be stable around Florida Gulf Coast University. They often utilise edge habitats near roads/sidewalks, likely for thermoregulatory benefits and access to prey items such as rodents and rabbits that are abundant on campus. However, with development rapidly occurring surrounding the campus, this will eventually cut off the connectivity to landscapes outside of campus property. The long-term genetic viability of the population is still being studied, but obvious threats are expected. The risk of pentastomes to this species appears low. Prey sources for this species are not major intermediate hosts; Terry Farrell from Stetson University has more information. From approximately 30 Eastern Diamondback Rattlesnakes salvaged around SWFL, we only detected the exotic *Raillietiella orientalis* in 5–6 individuals, with the largest parasite load being maybe seven.

T-024 (KSR 5)

Number of research projects completed or supported by SSC members per taxonomic group and region: 1

Result description: Tracking of Eastern Diamondback Rattlesnakes (*Crotalus adamanteus*; hereafter EDB) continues since 2011, including collection of point locations on Jekyll Island EDBs. We have submitted a publication related to a hybrid between *C. adamanteus* X *C. horridus* that has been accepted by *Southeastern Naturalist* and is expected to be available by the end of 2022. We concluded a health study in which we learnt that we can predict EDB gravidity up to 11 months in advance of a birthing event and have used this technique to collect fecundity data on our local population. Finally, we have been working on partnerships and National Science Foundation (NSF) grants to further understand the relationship between habitat, spatial use and genetic isolation, and how these topics may be influenced by future habitat restoration campaigns.

T-028 (KSR 5)

Number of scientific publications about species research that acknowledge SSC affiliation: 1

Result description: Results addressing the use of whole genome sequence data to assess the genetic costs of living in small, isolated populations in Eastern Massasauga Rattlesnakes were published: Ochoa, A. and Gibbs, H.L. (2021). 'Genomic signatures of inbreeding and mutation load in a threatened rattlesnake'. *Molecular Ecology* 30:5454–5469. https://doi.org/10.1111/mec.16147.

T-029 (KSR 5)

Number of scientific publications about species research that acknowledge SSC affiliation: 1

Result description: The complete genome of Timber/Canebrake Rattlesnakes (*Crotalus horridus*) was assembled using a combination of long read HiFi and short read PE data. The genome was annotated. High coverage genomes were generated for multiple individuals from three remaining Ohio samples. Assessment of levels of inbreeding and mutational load in small Ohio populations is ongoing as part of the PhD thesis of Marissa Roseman, PhD student, School of Environment and Natural Resources, Ohio State University, co-supervised by Bill Peterman and H. Lisle Gibbs. This work is supported by Ohio Biodiversity Conservation Partnership through Ohio Division of Wildlife.

T-030 (KSR 5)

Number of scientific publications about species research that acknowledge SSC affiliation: 0

Result description: William Brown will present the results of a four-decade career studying Timber/Canebrake Rattlesnakes (*Crotalus horridus*) in the field at a single locality in north-eastern New York at the Biology of Pitvipers IV conference in Rodeo, New Mexico, US, in July 2022.

T-031 (KSR 5)

Number of research projects completed or supported by SSC members per taxonomic group and region: 1

Result description: The regional coordinator has started gathering material and reaching out to personnel in the Red List Unit to consolidate distribution maps of African vipers generated.

T-035 (KSR 5)

Number of scientific publications about species research that acknowledge SSC affiliation: 0

Result description: We have produced an updated species distribution model for Black-headed Bushmasters based on over 20 recent observations collected through our Plato Negro Ecology research team. We are preparing a manuscript to publish the new model. Our team has also been reaching out to local landowners living on bushmaster habitat and has created signs promoting bushmaster conservation that several landowners have posted on their land.

T-039 (KSR 5)

Number of scientific publications about species research that acknowledge SSC affiliation: 1

Result description: We recently concluded this activity with the development of a manuscript entitled 'Total-evidence phylogeny and evolutionary morphology of New World pitvipers' (Carrasco, P., et al.). In this study we obtained a phylogeny of New World pitvipers from the combined analyses of morphological and molecular data, we analysed the relationships among and within genera, and we analysed the evolution of the morphology of the group from a phylogenetic perspective. The manuscript was submitted in early June.

T-040 (KSR 5)

Number of scientific publications about species research that acknowledge SSC affiliation: 0

Result description: In 2021, we published one paper in which we updated the taxonomy of *Vipera latastei* and *V. monticola*. The first species is now restricted to the Iberian Peninsula (Spain and Portugal), while the second is restricted to North Africa (Morocco, Algeria and Tunisia). As a consequence of this update, the conservation status of both taxa must be re-evaluated. During 2022, we will work on the IUCN Red List assessments for these two species. We will most likely have a presentation about this topic at the next Societas Europaea Herpetologica (SEH) congress, in Belgrade.

T-041 (KSR 5)

Number of research projects completed or supported by SSC members per taxonomic group and region: 1

Result description: The project on Anatolian vipers is ongoing, and has extended deeper into Western Asia.

T-043 (KSR 5)

Number of research projects completed or supported by SSC members per taxonomic group and region: 1

Result description: We have published new distribution records advancing the known north-western range limits of the Halys Pit Viper 100 km west (see https://biozoojournals.ro/nwjz/content/v17n1/nwjz_e217501_Simonov.pdf). The surveys will be continued.

T-044 (KSR 5)

Number of research projects completed or supported by SSC members per taxonomic group and region: 0



Crotalus catalinensis or the Rattle-less Rattlesnake, Baja California Sur, Mexico
Photo: Scott Trageser

Result description: A total of 36 surveys were realised, but only in Gran Sasso Laga National Park and Velino-Sirente Regional Park (Abruzzo Region); data were collected during these surveys that could enable trend analysis of the conservation status of the species.

T-045 (KSR 5)

Number of research projects completed or supported by SSC members per taxonomic group and region: 0

Result description: In 2021, work focused on the overall setup of the collection of past presence data (to date), individual species sheets of the atlas, and species mapping.

T-055 (KSR 5)

Number of scientific publications about species research that acknowledge SSC affiliation: 0

Result description: We are on hold for a meeting of the VSG Taxonomy Committee. However, Anitha Malhotra is currently working on a review of the taxonomy of the *Trimeresurus* genus/subgenus, particularly the 'albolabris' group, which has seen several new species descriptions in recent years, many largely based on colour pattern differences which are relatively weak taxonomic characters. My analysis is largely based on mitochondrial and morphometric data. I do have nuclear genes for some, but they are proving rather uninformative as the divergence in this group is quite recent.

T-056 (KSR 5)

Number of scientific publications about species research that acknowledge SSC affiliation: 0

Result description: Part of the reason for the focus on the albolabris group above is that there are many species that are island endemics. We are also working on a large pitviper multilocus phylogeny which will, as far as the data are available, give us some basis for this evaluation.

T-059 (KSR 5)

Number of scientific publications about species research that acknowledge SSC affiliation: 0

Result description: Vishal Santra's organisation is pioneering an app used by rescuers that will provide these data. Currently, there are ca. 500 records from one district in West Bengal which are being analysed by a member of that organisation, a PhD student Sourish Kuttalam. However, other districts and states are also being brought into this study and will start to provide more geographical coverage soon. There are other similar initiatives elsewhere in India and hopefully we will also be able to access their data, although it may not be entirely comparable.

PLAN

Planning

T-003 (KSR 8)

Number of conservation plans/strategies developed: 0

Result description: We have created committees that will be used to guide the action plan. We are still trying to figure out the best way to accomplish this with everyone's busy schedules.

T-073 (KSR 8)

Number of taxa (defined as species or subspecies) covered by a range-wide plan or strategy, or by a collection of plans or strategies, developed with SSC: 1

Result description: Chehaw Park and Zoo in Albany, Georgia, currently houses approximately 15 rattlesnakes (Eastern Diamondback and Timber/Canebrake Rattlesnakes). The Rattlesnake Conservancy met with the Association of Zoos & Aquariums (AZA) Herp Tag to emphasise the need for zoos to be breeding these species for use in these types of events.

T-077 (KSR 8)

Number of taxa (defined as species or subspecies) covered by a range-wide plan or strategy, or by a collection of plans or strategies, developed with SSC: 1

Result description: This work is finished and the results have been submitted to the journal *Biological Conservation*.

T-079 (KSR 8)

Number of taxa (defined as species or subspecies) covered by a range-wide plan or strategy, or by a collection of plans or strategies, developed with SSC: 1

Result description: Results have been extensive in several areas of Central Italy thanks to many field trips, hundreds of hours of trekking, and many populations located: the species has been documented in many areas in Monti Sibillini National Park, Sirente-Velino Regional Park, and Monte Veline Nature National Reserve.

Policy

T-083 (KSR 9)

Number of Multilateral Environmental Agreement meetings attended by the SSC group: 1

Result description: We continue identifying priority sites for the conservation of vipers. One area that we are exploring to see the possibility of purchase for conservation is in the southern part of Oaxaca state in Mexico.

T-086 (KSR 9)

Number of Multilateral Environmental Agreement meetings attended by the SSC group: 1

Result description: The working group has been established and meets quarterly to discuss current and future research





Conservation signs for the viper *Lachesis melanocephala* in Costa Rica
Photo: Roel de Plecker

needs. The last meeting the working group held, Tom Jones of Arizona Game and Fish Department (AZGFD) joined and discussed the future project to monitor *Crotalus lepidus* and *Crotalus willardi*. AZGFD is supportive of this project. Most recently, the Trinational Initiative between the US, Canada and Mexico identified a need for range documentation of montane rattlesnakes in Mexico. Mexican counterparts are likely to be underfunded for the project. The Rattlesnake Conservancy is currently seeking funding to help support this effort.

T-087 (KSR 9)

Number of policies where SSC members provided technical input: 1

Result description: The Rattlesnake Conservancy has established a multi-organisational working group, to secure funding for lobbying efforts with state legislators in Texas to establish bag limits for rattlesnakes native to the state. We expect to begin efforts in early 2023.

ACT

Conservation actions

T-088 (KSR 10)

Number of threatened species benefiting from *in situ* conservation action: 1

Result description: This project has started and results are being still obtained.

T-092 (KSR 10)

Number of threatened species benefiting from *in situ* conservation action: 1

Result description: During 2021, we carried out eight survey sessions of *Vipera ursinii ursinii* in the 'Fonte Vetica' study area, with time-constrained research method (cf. Luiselli & Akani, 2002l), collecting 10 certain reports of presence.

T-094 (KSR 10)

Number of threatened species benefiting from *in situ* conservation action: 1

Result description: Whigham Roundup recently reformed from a collect-kill roundup to an educational event due to efforts by Georgia Reptile Society, Quail Forever, The Rattlesnake Conservancy and Georgia Department of Natural Resources. This event will continue to be held annually and snakes used at the event are supplied by the above referenced organisations. Recently, The Rattlesnake Conservancy discovered that the Evans County Wildlife Club (ECWC), which hosts the Claxton Rattlesnake Festival, is still exploiting rattlesnakes as part of their event, including teaching the public how to hunt and collect rattlesnakes.

T-095 (KSR 10)

Number of threatened species benefiting from *in situ* conservation action: 1

Result description: The Rattlesnake Conservancy continues to hold quarterly meetings with participants and are currently developing a Conservation Action Plan for the Eastern Diamondback Rattlesnake. The working group expects to have an early draft available for review by partners in late 2023.

T-096 (KSR 11)

Number of projects providing evidence that use is sustainable per taxonomic group and region: 1

Result description: The SCIFA Club or 'Science for All', formerly known as Bridge the Gap, begins meeting early in 2022 with the first cohort of students meeting for an evening of field herping with field researchers from The Rattlesnake Conservancy. We have made partnerships with Jacksonville Zoo, White Oak Conservation, St. Augustine Alligator Farm and the Florida Forest Service to provide continued workshops on a regular basis to help youth get outdoors and learn about the many fields of conservation and education.

Technical advice

T-005 (KSR 11)

Number of unsustainable use practices tackled: 0

Result description: We changed the structure of our Specialist Group and planned the creation of a committee to look at this issue in 2022.

T-089 (KSR 10)

Number of technical consultations provided to support conservation actions: 1

Result description: This project started as planned and results are still being obtained.

T-090 (KSR 10)

Number of technical consultations provided to support conservation actions: 1

Result description: This project started as planned and results are still being obtained.

T-097 (KSR 10)

Number of technical consultations provided to support conservation actions: 1

Result description: During 2021, The Rattlesnake Conservancy provided training to a little over 200 students in eight different states across the United States. These training programmes were provided to state and Federal agencies, researchers, developers (including renewable energy companies), medical practitioners, veterinarians and general snake enthusiasts. This has created a network of individuals who are skilled in the handling of venomous snakes, are safe, and understand the habitat needs required to provide successful relocation of snakes when necessary.

T-098 (KSR 10)

Number of technical consultations provided to support conservation actions: 1

Result description: This target started as planned and is on track.

NETWORK

Membership

T-001 (KSR 2)

Number of SSC members recruited: 15

Result description: Our group is still large, but we have deleted several members that had not contributed at all since the beginning and invited several others that are already helping in many of the newly created committees.

T-008 (KSR 2)

Number of SSC members recruited: 1

Result description: With the change in the structure of the group to a committee-based one, the creation of the website and the listserv, we improved the internal communication of the group.

Synergy

T-006 (KSR 1)

Number of 'funding' partners established and maintained: 1

Result description: We have launched the *ex situ* VSG committee as part of the new structure of VSG and are currently discussing with European Association of Zoos and Aquaria (EAZA) and AZA members to create a plan to prioritise viper species for further *ex situ* conservation work.

COMMUNICATE

Communication

T-004 (KSR 13)

Number of communication products using innovative tools: 1

Result description: Our new website was constructed in the first half of 2021 and published on International Snake Day (July 2021). In addition to the website, we have created an email listserv that will serve as a communication platform among members. We are currently subscribing members to the list.

T-101 (KSR 13)

Number of SSC members' presentations developed in relation to specific taxonomic groups: 1

Result description: This Symposium is currently being organised and going well. It will take place in September 2022.

T-104 (KSR 12)

Number of media articles mentioning IUCN Species theme: 0

Result description: We have launched the *ex situ* VSG committee and are currently discussing with EAZA and AZA members to create a plan to prioritise viper species for further *ex situ* conservation work.

T-107 (KSR 13)

Number of SSC members' presentations developed in relation to specific taxonomic groups: 1

Result description: STEM Station is an active programme that is continuously hosted at our facility in Jacksonville, Florida. We have hosted over 100 students at these educational programmes.

T-108 (KSR 13)

Number of communication products using innovative tools: 1

Result description: Multiple activities are available online on our website at: https://www.savethebuzztails.org/educator-resources.

T-110 (KSR 13)

Number of print communications materials distributed in relation to specific taxonomic groups: 0

Result description: We were able to collect some existing outreach materials that are linked to the website with the permission of the original authors.

Scientific meetings

T-103 (KSR 12)

Number of scientific meetings: 1

Result description: This target is a work in progress. We have not held many virtual meetings but have increased our communication, especially after we created the different committees in the structure of our group, which allows us to work more focused on particular themes.

Acknowledgements

The Co-Chairs want to acknowledge the hard work of our 110 members, who through their individual activities make a difference to conserving the vipers of the world. The Regional Coordinators have been instrumental in the group's activities: Marcio Martins and Jelka Crnobrnja (Red List Authority Coordinators), Rulon Clark (North America Regional Coordinator), Mahmood Sasa (Mesoamerica), Marcio Martins and Paola Carrasco (South America), Jelka Crnobrnja and Evgeny Simonov (Europe and North Asia), Pritpal Singh Soorae (North Africa/West Asia), Anita Malhotra and Kevin Messenger (East Asia) and Bryan Maritz (Africa). The Rattlesnake Conservancy and Orianne Society provided help and fiscal sponsorship to our group, and we are collaborating with several conservation agencies and NGOs. We have received support from the IUCN SSC and Re:wild. Jesús Sigala-Rodríguez thanks the authorities of the Universidad Autónoma de Aguascalientes for the flexibility and support to carry out his activities as Co-Chair of the group.

Summary of achievements

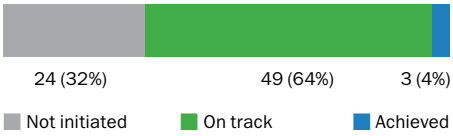
Total number of targets 2021–2025: 76

Geographic regions: 12 Global, 2 Africa, 42 America, 9 Asia, 12 Europe

Actions during 2021:

Assess:	25 (KSR 5, 6)
Plan:	7 (KSR 8, 9)
Act:	10 (KSR 10, 11)
Network:	3 (KSR 1, 2)
Communicate:	7 (KSR 12, 13)

Overall achievement 2021–2025:



2021 Report

IUCN SSC Asian Songbird Trade Specialist Group



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VICE CHAIR
Frank Rheindt (Genetic research)
Department of Biological Sciences, National University of Singapore, Singapore

VICE CHAIR
Andrew Owen and Anais Tritto (Conservation breeding and reintroduction)
Chester Zoo, UK and Mandai Nature, Singapore

VICE CHAIR
Chris Shepherd (Trade and legislation)
Monitor Conservation Research Society, Vancouver, Canada

VICE CHAIR
Anuj Jain and Novia Sagita (Education and community engagement)
BirdLife Asia, Singapore and Planet Indonesia, Indonesia

RED LIST AUTHORITY COORDINATORS
BirdLife International

NUMBER OF MEMBERS
79

Mission statement

The IUCN SSC Asian Songbird Trade Specialist Group (ASTSG) exists to prevent the imminent extinction of songbirds threatened by unsustainable trapping and the trade in wild-caught passerines. In addition, it seeks to address the impact of the trade and to find solutions through which the growing threat to an ever-increasing number of songbird species can be reversed and improve the conservation status of all species involved.

Projected impact 2021–2025

The Asian Songbird Trade Specialist Group constantly reviews the growing list of songbird species whose conservation status is affected by trade. From this, it can prioritise recommending measures aimed at avoiding the extinction of those most at risk. Through monitoring the markets, including online trade, and carrying out field work it provides data that guide the best assessment of their status. This assists BirdLife's Red List team in determining the most accurate IUCN Red List categorisations. Given the severity and complexity of the trade, it is unlikely that the level of threat for these songbirds will improve markedly during this quadrennium. For some of the most threatened species, conservation breeding programmes will act as assurances against extinction. Some restorations of free-flying populations will commence and important to the success of these will be working closely with local communities. Research into the key drivers of trade and songbird keeping will help target the most effective measures to bring about demand reduction in wild-caught songbirds. This, coupled with increased protection of wild populations, is seen as the longer-term solution to improving the status of the many affected songbird species and to stemming the flow of songbird species being include as threatened on the Red List.

Targets 2021–2025

ASSESS

T-007 Continue to strengthen engagement with BirdLife as the IUCN Red List Authority to implement ASTSG's recommendations regarding the Red List.

T-063 Conduct trade research and analysis to improve effectiveness of law enforcement agencies in combating Illegal Wildlife Trade.

T-064 Produce publication on White-eye taxonomy.

T-065 Publish Rufous-fronted Laughingthrush (*Garrulax rufifrons*) conservation breeding paper.

T-066 Publish a paper on the status of trade and protection of the Crested Jayshrike (*Platylophus galericulatus*).

T-067 Publish a minimum of one paper highlighting the benefits of using CITES Appendix III.



Black-capped White-eyes (*Zosterops atricapilla*) on sale in Sumatra, Indonesia
Photo: S. Shukhova

T-068 Publish a minimum of four market surveys in Indonesia, Viet Nam and Hong Kong.

T-069 Carry out a study and publish a paper on the number of threatened passerines that are migratory and use to engage the Convention on Migratory Species (CMS; KSR 9).

T-070 Conduct a research study on the songbird trade across Borneo.

T-071 Produce Thailand native bird trade paper.

T-072 Conduct Viet Nam songbird consumer study and pilot intervention.

T-073 Produce Malaysia Oriental Magpie-robin (*Copsychus saularis*) trade briefing paper.

T-074 Publish a paper on the status and decline of Javan White-eye (*Zosterops flavus*).

T-075 Publish a paper assessing the status of a range of key montane bird species in Java.

T-076 Publish a paper on the attitudes and perceptions of bird owners in Java.

T-077 Publish a paper identifying the best messages for campaigns for demand reductions.

T-078 Publish a paper on factors influencing montane bird distributions in West Java.

T-079 Publish a paper on supply route dynamics of birds in commercial breeding facilities in Java.

T-080 Publish a paper on results of a behaviour change campaign on songbird enthusiasts.

T-081 Develop guidelines on songbird rescue, rehab and release (RRR) facilities.

T-082 Quantify and publish turnover of songbirds in markets.

T-083 Quantify and publish mortality of songbirds along the trade supply chain for key species.

T-084 Develop and publish behaviour change/demand reduction guidelines to push for sustainable trade of songbirds.

T-085 Quantify and publish the extent of cross border trade in songbirds that can push CITES listing of victim species.

T-086 Publish clear guidance documents for governments to show decline in songbirds for key species.

T-087 Develop guidelines and encourage monitoring of key songbird species with SMART patrols in protected areas.

T-088 Develop guidelines and initiatives to encourage bird tourism for key songbird species as an alternative to trapping.

T-089 Establish clear communications or guidelines around the role of *ex situ* conservation (e.g. zoos) in tackling the songbird trade issue.

T-090 Publish paper on understanding the drivers behind the Singapore songbird trade.

T-096 Integrate citizen science-based knowledge through increased engagement within the membership.

T-097 Using Red List indicators, develop a Red List Index for songbirds in Indonesia and recalculate this annually to track progress.

T-101 Work with partners to monitor online trade to assess level of trade in songbirds online and changes in trends.

PLAN

T-001 Conduct action plan meeting for Javan Green Magpie (*Cissa thalassina*).

T-003 Conduct action plan meeting for the threatened endemic songbird taxa of the Barusan Islands.

T-004 Conduct National Straw-headed Bulbul (*Pycnonotus zeylanicus*) Action Plan for Singapore.

T-008 Conduct action plan meeting for Rufous-fronted Laughingthrush and publish plan.



Yellow-vented Bulbuls (*Pycnonotus goiavier*)
Photo: S. Shukhova

T-009 Conduct range wide action plan meeting for Straw-headed Bulbul and publish plan.

T-010 Create a species management plan for Black-winged Myna (*Acridotheres melanopterus*) in Baluran National Park.

T-011 Encourage governments where songbird trade is an issue to develop national songbird action plans.

T-012 Encourage stakeholders to implement species-specific national action plans where needed.

T-013 Conduct Bali Starling (*Leucopsar rothschildi*) Conservation Action Plan meeting and publish Action Plan.

T-014 Conduct Black-winged Myna Conservation Action Plan meeting and publish Action Plan.

T-015 Conduct a Javan Pied Starling (*Gracupica jalla*) Conservation Action Plan meeting and publish Action Plan.

T-016 Conduct Sumatran endemic bird species action plan meeting and publish Action Plan.

T-017 Provide input for all songbird-related CITES proposals at the next Conference of the Parties (CoP).

T-018 Begin discussions/engagements on CMS-relevant songbirds (e.g. flycatchers; pittas; starlings; Crested Jay; Siberian Blue Robin, *Larvivora cyane*).

T-019 Support Balai Konservasi Sumber Daya Alam (BKSDA) to improve their licensing process provided to wildlife owners/traders.

T-098 Work with conservation breeding centres within Indonesia to develop overall strategic plan and linkages to longer term interventions.

T-099 Develop framework for management of confiscated songbirds through rescue centres in Indonesia.

T-100 Assess current trends of traded species and identify species to recommend and support for CITES listings for species of concern due to international trade.



Black-winged Myna (*Acridotheres m. melanopterus*)
Photo: Jonathan Beilby

ACT

T-002 Secure assurance *ex situ* conservation breeding population of Sumatran Laughingthrush (*Garrulax bicolor*).

T-005 Secure assurance conservation breeding population of Black-winged Myna.

T-020 Identify rescued songbirds for release and develop release programmes and proposal for rescued songbirds.

T-021 Establish secure assurance breeding population of Javan Green Magpie.

T-022 Establish an assurance conservation breeding population of Rufous-fronted Laughingthrush.

T-023 Establish an assurance conservation breeding population of Straw-headed Bulbul.

T-024 Establish assurance conservation breeding population of Javan Pied Starling.

T-025 Establish assurance conservation breeding population of Nias Hill Myna (*Gracula robusta*).

T-026 Continue to support Bali Starling conservation in Indonesia.

T-027 Establish an assurance conservation breeding population of Barusan Shamas (*Kittacincla malabaricus* spp./*Copsychus melanurus*).

T-028 Establish an assurance conservation breeding population of Barusan Island Hill Mynah species.

T-029 Secure assurance breeding population of Orange-headed Thrush (Javan subspecies, *Geokichla citrina rubecula*).

T-030 Continue to support Blue-crowned Laughingthrush (*Pterorhinus courtoisi*) conservation.

T-031 Conduct field surveys to establish status of Sumatran endemics (e.g. Aceh Bulbul, *Pycnonotus snouckaerti*).

T-032 Create a 'model community' in West Java within which ecosystem services, bird populations and human well-being is improved and monitored.

T-034 Collaborate with local stakeholders to move songbird shops to alternative sustainable livelihoods.

T-035 Develop a Position Statement from the ASTSG on improved use of CITES for songbird conservation.

T-036 Develop a Position Statement from the ASTSG supporting increased use of CITES Appendix III for songbird conservation.

T-037 Develop a Position Statement from the ASTSG endorsing the inclusion of the Sumatran Laughingthrush in CITES Appendix III.

NETWORK

T-039 Host online talks by members on their work: engagement and mentoring: invite partners, funders, SSC main office, Conservation Planning Specialist Group (CPSG), etc.

T-046 Develop Standard Operating Procedures (SOP) to support creation of interagency coordination between GAKKUM, BKSDA, POLDA, BPSPL and Customs and Quarantine in Indonesia.

T-047 Catalyse funding to support rescue, rehabilitation and release operations for confiscated songbirds.

T-048 Build and strengthen partnerships with Indonesian NGOs, academic institutions and other entities working on bird conservation issues.

T-049 Build conservation capacity and competency, both individual and organisational (e.g. using IUCN Asian Species Action Partnership framework).

T-050 Train staff of Indonesian NGOs to perform species distribution models and other relevant modelling techniques.

T-051 Train national park staff in Bali Barat to undertake monitoring, nest monitoring and other activities in support of Bali Myna (*Leucopsar rothschildi*) conservation.

T-052 Develop the capacity of BKSDA staff on species identification, handling and management of confiscated songbirds.

T-053 Increase membership of local stakeholders (birders, students, ecologists, conservationists, etc.) within the group.

T-054 Work with six communities around West Java to enhance populations of key songbirds.

T-055 Collaborate with state prosecutors, judges, POLDA and BKSDA to prepare victim statements for wildlife related crimes.

T-056 Formalise an Indonesian subgroup of ASTSG with Indonesian leadership.

T-057 Strengthen relationship with governments of countries where songbird trade is an issue.

T-058 Formalise relationship with songbird competition organisers and relevant stakeholders through ASTSG community engagement subgroup to reduce demand for wild songbirds.

T-059 Develop a habitat and enforcement working group to tackle these issues as part of ASTSG.

T-060 Increase collaboration with local universities, NGOs and governments within ASTSG.

T-061 Strengthen collaboration with IUCN SSC Asian Species Action Partnership (ASAP).

T-062 Work with Perhutani and Indonesian NGOs to provide 100 km^2 of additional protection for areas and key birds in West Java.

T-091 Look at engaging relevant industry partners in conservation partnerships.

T-092 Explore in-kind partnerships with carbon offsetting company to fund 'model community' initiative.

T-093 Explore engaging relevant industry partners (e.g. forestry concessions) in conservation partnerships.

T-094 Explore funding partnerships with carbon offsetting company to fund 'model community' initiative.

T-095 Ensure sustained funding is available to carry out conservation breeding activities.

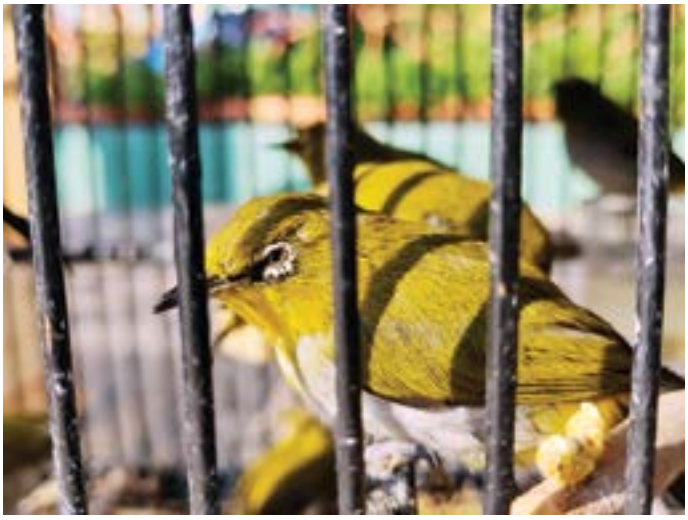
COMMUNICATE

T-038 Update and maintain citations and publications list on the ASTSG website.

T-040 Set up social media for ASTSG (Facebook, Instagram and Twitter) and maintain regular postings.



Ruby-throated Bulbuls (*Rubigula dispar*) on sale in Indonesia
Photo: S. Shukhova



Sangkar White-eyes (*Zosterops melanurus*) on sale in Sumatra, Indonesia
Photo: S. Shukhova

T-041 Set up ASTSG newsletter (online) and publish first issue in 2021 (at least four newsletters over 4-year period).

T-042 Improve and expand the reach of the ASTSG website.

T-043 Increase communication capacity of ASTSG in English and regional languages.

T-044 Establish clear communications to distinguish between wild-caught and captive trade in songbirds.

T-045 Translate IUCN ASTSG action plan implementation at national, regional and local levels.

Activities and results 2021

ASSESS

Red List

T-007 (KSR 6)

Number of global Red List reassessments completed: 3

Result description: In 2021, ASTSG again worked very closely with BirdLife's Red List team on assessing species which come under its remit, discussing which species should be reviewed and encouraging its membership to participate by commenting on the forum.

Research activities

T-064 (KSR 5)

Number of scientific publications about species research that acknowledge SSC affiliation: 0

Result description: Publication due in 2022.

T-066 (KSR 5)

Number of scientific publications about species research that acknowledge SSC affiliation: 1

Result description: The COVID-19 situation has had some delaying effect on completion of this target. With data collected, the preparation of the paper is underway, and publication is expected during 2022.

T-073 (KSR 5)

Number of scientific publications about species research that acknowledge SSC affiliation: 1

Result description: Paper published: Chng, S.C.L., et al. (2021). *Smuggled For Its Song-The Trade in Malaysia's Oriental Magpie-robins*. Petaling Jaya, Selangor, Malaysia: TRAFFIC Southeast Asia Regional Office.

PLAN

Planning

T-010 (KSR 8)

Number of conservation plans/strategies developed: 0

Result description: Planning for creating a species management plan for Black-winged Myna in Baluran National Park is in the early stages.

ACT

Conservation actions

T-002 (KSR 10)

Number of species with increased or prevented decrease in population or range size, as a result of conservation actions: 1

Result description: This programme is developing well in the form of a European Aquarium and Zoo Association (EAZA) European Ex situ Programme (EEP), in which two breeding centres in Java participate. At the end of 2021, the programme comprised some 130 birds of which three quarters were held in Europe.

T-005 (KSR 10)

Number of species with increased or prevented decrease in population or range size, as a result of conservation actions: 1

Result description: Cikananga Conservation Breeding Centre (CCBC) has quite a long history of working with this species and holds a reasonably large population. Taman Safari in Bogor also works with it and is conducting a trial release within the park grounds which has met with a good level of success.

T-022 (KSR 10)

Number of species with increased or prevented decrease in population or range size, as a result of conservation actions: 1

Result description: Two breeding centres in Java are working with this species: Cikananga Conservation Breeding Centre (CCBC) and Prigen Conservation Breeding Ark (PCBA). They hold small numbers but both were successful in rearing young in 2021. This is encouraging as it is a challenging species to manage in captivity.

T-023 (KSR 10)

Number of species with increased or prevented decrease in population or range size, as a result of conservation actions: 1

Result description: Only two institutions are working with this species: the principal one is Jurong Bird Park in Singapore and, more recently, the Prigen Conservation Breeding Ark (PCBA) in Java has started with it. Each only holds a small number of birds, less than 30 in total.

T-024 (KSR 10)

Number of species with increased or prevented decrease in population or range size, as a result of conservation actions: 1

Result description: The Prigen Conservation Breeding Ark (PCBA), in East Java, is taking the lead in this programme and at the end of 2021 held 42 Javan Pied Starlings, of which 10 had been bred at the facility in 2021.

T-025 (KSR 10)

Number of species with increased or prevented decrease in population or range size, as a result of conservation actions: 1

Result description: This is still a developing programme with two centres in Indonesia holding a small number of this species. The first successful breeding at one of these was recorded in 2021.

T-026 (KSR 10)

Number of species with increased or prevented decrease in population or range size, as a result of conservation actions: 1

Result description: The situation with COVID-19 precluded visits that some of ASTSG members might have made in 2021 to assist directly in supporting the conservation of Bali Myna. However, indirect support continued including writing up research results.

T-027 (KSR 10)

Number of species with increased or prevented decrease in population or range size, as a result of conservation actions: 1

Result description: A small breeding unit has been constructed on the Island of Simeulue; a breeding stock of some five pairs has been acquired and successful reproduction is underway. Ecosystem Impact Foundation (EI) are the on-island NGO carrying out this programme.

NETWORK

Capacity building

T-039 (KSR 2)

Number of online presentations delivered: 1

Result description: ASTSG started a series of quarterly online webinars dedicated to the Asian Songbird Crisis and its tackling. This series is open to ASTSG members and partners only and aims to give a platform for knowledge-sharing and discussion between the members. It started with a webinar on Barusan Shama conservation conducted on 29 October 2021. The recordings of that and following sessions are available on the ASTSG website: https://www.asiansongbirdtradesg.com/education-resources.

COMMUNICATE

Communication

T-038 (KSR 13)

Number of digital communication outputs developed in relation to specific taxonomic groups: 1

Result description: The ASTSG's website (https://www.asiansongbirdtradesg.com/) was updated with the latest publications written by ASTSG members. In addition, a separate page for ASTSG publications was created (https://www.asiansongbirdtradesg.com/astsg-publications). It contains all ASTSG key publications including the newsletter and *The IUCN SSC Asian Songbird Trade Specialist Group. A brief report on its first four years: 2017-2020*. The website requires further updates and continuous maintenance to keep it active and current.

T-040 (KSR 13)

Number of digital communication outputs developed in relation to specific taxonomic groups: 2

Result description: We established a presence on three social media platforms: Facebook (https://www.facebook.com/IUCN.Songbirds), Twitter (https://twitter.com/IUCN_Songbirds) and Instagram (https://www.instagram.com/iucn_songbirds/). Social media content includes sharing articles and scientific papers related to the Asian songbird crisis and its tackling, project updates and publications by the ASTSG's members, seizure data, interesting facts and profiles of priority taxa, and art featuring Asian songbird species. On average, content is posted three times a week to keep ASTSG followers engaged. Monthly analytics allows shaping the content and adjusting posting times to reach and engage more followers.

T-041 (KSR 13)

Number of digital communication outputs developed in relation to specific taxonomic groups: 2

Result description: In order to feature the ASTSG's work in a more systematic and frequent manner, the ASTSG's core team decided to publish a biannual newsletter called *Dawn Chorus*. The first issue was published in September 2021 (https://www.asiansongbirdtradesg.com/astsg-publications). The inaugural issue set the guideline, structure and design format for future issues.

T-042 (KSR 13)

Number of digital communication outputs developed in relation to specific taxonomic groups: 1

Result description: The ASTSG's website (https://www.asiansongbirdtradesg.com/) was updated with the latest publications, information on the ASTSG sub-themes, priority species list (currently priority taxa list), resources, and a new fresh look. In addition, separate pages for news and ASTSG publications, such as a conservation strategy, report and newsletters, were created. Monthly analytics conducted from February 2021 onwards helps to understand website performance and mitigate any shortcomings.

T-043 (KSR 13)

Number of digital communication outputs developed in relation to specific taxonomic groups: 1

Result description: In January 2021, a Communications Coordinator was appointed for the IUCN SSC Asian Songbird Trade Specialist Group (ASTSG). The main focus for 2021 was on establishing a social media presence, creating a strategy for outward-facing communications, refining it and connecting with members. The current communications strategy is established and running in English. Expanding communication capacity to other regional languages will be beneficial for engaging members, various stakeholders and the general public.

Acknowledgements

We would like to acknowledge Mandai Nature (previously Wildlife Reserves Singapore) for hosting the Asian Songbird Trade Specialist Group and for the financial support it provides. The chair is grateful to Koln Zoo in the way it supports him. Thanks is also due to the European Aquarium and Zoo Association (EAZA) for providing the funding from its Silent Forest Campaign which has enabled so many of its priority projects to be carried out and is grateful to the Silent Forest Group of EAZA for continuing to support projects with additional funding and in other ways. Along with the Chair and Vice-chairs, ASTSG has two Specialist Group Coordinators (Jessica Lee of Mandai Nature, Singapore and Serene Chang of TRAFFIC International – Southeast Asia, Malaysia) and a Communications Coordinator (Sofiya Shukhova); which together comprise its core group that acts as a steering committee. Special mention should be made of these three individuals due to the considerable contribution they make towards the smooth running of ASTSG, and the important communications role played, all of which enabling it to be far more productive than it otherwise would be.

Summary of achievements

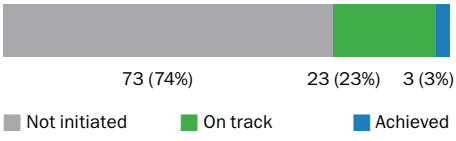
Total number of targets 2021–2025: 99

Geographic regions: 30 Global, 69 Asia

Actions during 2021:

Assess:	4 (KSR 5, 6)
Plan:	1 (KSR 8)
Act:	8 (KSR 10)
Network:	1 (KSR 2)
Communicate:	5 (KSR 13)

Overall achievement 2021–2025:



2021 Report

IUCN SSC Bustard Specialist Group





CO-CHAIR
Mimi Kessler
Eurasian Bustard Alliance, US

CO-CHAIR
Nigel Collar
BirdLife Global Office, The David Attenborough Building, Cambridge, UK

RED LIST AUTHORITY COORDINATOR
BirdLife International

NUMBER OF MEMBERS
47

SOCIAL MEDIA AND WEBSITE
Website: https://bustards.org

Mission statement

The IUCN SSC Bustard Specialist Group (BSG) actively promotes bustard research and conservation, develops conservation action plans for the most threatened species, and encourages information exchange and cooperation amongst bustard specialists and with other relevant organisations to enhance conservation of bustards and their habitats worldwide.

Projected impact 2021–2025

In the 2021–2025 quadrennium, the Bustard Specialist Group (BSG) plans to expand membership of the group to include motivated, committed bustard researchers and conservationists from all taxa and range areas, who share the vision of maintaining healthy and sustainable populations of bustards. The BSG will improve communication and cooperation between bustard experts and conservationists across political and language divides. The BSG will contribute proactively to Red List assessments of all bustard species and engage in continued research to clarify status and threats to bustard species, including cross-border counts and electronic tracking. The BSG will develop and provide guidance regarding action plans for bustards with a focus on species and populations threatened with extinction and provide consultation and advice to governments and conservation organisations to inform their programmes of action. We will develop guidelines and programmes to address bustard species declines, with a focus on species under threat of extinction and threats facing multiple bustard species, such as poaching and unsustainable hunting, agricultural intensification, dog predation and powerline collisions. The BSG will assist with and implement habitat protection and restoration, captive breeding and reintroduction/reinforcement measures for threatened bustard species as appropriate. The BSG will increase awareness and concern among the public regarding bustard conservation and promote conservation management interventions for declining populations of bustards to relevant authorities and public forums.

Targets 2021–2025

ASSESS

T-005 Assess status, habitat requirements and threats to Bengal Florican (*Houbaropsis bengalensis*) across Brahmaputra floodplain, including use of Global System for Mobile Communications (GSM) tracking.

T-006 Undertake Bengal Florican monitoring in Assam.

T-007 Develop community monitoring for Great Indian Bustard (*Ardeotis nigriceps*) and Lesser Florican (*Sypheotides indicus*) in Rajasthan.

T-022 Evaluate Kori Bustard (*Ardeotis kori*) population status and range shift investigation, search for priority habitat.

T-023 Identify breeding and wintering critical areas for Little Bustard (*Tetrax tetrax*) in Spain.

T-030 Survey Bengal Florican population across all Nepal.

T-033 Research impact of captive breeding and hunting on Houbara populations.

T-034 Survey wintering areas of Eastern European Great Bustards (*Otis tarda*) and assess possibility for protection.

T-035 Identify suitable habitats of wintering population of Little Bustard in Iran and propose their conservation and protection.

T-037 Conduct threat assessment for Bengal Floricans at Koshi Tappu Reserve with focus on powerlines.

T-039 Conduct satellite telemetry of Lesser Florican.

T-043 Carry out range level population and habitat monitoring for Lesser Florican and Great Indian Bustard.

T-044 Carry out telemetry of Lesser Florican and Great Indian Bustard to learn life history, movement, seasonal habitat use and behaviour.

T-045 Assess bustard mortality due to powerlines and effectiveness of diverters for mitigation.



A flock of Critically Endangered Great Indian Bustards (*Ardeotis nigriceps*)
Photo: Gobind Sagar Bhardwaj

T-046 Assess population of predators of Great Indian Bustard and their impact.

T-047 Conduct genetic studies of Great Indian Bustard to inform management practices.

T-048 Conduct genetic analysis of wintering Eastern European Great Bustards.

T-050 Add Great Bustard to official list of British birds, methods to include publishing research paper.

T-053 Assess Asian Houbara (*Chlamydotis macqueenii*) demography and population trends in the Bukhara region, Uzbekistan.

T-056 Conduct GPS/GSM telemetry study of hand-reared Great Bustard females in Germany.

T-057 Monitor Lesser Florican in Saurashtra region of Gujarat State, India.

T-058 Conduct awareness programmes for sustainable agriculture and grassland protection near Lesser Florican sites.

T-059 Survey population demography and wintering areas of Eastern Great Bustard population and assess potential threats in China.

T-060 Study population genomics of Great Bustard for further evidence as to the status of the two subspecies of Great Bustard.

PLAN

T-008 Complete an Action Plan for Great Bustards in Asia, for submission to the 2023 Conference of Parties to the Convention on Migratory Species.

T-009 Conduct sensitivity mapping for Great Indian Bustard in Rajasthan to inform energy investment.

T-010 Identify grassland corridors and key threats to Bengal Florican in Brahmaputra Floodplain.

T-019 Develop best practice guidelines for the mitigation of powerlines to reduce bustard collisions.

T-024 Reclassify Little Bustard to 'Endangered' in Spain; develop national conservation strategy for the species.

T-028 Publish satellite tracking data for Ludwig's Bustard (*Neotis ludwigii*) to share information about the species' ecology and vulnerability to powerline collisions.

T-032 Develop Kori Bustard conservation action plan in Tanzania.

T-036 Update Action Plan for Bengal Florican in Nepal.

ACT

T-011 Continue to develop conservation breeding for Great Indian Bustard.

T-012 Pursue implementation of measures to reduce powerline collisions of Great Indian Bustards.

T-013 Develop community activities for Great Indian Bustard and Lesser Florican in Rajasthan and other important areas.

T-014 Conduct habitat restoration and protection, and reserve creation for Great Indian Bustard and Lesser Florican in Rajasthan and other important areas.

T-015 Conduct awareness programmes for sustainable agriculture near Lesser Florican sites.

T-016 Conduct community support and awareness programmes at Bengal Florican habitat in Assam.

T-017 Carry out habitat restoration and improvement (via organic cultivation) for Bengal Florican in Assam.

T-018 Conduct community education and awareness programmes, and citizen science programmes, relating to Bengal Florican in Brahmaputra Floodplain.

T-026 Implement community outreach and economic development programmes for Great Indian Bustard and Lesser Florican to include habitat improvement and awareness.

T-027 Create economic development programmes focusing on handicrafts in Great Bustard areas in Iran.

T-038 Conduct powerline marking and support of public litigation for powerline marking.

T-040 Carry out conservation breeding for Lesser Florican.

T-041 Implement predator management for Great Indian Bustard.

T-042 Conduct capacity building and outreach to stakeholders and collaborators for Great Indian Bustard protection and habitat.

T-049 Build breeding centre for Bengal Florican, improve husbandry protocols, start captive breeding, increase captive breeding population, conduct genetic study for captive breeding management.

T-051 Increase the area of land under the management of the Great Bustard Group.

T-052 Continue and improve captive breeding programme of Great Bustard with intention of eventually restoring populations to other regions of England.

T-054 Further improve Great Bustard habitats in the last three breeding areas in Germany.

T-055 Reintroduce/restore the extinct Great Bustard population in the Zerbster Land Special Protection Area (Germany).



Great Indian Bustard (*Ardeotis nigriceps*) found in traditional crop fields
Photo: Vipin Fulzele

T-061 Conduct community survey and improve the community awareness to protect Great Bustard and its sympatric vulnerable species in China.

NETWORK

T-001 Increase membership of BSG to include experts on additional bustard taxa and range areas.

T-002 Provide a weekly forum for BSG members to share research findings and news (BSG Secretariat, with input from Membership).

T-003 Extend a multilingual website to facilitate communication between bustard experts in North Eurasia.

T-025 Organise group (virtual) conference for members of the BSG.

T-031 Encourage new researchers/students to take up study of Bengal Florican.

COMMUNICATE

T-020 Set up *Bustard Studies* as an open-access online journal.

T-029 Promote sustainable management and hunting of Houbara.

Activities and results 2021

ASSESS

Red List

T-053 (KSR 6)

Number of new national Red List assessments published: 0

Result description: A census of Asian Houbara was completed in 2021 and will be repeated in 2022 to assess population trends in Bukhara, Uzbekistan.

Research activities

T-007 (KSR 5)

Number of trained groups on community monitoring: 2

Result description: Selected youth from Great Indian Bustard and Lesser Florican sites were trained and involved in bird and habitat monitoring.

T-023 (KSR 5)

Number of scientific publications about species research that acknowledge SSC affiliation: 0

Result description: This is done in practice, but not yet published. It will be delivered to the Spanish Ministry of Environment by late March and hopefully submitted to a scientific journal in 2022.

T-030 (KSR 5)

Number of research projects completed or supported by SSC members per taxonomic group and region: 1

Result description: Bird Conservation Nepal (BirdLife in Nepal) has completed a survey on Bengal Florican population and results are yet to be published. Himalayan Nature has planned some education and awareness programmes in east Nepal, at Koshi Tappu Wildlife Reserve.

T-033 (KSR 5)

Number of research projects completed or supported by SSC members per taxonomic group and region: 1

Result description: Research into the performance of released captive-bred Asian Houbara and migration dynamics is ongoing.

T-034 (KSR 5)

Number of research projects completed or supported by SSC members per taxonomic group and region: 0

Result description: Wintering areas of Eastern European Great Bustards in the Crimea are currently being investigated.

T-035 (KSR 5)

Number of research projects completed or supported by SSC members per taxonomic group and region: 0

Result description: We have collected the Little Bustard distribution records and after preparing environmental data we will start habitat suitability modelling.

T-037 (KSR 5)

Number of research projects completed or supported by SSC members per taxonomic group and region: 0

Result description: A researcher from Tribhuvan University is being identified to complete threat assessment for Bengal Floricans; this will be done by end of March with studies following in April.

T-039 (KSR 5)

Number of research projects completed or supported by SSC members per taxonomic group and region: 1

Result description: The Corbett Foundation (TCF) has provided technical expertise to Gujarat Forest Department in putting satellite tags successfully on six Lesser Floricans in Gujarat. One male and one female Lesser Florican were released in Blackbuck National Park in September 2020 and four males were tagged in Kutch. The tagged female died after collision with a power line in Maharashtra in July 2021. A paper has been published on these findings in the *Journal of Bombay Natural History Society* (http://www.bnhsjournal.in/index.php/bnhs/article/view/167575).

T-048 (KSR 5)

Number of research projects completed or supported by SSC members per taxonomic group and region: 0

Result description: We collected material (bustard feathers) of Eastern European Great Bustard in the nesting and wintering





Male Bengal Florican (*Houbaropsis bengalensis*) rescued in Cambodia in 2019
Photo: ACCB/Pau Puigcerver

First record of Bengal Florican (*Houbaropsis bengalensis*) hatched in captivity, on 09-07-2019
Photo: Angkor Centre for Conservation of Biodiversity ACCB/Pau Puigcerver

areas. We are looking for funding to continue research.

T-050 (KSR 5)

Number of scientific publications about species research that acknowledge SSC affiliation: 0

Result description: Although the population of Great Bustard is growing through natural breeding, the percentage of the population which is made from hand reared birds is still too high for a formal application to be admitted to the British Birds list. An application may be possible in three years or so.

T-056 (KSR 5)

Number of research projects completed or supported by SSC members per taxonomic group and region: 100

Result description: In 2019, we started a new tracking system of hand-reared Great Bustard females: solar powered GPS/GSM tags on necklace collars. In 2019, 12 females were marked, in 2020 five, and in 2021 ten. Survival was better than expected, and at the end of 2021 at least five birds from the first year were still alive and sending. Altogether, the data set comprises ca. 1.2 million locations, so far. First analyses focused mainly on Great Bustard vs wind farm interactions in order to avoid new wind farms on the flyways between the three remaining Great Bustard areas in Germany.

T-059 (KSR 5)

Number of research projects completed or supported by SSC members per taxonomic group and region: 90

Result description: Eastern Great Bustard (*Otis tarda dybowskii*) was once widely distributed in 19 provinces and municipalities in China. However, due to the destruction and loss of habitat caused by human disturbance, its habitat is getting worse and distribution range is shrinking. Despite research in the past there is still a lack of comprehensive understanding and analysis of its distribution, which is not conducive to the determination of key protected areas and the scientific formulation of protection countermeasures. This study is based on field surveys, combined with literature data and network reports of the birds over the past 20 years; according to the range of activities, we collected the distribution data and analysed the distribution of breeding sites, wintering sites and stopover sites. The result shows *Otis tarda dybowskii* is only distributed in 14 provinces and municipalities such as Inner Mongolia, Henan, Hebei, Shaanxi and Shanxi; among them, 70.91% are distributed in Shaanxi Province, Henan Province and Inner Mongolia. There are important breeding sites for *Otis tarda dybowskii* including Tumuji National Nature Reserve, Huihe National Nature Reserve and Gaogeshitai Hanwula National Nature Reserve in Inner Mongolia; 14.72% of breeding sites are outside reserves. The wintering sites are mainly distributed in the Yellow River Wetland at the junction of Shaanxi, Shanxi and Henan, the National Nature Reserve of the Yellow River Wetland for Birds in Xinxiang, Henan, Cangzhou and Baiyangdian, Hebei. The middle and lower reaches of the Yellow River are also the southernmost extension of the wintering area. Tumuji National Nature Reserve in Inner Mongolia and Mingshui National Nature Reserve in Heilongjiang also have relatively stable wintering records, and it partially exhibits migratory behaviour. The distribution of stopover sites is relatively scattered, such as Wuliangsuhai Nature Reserve, Gaogestai Hanwula National Nature Reserve, Huihe National Nature Reserve in Inner Mongolia, Momoge National Nature Reserve in Jilin, Shandian River National Wetland Park, Cangzhou in Hebei, Yeya Lack in Yanqing District of Beijing, and Qingdianwa Wetland in Jixian County of Tianjin. We believe that we should strengthen the protection of these important habitats and control potential risks and raise public awareness of protection to reduce interference and improve their survival rate. Through integrating the distribution data of the past 20 years, we have a more comprehensive understanding of the distribution of the Eastern Great Bustard subspecies and the threats it currently faces, which provides a scientific basis for the formulation and implementation of protection countermeasures.

T-060 (KSR 5)

Number of research projects completed or supported by SSC members per taxonomic group and region: 50

Result description: This sampling collection and data analysis of Great Bustard is still ongoing. We are working with the members of BSG. This year we will ensure it goes forward continuously.

PLAN

Planning

T-008 (KSR 8)

Number of plans invited/endorsed by national governments/conservation authorities: 1

Result description: We have received contributor reviews of the draft Action Plan for Great Bustards in Asia, and now must incorporate them into the document.

T-009 (KSR 8)

Number of conservation plans/strategies developed: 2

Result description: Mapping was completed by Bombay Natural History Society (BNHS) for Central Asian Flyway planning of Great Indian Bustard in Rajasthan; mapping was



Asian Houbara Bustard
(*Chlamydotis macqueenii*)
Photo: Gobind Sagar Bhardwaj



Puppet feeding Great Bustard
(*Otis tarda*) chicks
Photo: Great Bustard Group

also completed by a joint group for the International Finance Corporation (IFC).

T-010 (KSR 8)

Number of technical documents to support the development of conservation plans/ strategies: 1

Result description: The report on grassland corridors is ready and has been submitted to BirdLife.

T-019 (KSR 8)

Number of technical documents to support the development of conservation plans/ strategies: 1

Result description: The manuscript is under its second revision.

T-024 (KSR 8)

Number of Assess to Plan (A2P) species assessments completed: 1

Result description: This passed through the Fauna and Flora Committee of the Spanish Ministry of Environment and is soon to be published as a legal decree.

T-028 (KSR 8)

Number of technical documents to support the development of conservation plans/ strategies: 0

Result description: Work was put on hold the past six months due to maternity leave/ change of job for the main collaborators.

T-036 (KSR 8)

Number of conservation plans/strategies updated: 0

Result description: A draft is prepared and being consulted on with in-country experts.

ACT

Conservation actions

T-014 (KSR 10)

Number of areas under management for the species or group of species: 2

Result description: We conducted pilot work on habitat restoration at one site each for Great Indian Bustard and Lesser Florican. The process of declaring one community reserve is underway.

T-018 (KSR 10)

Number of threatened species benefiting from *in situ* conservation action: 1

Result description: The education and awareness activities under a Zoological Society of London Edge Fellowship are ongoing.

T-026 (KSR 10)

Number of threatened species benefiting from *in situ* conservation action: 2

Result description: (1) Grassland restoration work has been initiated in Kanakpar village in Kutch, Gujarat, where over 50 acres of community grazing area has been restored. The annual production during good monsoon is about 30 tonnes which is stored and used for village livestock to reduce free grazing pressure on the surrounding natural grasslands/bustard habitat. (2) Around 10 farmers were involved in practicing organic/pesticide-free farming in the bustard landscape; 7,000 kg of groundnut was cultivated without any pesticide and sold within one month. (3) Awareness was raised in more than 30 schools in the eco-sensitive area of Kutch Bustard Sanctuary.

T-038 (KSR 10)

Number of actions addressing major drivers/emerging threats of species or population loss: 2

Result description: TCF has installed around 800 bird-diverters on two powerlines (~3 km). In total, four types of diverters have been installed on 11 kV and 66 kV powerlines, passing through important bird habitats in Kutch, Gujarat. The method suggested by Wildlife Institute of India (WII) and international agencies has been followed for the scientific installation to make it more effective. The TCF team is conducting a scientific study to check the impact of such bird-diverters on bird mortality.

T-049 (KSR 10)

Number of captive breeding facilities built and operative: 0

Result description: The breeding facility of Bengal Florican is completed. Construction of an adequate quarantine facility will be completed in 2022.

T-051 (KSR 10)

Number of areas under management for the species or group of species: 1

Result description: The first targeted government-funded Great Bustard agri-environment schemes have been approved (12 hectares) and will be in place in spring 2022. Further schemes are planned.

T-052 (KSR 10)

Number of threatened species benefiting from *ex situ* conservation action: 1

Result description: No fertile eggs of Great Bustard have been produced. An additional facility has been constructed and is in the process of being populated. Changes have been made to the management of the other two captive breeding populations.

T-054 (KSR 10)

Number of areas under management for the species or group of species: 70

Result description: Havelland region: After one year without staff, there is now a 0.5 job position continuing the coordination of habitat management of Great Bustard on a low level (formerly three employees). Belzig region: Business as usual: agri-environmental schemes financed by the state of Brandenburg (like in Havelland) are coordinated by the local staff of two persons. A vegetation study from 2021 is dealing with the effects of low-level fertilisation. Fiener Bruch region: Ten years after elaboration of a management plan for the Brandenburg part, there is still no staff nor money for management available. In the western part (state of Saxony-Anhalt), implementation of agri-environment schemes is organised to some extent by the Great Bustard NGO; the respective contract with the regional government (state of Saxony-Anhalt; cf. https://www.grosstrappe.org/eler-projekt-fiener-bruch/) was updated and continued in 2021.

T-055 (KSR 10)

Number of species with increased or prevented decrease in population or range size, as a result of conservation actions: 100

Result description: After five years of preparations – including check of IUCN and MoU (Bonn Convention) reintroduction criteria, a feasibility study (https://www.grosstrappe.org/wp-content/uploads/2017/02/PDF_Machbarkeitsstudie-Zerbster-Land_28_06_19.pdf), public relations work among the local population and the farmers, etc. – a fenced release site of 15 ha was established. The first agri-environmental measures were started in 2020 and continued in 2021. In 2022 we are planning to release the first hand-reared Great Bustards from our captive rearing programme and to start the 'real' reintroduction there. After losing nearly 30 former Great Bustard sites in Germany since ca. 1970, and 30 years of management of the last three areas, this is the first re-establishment of a former Great Bustard site in Germany (cf. also https://www.grosstrappe.org/eler-projekt-fiener-bruch/).

Synergy

T-013 (KSR 10)

Number of community activities designed and implemented: Community activities designed and implemented.

Result description: Programmes were developed for Great Indian Bustard and Lesser Florican on nature education grassland development.

T-015 (KSR 11)

Number of rural communities involved in species conservation programmes and sustainable use practices: 0

Result description: We conducted a few sensitisation programmes near Lesser Florican sites but systematic work on sustainable agriculture has not yet been initiated.

T-061 (KSR 11)

Number of rural communities involved in species conservation programmes and sustainable use practices: 100

Result description: The Great Bustard returned to China for overwintering for six continuous years, and the surprising news is that three individuals chose wintering sites very close to Beijing (see https://app.gmdaily.cn/as/opened/n/72ae44bd-332349fa8638c3ae8dc8ccd8). Through the news reported by *Guangming Daily*, photos and video supported strongly that power lines, plastic bags/trash and stray dogs are posing threats to the survival of Great Bustards. Fortunately, volunteers, local communities and conservation researchers are working together to protect Great Bustard. In the beginning, only three individuals wintered in Tongzhou, Beijing, however, another individual joined the population by mid-December.

Technical advice

T-029 (KSR 11)

Number of technical documents provided to support conservation actions: 1

Result description: Peer-reviewed papers were published emphasising the need for regulation of hunting (Dolman, P.M., et al. (2021). 'Sustainable hunting and the conservation of the threatened houbara bustards'. *Journal for Nature Conservation* 61: 126000. https://doi.org/10.1016/j.jnc.2021.126000) and the dangers current large-scale unregulated and opaque programmes of captive breeding and release pose to African Houbara (*Chlamydotis undulata*) and Asian Houbara (Dolman, P.M., et al. (2021). 'Captive breeding and the conservation of the threatened Houbara bustards' *Endangered Species Research* 46:161–173. https://doi.org/10.3354/esr01151). This will be followed by further advocacy.

NETWORK

Membership

T-001 (KSR 2)

Number of SSC members recruited: 4

Result description: In 2021, we added new members to the group and are currently further expanding membership in Central Europe and the Caucasus. We are actively searching for members in Africa and Australia.

T-025 (KSR 2)

Awareness of BSG members on projects related to bustards: achieved

Result description: A virtual conference was held in 2021.

Synergy

T-003 (KSR 2)

Generation of Eurasian Bustard Alliance: achieved

Result description: The site is completed. However, it will require volunteer translators to continue to provide new material in the multiple site languages as we update the site over time.

COMMUNICATE

Communication

T-020 (KSR 12)

Number of Species e-bulletin, Save Our Species newsletter, SSC Groups' newsletter editions produced: 0

Result description: A draft template for main articles was prepared.

Acknowledgements

The Bustard Specialist Group thanks the Smithsonian National Zoological Park Conservation Biology Institute for hosting the group's Secretary, Sara Hallager, who provides much appreciated support for the group.

Summary of achievements

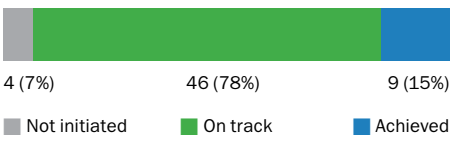
Total number of targets 2021–2025: 59

Geographic regions: 8 Global, 2 Africa, 41 Asia, 10 Europe

Actions during 2021:

Assess:	14 (KSR 5, 6)
Plan:	7 (KSR 8)
Act:	13 (KSR 10, 11)
Network:	3 (KSR 2)
Communicate:	1 (KSR 12)

Overall achievement 2021–2025:



IUCN SSC Crane Specialist Group



SOCIAL MEDIA AND WEBSITE
Website: https://savingcranes.org/crane-specialist-group

CHAIR
Kerryn Morrison
International Crane Foundation/ Endangered Wildlife Trust, Johannesburg, Gauteng, South Africa

RED LIST AUTHORITY COORDINATOR
BirdLife International

NUMBER OF MEMBERS
65

Mission statement

The mission of the IUCN SSC Crane Specialist Group is to promote the study of cranes and their threats, develop and disseminate solutions to those threats, and enhance conservation of cranes and their habitats worldwide.

Projected impact 2021–2025

Secure all 15 of the world's cranes and the ecosystems, watersheds and flyways on which they depend. Reduce or halt the decline of the 10 threatened species and maintain stable to growing populations of the other five.

Targets 2021–2025

ASSESS

T-003 Estimate impact of poisoning on threatened crane species and advocate for reduced poisoning at hot spots by 2025.

T-010 Understand the status, distribution and threats to Black Crowned Cranes (*Balearica pavonina*) across their range by 2023.

T-011 Update and complete Red List and Green Status assessments for at least two crane species by 2023.

PLAN

T-006 Develop and implement integrated flyway level Conservation Action Plans for Siberian Crane (*Leucogeranus leucogeranus*), Red-crowned Crane (*Grus japonensis*), White-naped Crane (*Grus vipio*), Hooded Crane (*Grus monacha*) and Black-necked Crane (*Grus nigricollis*) by 2025.

T-007 Develop a user-friendly resource for *Cranes and Agriculture: A Global Guide for Sharing the Landscape* by 2022.

T-012 Develop at least two National Action Plans for cranes in Africa by 2025.

T-015 Review and revise the Crane Conservation Strategy in 2024 for the period 2025–2030.

ACT

T-001 Implement the Single Species Action Plan for Grey Crowned Cranes (*Balearica regulorum*) by 2025.

T-002 Implement the Conservation Plan for the Eastern Population of the Siberian Crane by 2025.

T-004 Identify and mitigate factors contributing to the decline of the western populations of Red-crowned and White-naped Cranes by 2025.

T-008 Secure or upgrade level of legal protection for three or more crane sites by 2025.

T-014 Implement the Crane Conservation Strategy published in 2019.

NETWORK

T-005 Complete four field training courses by 2025.

T-009 Form the Middle East Crane Working Group and develop strategies for reducing threats including hunting by 2022.

T-013 Establish working groups within the Crane Specialist Group to increase the collaboration between members around hunting, poisoning, powerline collisions, wildlife health and research by 2021.

T-017 Establish one formal partnership that will provide financial support to the Specialist Group by 2025.

COMMUNICATE

T-016 Distribute a newsletter to the Crane Specialist Group membership every second year, updating the membership on the progress made towards achieving the Crane Conservation Strategy.



Rice fields protected to help cranes during natural food shortage at Poyang Lake
Photo: Jin Jiefeng

Activities and results 2021

ASSESS

Research activities

T-003 (KSR 5)

Number of research projects completed or supported by SSC members per taxonomic group and region: 4

Result description: Although no research projects have begun in Africa, valuable data are being logged to record incidences of crane poisoning, particularly in key hotspots such as East Africa (Kenya and Uganda), where perceived risk of crop depredation may be driving increasing occurrence of Grey Crowned Crane poisoning on agricultural lands. Since October 2020, we have collaborated with the University of Science at Ho Chi Minh City, Viet Nam, to conduct research to assess the problems associated with harmful agricultural chemicals at two national parks in the Mekong Delta. We conducted household interviews to collect data about usage, people's understanding of proper uses, environmental impacts, occupational health and safety, and integrated pest management. We also used remote sensing data and GIS techniques to assess potential exposures of waterbirds to agricultural chemicals in the buffer zones of national parks. Incidences of poisoning continue for Eurasian Cranes (*Grus grus*) in Central Asia and data are being recorded on incidences and types of poisoning to guide future efforts.

T-010 (KSR 5)

Number of research projects completed or supported by SSC members per taxonomic group and region: 4

Result description: Black Crowned Crane distribution, threat and population research projects have continued in Ethiopia, South Sudan, Chad and Senegal. Surveys of the cross-border ranges of Black Crowned Cranes, and the threats they face (including international legal and illegal trade), have been planned in the transboundary regions of Senegal and Guinea (Conakry), Guinea Bissau, Mali and Mauritania.

T-011 (KSR 6)

Number of species that have been assessed through the different tools: 2

Result description: The Green Status assessment of the Blue Crane (*Anthropoides paradiseus*) was last assessed on 31 October 2021, where the species was found to be MD (Moderately Depleted). The Red List assessment of the Red-crowned Crane was last assessed on 27 July 2021, where it was found to be VU (Vulnerable; previously EN/Endangered).

PLAN

Planning

T-006 (KSR 8)

Number of conservation plans/strategies developed: 0

Result description: With many important changes in crane behaviour, habitat, threats, and opportunities for more significant impact, in 2023–2024 we will do a substantial re-look at the situation across the East Asia Flyway. This will include developing new strategic plans for securing Siberian Cranes, White-naped Cranes and Red-crowned Cranes. The Chinese Government is developing a national Crane Conservation Strategy and Action Plan for White-naped Cranes that will provide guidance to national, provincial and local stakeholders for crane research and conservation in the future decade. They plan to upgrade the White-naped Crane to a national first-class protected species.

Policy

T-007 (KSR 9)

Number of documents provided to support/guide policy making: 0

Result description: Funding has generously been provided by the IUCN SSC in 2022 to develop a shorter, more user-friendly version of *Cranes and Agriculture*.

Capacity building for White-naped Crane project in Mongolia
Photo: Nyambayar Batbayar



T-012 (KSR 9)

Number of policies where SSC members provided technical input: 0

Result description: The Uganda National Action Plan was concluded and launched in 2020 and is being implemented, and a National Action Plan for Kenya is in preparation.

ACT

Conservation actions

T-001 (KSR 10)

Number of actions addressing major drivers/emerging threats of species or population loss: 10

Result description: Good progress continues to be made on the African Eurasian Migratory Waterbird Assessment's International Single Species Action Plan for Grey Crowned Cranes. Ongoing monitoring of Grey Crowned Cranes in South Africa, Zambia, Uganda, Kenya and Rwanda provides us with information on the trends in the population. In both South Africa and Rwanda, stable to increasing trends have been recorded. We also now have baseline breeding productivity data from South Africa, Uganda, Rwanda and Kenya, against which we can monitor trends. Crane ringing efforts in Kenya and Rwanda and satellite tracking of cranes in Rwanda are providing us with crucial information on the movement patterns of the species and the threats they face. Poisoning, powerlines, illegal and legal trade, invasive species, disturbance, and the encroachment of agriculture into their wetland breeding habitats are being addressed in all of the critical range states for Grey Crowned Cranes. This work is happening through integrated community-based conservation efforts and direct threat mitigation.

T-002 (KSR 10)

Number of actions addressing major drivers/emerging threats of species or population loss: 2

Result description: Through a 10-year Saving Wildlife grant from the Disney Conservation Fund, we are making significant progress towards conservation goals for Siberian Cranes. Adaptive management is practiced using Miradi software developed by the Conservation Measures Partnership. Synchronised surveys were completed in spring, fall and winter with a revised population estimate of 5,500 Siberian Cranes counted, indicating a population increase. Changes in habitat use and foraging behaviour were documented, including the increased use of agricultural lands, with corresponding changes made in protection and management strategies. The proposal to construct an outlet dam on Poyang Lake has resurfaced, raising serious concerns on changes to the ecosystem for one of the most important wintering areas for birds in East Asia. To ensure migratory connectivity, we are working hard to promote the necessary conditions so that enough wetlands are available each year to support Siberian Cranes. Due to the project's awareness and partnership efforts, local authorities are releasing water to create suitable habitat at critical periods.

T-004 (KSR 10)

Number of actions addressing major drivers/emerging threats of species or population loss: 3

Result description: Satellite tracking identified the most important stopover area for the declining western population of White-naped Cranes near Duolun in Inner Mongolia, China. Collaborative research initiated on population trends and timing, habitat choice, and existing and potential threats was used to prioritise conservation actions for both stopover and winter areas. For the declining western population of Red-crowned Cranes, satellite imagery is being used to assess habitat change and identify potential areas for breeding and sites of local threats. Efforts are underway to protect critical habitat near the Civilian Controlled Zone in Korea where populations of Red-crowned and White-naped Cranes remain stable or slightly increasing.

T-008 (KSR 10)

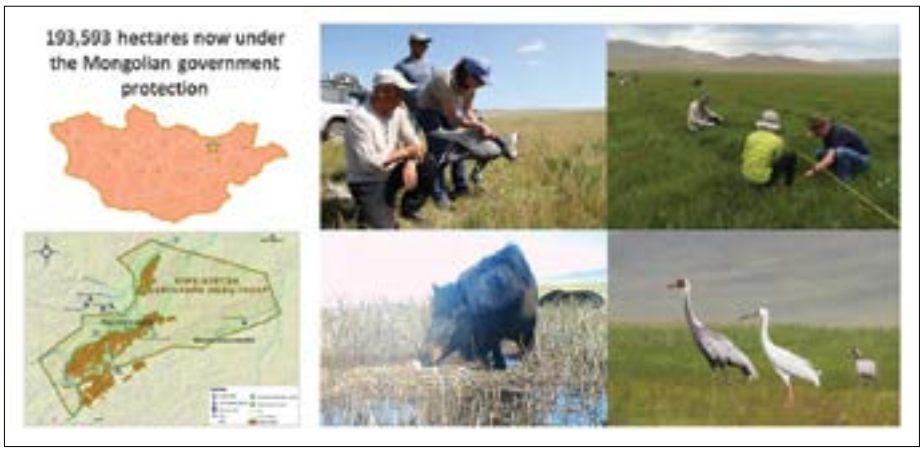
Number of areas under management for the species or group of species: 6

Result description: There are currently around 100,000 ha under consideration for improved protection in South Africa. The establishment of Liaohe National Park in China has doubled protected area (250,000 ha). The scope of Tumuji National Nature Reserve was adjusted to cover the important staging area in the south of the original reserve (289,000 ha). Agricultural land was protected for foraging Siberian Cranes including Wuxing Farm lotus ponds (increased by 700 ha) plus rice fields managed by Yugan County Forestry Bureau (230 ha). Core breeding habitat for the declining western population of White-naped Cranes in Mongolia has been protected as the Khurkh-Khuiten River Nature Reserve (193,593 ha).

T-014 (KSR 10)

Number of intervention letters addressing major drivers/emerging threats of species or population loss: 0

Result description: Although a directed approach to implement the Crane Conservation Strategy did not happen in 2021, a large number of activities are underway, and threats are being addressed by members and the broader crane network across the world.



Khurkh-Khuiten Valley designated as Nature Reserve
Photo: Nyambayar Batbayar

NETWORK

Capacity building

T-005 (KSR 2)

Number of people trained in conservation action: 6

Result description: 'Crane Custodians' (community members who safeguard breeding cranes and crane feeding and breeding sites) have been trained across East Africa to monitor Grey Crowned Cranes and record their distribution and breeding success on an online app (Survey123). Uganda field staff have also been trained in poison incident management. A combination ('hybrid') online and in-person meeting was held in Mongolia to train government officials, reserve staff, and researchers on the socio-economic aspects of engaging herding and farming communities in protected area management. Local Chinese volunteers have been trained to conduct surveys of White-naped Cranes at unprotected stopover sites.

Synergy

T-009 (KSR 1)

Number of in kind partnerships established and maintained: 0

Result description: A meeting was planned for the Middle East Crane Conservation Group as part of an international crane workshop in Estonia that had to be postponed due to COVID-19 and political unrest. The goals of the meeting were to address threats (especially hunting and poisoning) and identify conservation priorities for the region. A newsletter is being prepared to circulate to the group to capture current conservation and research activities in the region.

T-013 (KSR 1)

Number of in kind partnerships established and maintained: 4

Result description: Leads for each of the working groups have been identified and all have agreed to help establish and coordinate each of the working groups. Microsoft Teams sites were set up for each and several of the leads have already loaded background documentation to the site and approached other IUCN Crane Specialist Group members to join them.

Acknowledgements

The International Crane Foundation for hosting the IUCN Crane Specialist Group. The International Crane Foundation/ Endangered Wildlife Trust Partnership for supporting Kerryn Morrison's involvement as the Chair. The European Crane Working Group, North American Crane Working Group, Crane Working Group of Eurasia, International Red-crowned Crane Network, Black-necked Crane Network, and East Asian Crane Network, for leading species or geographic subgroups for cranes.

Summary of achievements

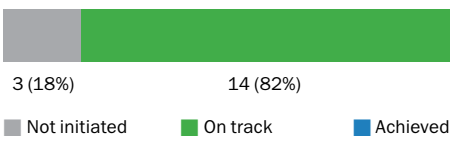
Total number of targets 2021–2025: 17

Geographic regions: 11 Global, 3 Africa, 3 Asia

Actions during 2021:

Assess: 3 (KSR 5, 6)
Plan: 3 (KSR 8, 9)
Act: 5 (KSR 10)
Network: 3 (KSR 1, 2)

Overall achievement 2021–2025:



IUCN SSC Goose Specialist Group



SOCIAL MEDIA AND WEBSITE
Facebook: Goose Specialist Group
Website: https://www.geese.org/gsg/

CHAIR
Peter Glazov
Institute of Geography, Russian Academy of Sciences, Moscow, Russia

RED LIST AUTHORITY COORDINATOR
BirdLife International

NUMBER OF MEMBERS
363

Mission statement

The Goose Specialist Group seeks to strengthen contacts between all researchers on migratory goose populations in the northern hemisphere by organising regular scientific conferences and stimulating population dynamics research on geese.

Projected impact 2021–2025

The main aim for our group is to update the information on population status of Northern Hemisphere goose populations. This includes the compilation of population counts as well as counts of juvenile production. This information is vital to understand the changes in conservation status of goose populations. Besides this main goal, we have several projects aimed at specific conservation issues regarding specific species.

Targets 2021–2025

ASSESS

T-001 Investigate whether geese flee high and far, and with aftereffects from New Year's fireworks.

T-002 Study survival, breeding behaviour and migration pattern of local breeding Greylag Geese (*Anser anser*).

T-004 Update the Global Audit of the Status and Trends of Arctic and Northern Hemisphere Goose Populations.

T-005 Provide a climate resilient network of critical sites for the Lesser White-fronted Goose (*Anser erythropus*) in Europe (LIFE LWfG CLIMATE LIFE19 NAT/LT/000898).

COMMUNICATE

T-006 Organise the Goose Specialist Group Conference in 2023.

T-007 Publish the *Goose Bulletin*.

Activities and results 2021

ASSESS

Research activities

T-001 (KSR 5)

Number of scientific publications about species research that acknowledge SSC affiliation: 0

Result description: Analysis of all 2013–2021 data (347 goose tracks) revealed that four species of geese (Barnacle Goose, *Branta leucopsis*; Greater White-fronted Goose, *Anser albifrons*; Tundra Bean Goose, *Anser serrirostris*; and Pink-footed Goose, *Anser brachyrhynchus*) responded to New Year's fireworks by flying up higher and further than on nights without fireworks. They moved to more distant roost sites, were more active at night and likely compensated for this by foraging for longer periods of time in subsequent nights.

T-002 (KSR 5)

Number of research projects completed or supported by SSC members per taxonomic group and region: 0

Result description: The goal of this project is to address the lack of knowledge of the goose species, established as a breeding bird in the 1980s by the Ministry of Agriculture and hunting organisations, as well as to monitor avian flu by cloacal sampling and blood sampling. In 2021, a total of 780 birds were colour-banded and several of these were sampled.

T-004 (KSR 5)

Number of research projects completed or supported by SSC members per taxonomic group and region: 0

Result description: The global audit of northern hemisphere goose populations (published in 2017 but based on data up to around 2015) suggested that there were between 39.0 and 39.2 million wild geese in the northern hemisphere, belonging to



The research team of Swan Goose (*Anser cygnoid*) in Mongolia
Photo: Iderbat Damba



A banded Greylag Goose (*Anser anser*)
Photo: Helmut Kruckenberg

68 populations of 15 species at that time. Most of populations showed increasing or stable trends over the previous 10 years, largely due to their successful transition from feeding on natural wetland and other habitats, to feeding on artificial agricultural habitats that provide considerably better food intake rates, forage quality and energy. Some of the most rapidly increasing populations have brought conservation challenges due to their abundance affecting economic interests, which we continue to need to address. However, our ability to judge these trends was highly variable among populations and, in addition, the assessment identified 23 populations that had declined in the previous 10 years at that time. The Goose Specialist Group therefore sees as its core activities to continue: (1) to monitor all northern hemisphere goose populations, and in the coming 18 months attempt to revise all estimates of current population size and recent (10 year) and longer trend as far as possible with an assessment of their quality; (2) to improve our knowledge of those populations for which we are data deficient; (3) to focus on improved knowledge about the causes for the declining trends among those populations that have unfavourable conservations status and to gather information about methods to restore these populations to favourable conservation status.

T-005 (KSR 5)

Number of research projects completed or supported by SSC members per taxonomic group and region: ongoing

Result description: We carried out monitoring of the Fennoscandian population in the entire flyway from the breeding grounds to the wintering grounds. We started site restoration action in Lithuania and Hungary, and started land purchase in Greece.

COMMUNICATE

Communication

T-006 (KSR 12)

Number of scientific events organised: ongoing

Result description: We are in touch with parties that are interested in organising the Goose Specialist Group Meeting in 2023. So far, there appears to be an option in Eastern Europe and in East Asia. By mid-summer 2022, we will make sure to have more information from these parties and make a decision on where to organise the meeting.

T-007 (KSR 12)

Number of Species e-bulletin, Save Our Species newsletter, SSC Groups' newsletter editions produced: 1

Result description: *Goose Bulletin* 27 was published in 2021.

Summary of achievements

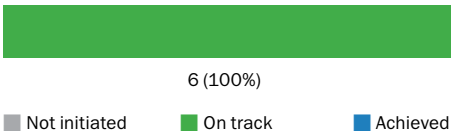
Total number of targets 2021–2025: 6

Geographic regions: 2 Asia, 1 America, 5 Europe

Actions during 2021:

Assess: 4 (KSR 5)
Communicate: 2 (KSR 12)

Overall achievement 2021–2025:



IUCN SSC Heron Specialist Group



CHAIR
Clay Green
Texas State University, Department of Biology, San Marcos, Texas, US

RED LIST AUTHORITY COORDINATOR
BirdLife International

NUMBER OF MEMBERS
33

SOCIAL MEDIA AND WEBSITE
Facebook: HeronConservation
Flickr: HeronConservation
Twitter: @HeronCons
Website: https://www.heronconservation.org

Mission statement

The mission of the Heron Specialist Group (HSG) is to promote the conservation of herons and their habitats worldwide by encouraging research, inventory, monitoring and conservation action. To achieve its mission, the HSG maintains worldwide communication linkages among heron specialists, assesses the conservation status of heron populations, provides syntheses of information and action plans for the conservation of heron populations, and otherwise facilitates conservation action on behalf of herons and their habitat.

Projected impact 2021–2025

For this quadrennium, our planned and ongoing conservation targets will foster an increase in networking, exchange of ideas and attention to conservation issues concerning herons, egrets and bitterns of the world. We will leverage virtual platforms to become better connected across the globe.

Targets 2021–2025

ASSESS

T-004 Publish annual volumes of the Specialist Group's journal (*Journal of Heron Biology and Conservation*).

T-006 Develop expertise listing to ensure all Near Threatened, Vulnerable, Endangered and Critically Endangered species are reviewed for Red List assessment.

PLAN

T-001 Update the Global Plan for HeronConservation.

ACT

T-007 Establish Species Working Groups for Vulnerable, Endangered and Critically Endangered species.

NETWORK

T-002 Establish Sub-Saharan Working Group.

T-005 Complete Strategic Review of Heron Specialist Group governance and operations.

T-008 Organise and host virtual meetings of Heron Specialist Group.

T-009 Secure financial support for Coordinator for White-bellied Heron Working Group.

COMMUNICATE

T-003 Organise and carry out the 2nd Herons of the World Symposium.

Activities and results 2021

ASSESS

Research activities

T-004 (KSR 5)

Number of publications produced in internal journals of SSC groups: 3

Result description: We continued to promote the journal and solicit publications. The journal published three papers in 2021, with an expectation to double that output in 2022.



Near Threatened Reddish Egret (*Egretta rufescens*), with captured needlefish in Florida Bay, US
Photo: Jim Gray



Critically Endangered White-bellied Heron (*Ardea insignis*), in Bhutan
Photo: Indra Acharja



Endangered Madagascar Pond-Heron (*Ardeola idae*), with chicks
Photo: Yverlin Pruvot

PLAN

Planning

T-001 (KSR 8)

Number of conservation plans/strategies updated: 1

Result description: We are building a network of individuals across the globe to revise and update the global plan for heron conservation.

NETWORK

Documents review

T-005 (KSR 2)

Review and strengthen governance and operating principles of Specialist Group: ongoing

Result description: Strategic Review of Heron Specialist Group governance and operations is ongoing, with discussions within HeronConservation as well as discussions with other SSC groups on how they operate, function, etc.

Membership

T-008 (KSR 2)

Number of SSC members recruited: 1

Result description: HeronConservation has plans to annually host virtual meetings for its SSC membership and others interested in heron, egret and bittern conservation around the world. We held a heron symposium in 2021 in conjunction with the Waterbird Society and have plans for the next virtual meeting in November 2022.

Synergy

T-002 (KSR 1)

Number of 'in kind' partnerships established and maintained: 1

Result description: Discussions have begun with partners and stakeholders in Africa for a sub-Saharan African group. We have discussed options for expanding to other SSC groups (e.g., Stork, Ibis and Spoonbill Specialist Group; Crane Specialist Group).

COMMUNICATE

Communication

T-003 (KSR 13)

Number of SSC members' presentations developed in relation to specific taxonomic groups: 100

Result description: We organised and held the 2nd Herons of the World Symposium. Originally slated to be in Africa (in person), we switched to a virtual conference. We had 12 oral presentations and one plenary speaker that were all part of HeronConservation.

Acknowledgements

The Heron Specialist Group would like to acknowledge its many members, partners and stakeholders that furthered 'heron' conservation around the world in 2021. For the Herons of the World Virtual Symposium, we thank Patty Szczys and the Waterbird Society for allowing us to organise our symposium in conjunction with the society's virtual meeting. We also thank Chip Weseloh, Katsutoshi Matsunaga and others for organising the symposium and their continued work to promote our Specialist Group's journal. We thank Jim Kushlan for his advice and guidance on all things 'heron' and HeronConservation. We thank Gopi Sundar and the Stork, Ibis and Spoonbill Specialist Group for the exchange of ideas and information between our two SSC Specialist Groups.

Summary of achievements

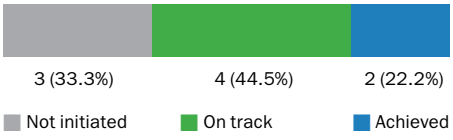
Total number of targets 2021–2025: 9

Geographic regions: 5 Global, 3 Africa, 2 Asia

Actions during 2021:

Assess: 1 (KSR 5)
Plan: 1 (KSR 8)
Network: 3 (KSR 1, 2)
Communicate: 1 (KSR 13)

Overall achievement 2021–2025:



IUCN SSC Hornbill Specialist Group





CO-CHAIR
Lucy Kemp (Africa)
Mabula Ground Hornbill Project, South Africa

CO-CHAIR
Aparajita Datta (Asia)
Nature Conservation Foundation, India

RED LIST AUTHORITY COORDINATOR
BirdLife International

NUMBER OF MEMBERS
141

SOCIAL MEDIA AND WEBSITE
Facebook: @iucnhornbills
Instagram: @iucn_hornbills
Twitter: @iucn_hornbills
Website: https://iucnhornbills.org

Mission statement

The Hornbill Specialist Group aims to use our combined knowledge and skills for evidence-based conservation action of hornbills and their habitats.

Projected impact 2021–2025

By the end of 2025, the Hornbill Specialist Group (HSG) will have carried out conservation planning for all Endangered and Vulnerable hornbill species in both Asia and Africa, with implementation agencies supported by the HSG to meet their targets. Conservation planning will include Indigenous Knowledge Systems to be used in designing bespoke conservation actions/models where the threats are anthropogenic in nature. We will have enabled and supported research for greater understanding of lesser-studied species, especially in Africa and for some Asian species. The knowledge will be used for evidence-based conservation action for hornbills and their habitats. By 2025, we will have built a strong and active collaborative hornbill research and conservation network in Asia and established one in Africa.

Targets 2021–2025

ASSESS

T-006 Continue to publish and share *Hornbill Natural History and Conservation* (HNHC) newsletter/journal.

T-007 Publish a book on the status and conservation (state of current knowledge) of the world's hornbills.

T-009 Prepare (or share existing) 'advice' on release/reintroduction of (e.g. confiscated) hornbills into the wild.

T-010 Organise Red List assessment workshops for African and some Asian species.

T-011 Conduct climate change assessment for Southern Ground Hornbill (*Bucorvus leadbeateri*).

T-012 Encourage some national-level assessments/action plans.

T-013 Compile and publish bibliography of hornbill publications.

T-021 Obtain better range-wide population and habitat assessments for global population estimates based on science to inform Red List threat category.

T-022 Identify threatened species priority areas.

T-034 Revise and publish the hornbill research training manual online.

T-050 Document research projects and compile case studies by HSG members and others on hornbills and create knowledge database.

T-060 Liaise with the Green Status of Species Task Force to test this approach for ~2–5 threatened hornbill species.

PLAN

T-014 Update, review and implement existing plans.

T-015 Publish multi-species Visayan Action Plan and ensure collaboration between groups.

T-016 Publish range-wide action plan for the Plain-pouched Hornbill (*Rhyticeros subruficollis*).

T-017 Publish range-wide action plan for Northern Ground Hornbill (*Bucorvus abyssinicus*).

T-018 Publish Action Plan for the Mindoro Hornbill (*Penelopides mindorensis*).

T-019 Publish range-wide action plans (with adequate government representatives/all relevant stakeholders) for at least a few Vulnerable and Endangered species (Sunda Hornbills, Indo-Chinese and Philippine endemics).

T-020 Assess 2 Plan (A2P) for African hornbill species.

T-054 Push for CITES listing/trade issues for *Bycanistes*, *Ceratogymna*, *Bucorvus*, Sulu Hornbill (*Anthracoceros montani*) precautionary, follow up on Helmeted Hornbill (*Rhinoplax vigil*).

T-055 Motion for new names/taxonomy.



Wreathed Hornbill (*Rhyticeros undulatus*) male on a visit to the nest at Pakke Tiger Reserve, India
Photo: Aparajita Datta

T-056 Develop an IUCN motion (resolution) on the importance of hornbills for habitat (especially forest) restoration (UN Decade of Ecosystem Restoration).

T-057 Hold a Helmeted Hornbill update/ side event and 'All Hornbills' side event at the IUCN World Conservation Congress in 2021.

T-058 Convention on Migratory Species: support inclusion of the case of the Plain-pouched Hornbill.

T-059 Submit phylogeny recommendation to BirdLife.

ACT

T-025 Finalise and share 'Hornbill Basic Care Guidelines'.

T-027 Collect data and analyse trade in hornbills; assist in preparation and lobbying of CITES listings for (African) hornbills, e.g. *Ceratogymna* spp. and perhaps *Bycanistes* spp.

T-028 Continue to drive/support existing action plans.

T-029 Continue with field surveys that assess the status of hornbills in the wild (e.g. hotspots for protection/management).

T-030 Engage with governments on hornbill conservation issues.

T-031 Develop and publish sustainability best practices guidelines.

T-032 Develop best practices guidelines on community engagements: lessons from existing projects, with nest guardian programmes.

T-033 Encourage establishment of conservation actions/programmes in countries with less work undertaken or poor information: collaborations/training.

T-044 Provide land use guidelines.

T-045 Support rural communities involved in species conservation: nature tourism/ nest guardians.

T-046 Undertake more policy-level work with governments that leads to real change.

NETWORK

T-001 Explore having a government liaison for Indochinese countries that we can work with.

T-002 Compile and profile HSG members, organisational affiliations, projects, publications, contributions, skills and expertise.

T-003 Provide training in Red List assessment for members: representatives from different range countries.

T-004 Provide training in scientific research skills/writing/data analysis: workshop needed for members/students.

T-005 Build conservation capacity and competency, both individual and organisational (Conservation Planning Specialist Group training, e.g., using Asian Species Action Partnership approach).

T-023 Build partners/networks in range countries that are poorly represented or with information gaps (Indo-China and most of Africa).

T-024 Explore Science for Nature and People Partnership (SNAPP) opportunity to enhance collaboration between different taxon Specialist Groups and field partners, etc.

T-035 Improve and increase communication and functioning with existing HSG members and the Steering Committee.

T-036 Harness members' skills and delegate tasks to more members: increase engagement and involvement of members in actions/activities.

T-037 Re-invite members; ensure representation and diversity.

T-038 Build relationships with non-hornbill groups and promote successful outcomes (SNAPP Opportunity).

T-039 Encourage our members to contribute to global/regional databases: iNat, eBird, etc.

T-040 Approach Association of Southeast Asian Nations (ASEAN), a regional intergovernmental organisation.

T-041 Engage with potential large funders for highlighting threats to hornbills and seeking partnerships for support.

T-042 Look at engaging relevant industry partners in conservation partnership.

T-043 Concession land management: engage with relevant government stakeholders (regional/federal).

COMMUNICATE

T-047 Establish a blog on the website where members can write, contribute, host podcasts.

T-048 Host online events and/or talks by members on their work (engagement and mentoring): invite partners, funders, SSC main office, Conservation Planning Specialist Group (CPSG), etc.

T-049 Improve quality and frequency of communications through websites, social media and listserv.

T-051 Organise International Hornbill Conference, Bhutan 2022.

T-052 Manage the implementation of a communication strategy (social media and events).

Activities and results 2021

ASSESS

Research activities

T-006 (KSR 5)

Number of publications produced in internal journals of SSC groups: 1

Result description: We published one newsletter in July 2021: Vol 2(1) with two research articles and five notes from the field.

T-013 (KSR 5)

Number of publications produced in internal journals of SSC groups: 2

Result description: We had two interns in Asia and Africa who compiled a bibliographic database on all 62 species of hornbills. All 32 species of Asian hornbills and the details of scientific research work done on them were compiled in one Google spreadsheet. Later, we used Airtable software to create the database and make it more convenient to manage. We are now in the process of making it accessible online on the IUCN HSG's website. The links and details will be shared here once the databases are finalised.

T-034 (KSR 5)

Number of publications produced in internal journals of SSC groups: 1

Result description: A meeting was held to discuss the updating and rewriting of a new Hornbill Research training manual. Multiple chapters with many authors have been identified; however, work on the chapters by individual authors is yet to begin. Completion is expected by December 2022.

T-050 (KSR 5)

Number of research projects completed or supported by SSC members per taxonomic group and region: 2

Result description: The Asian and African hornbill bibliography/database is completed; the next step will be to compile details of various research projects on hornbill species across range countries. This work will continue and be completed by December 2022.

PLAN

Planning

T-015 (KSR 8)

Number of conservation plans/strategies developed: 1

Result description: The multi-species Action Planning workshop for five threatened endemic species was held in Negros, Philippines, in June 2019. This workshop included conservation planning for two endemic threatened hornbill species: the Critically Endangered Rufous-headed Hornbill (*Rhabdotorrhinus waldeni*) and the Endangered Visayan Hornbill (*Penelopides panini*). The final report was published in February 2022 and can be downloaded at: https://iucnhornbills.org/western-visayas-conservation-workshop-report/.

ACT

Technical advice

T-030 (KSR 10)

Number of technical consultations provided to support conservation actions: 5

Result description: This is carried out by many HSG members through their research and conservation projects for multiple species in many range countries in Asia and Africa. Collectively through the HSG, engagement with government authorities has been carried out specifically in some range countries for species like the Critically Endangered Helmeted Hornbill (Indonesia, Thailand, Malaysia, Brunei, Myanmar), Sulu Hornbill and Rufous-headed Hornbill (Philippines), and the Vulnerable Southern Ground Hornbill (South Africa, Zimbabwe).

NETWORK

Capacity building

T-004 (KSR 2)

Number of people trained in other fields: 6

Result description: We have four new members from Africa.

T-005 (KSR 2)

Number of people trained in conservation planning: 3

Result description: Within Africa, we have three new members trained by CPSG in conservation planning, and they will be involved in three conservation plans in 2022.

Membership

T-002 (KSR 2)

Number of SSC members recruited: 12

Result description: An online survey form with many questions was created and sent out to the HSG member network on 30 October 2021. By mid-November, we had received 25 responses. The survey was closed in early December. However, there was a problem retrieving the data. We are now redoing the survey. Several new African members and a few Asian members were recruited into the HSG this year.

T-035 (KSR 2)

Number of SSC members recruited: 20

Result description: We have added several new members since 2020, especially from Africa. Several members have also now been recruited into helping with different activities and work of the HSG. For example, our Editorial Board had five members including one from the Steering Committee. Given the level of work, we have recruited three additional HSG members. Communications on updates and activities have increased. Several Steering Committee members are also in key advisory roles on trade and captive breeding, while others have contributed to the social media communications, conservation planning and training.

Synergy

T-023 (KSR 4)

Number of governments supported to develop species conservation policies: 3

Result description: This has been initiated in several countries in Africa such as Ghana, Nigeria and Ethiopia.

T-042 (KSR 1)

Number of funding partners established and maintained: 6

Result description: Several in-country hornbill research and conservation projects are engaging with new partners (private, corporate) for funding and support of their projects/work on hornbills in Asia and Africa. Details of these are not yet compiled.

COMMUNICATE

Communication

T-048 (KSR 12)

Number of media articles mentioning IUCN Species theme: 1

Result description: An online research and conservation seminar was held on 27 September 2021 with 5–6 talks by hornbill researchers/HSG members. Since this was the first time, we opened it only to HSG members. Around 50 members participated. We planned to do more such talks periodically in the year but could not yet organise another event. We hope to do one more between July and September 2022.

T-049 (KSR 12)

Number of media articles mentioning IUCN Species theme: 1



Wreathed hornbills in a large communal roost (around 100 birds) near Pakke Tiger Reserve, Arunachal Pradesh, India
Photo: Aparajita Datta

Result description: The website has been updated, communications made through the HSG listserv, and several posts published on Twitter, Instagram and Facebook from official handles. Seventeen posts were published in the last year, with 1,677 fans and followers and 1,933 engagements. As of April 2021, the three IUCN HSG social media channels have: Twitter: 178 followers, Instagram: 818 followers and Facebook: 681 followers.

T-052 (KSR 12)

Number of media articles mentioning IUCN Species theme: 1

Result description: Our Steering Committee member Yoki Hadiparkarsa and his team at Rangkong Indonesia implement our social media communications on three channels. They have produced a strategy for social media communications, which needs to be further updated and discussed/improved. Their team is supported by financial support from Mandai Nature (annually given to HSG). We hope to also discuss with the IUCN bird coordinator and link him with the social media team for suggestions on social media communications.

Scientific meetings

T-051 (KSR 12)

Number of scientific events organised: 0

Result description: The 8th International Hornbill Conference was to be held in Bhutan in May 2021. This conference is held every four years; the last one was in 2017 in Malaysia. The conference was postponed due to COVID-19 and planned for May 2022. However, it will now be held in May 2023. A scientific committee and organising committee are in place, some keynote speakers have been decided, the venue and theme have been decided, and planning meetings have been held.

Acknowledgements

All of us are working in a voluntary capacity for the HSG and we thank our members, Advisory Board, Steering Committee, the Editorial Board of the newsletter and those in the IUCN SSC Chair's office for their support, especially Jafet Nassar and Mayerlin Ramos. The key partner organisations who have supported the activities undertaken are the Mabula Ground Hornbill Project, Nature Conservation Foundation, Mandai Nature, Hornbill Research Foundation, Rangkong Indonesia, Attica Zoological Park, Malaysian Nature Society, Disney Animal Kingdom, Kasetsart University, EAZA Hornbill Tag, Maguari-One Zoo and Wildlife Consultants, and the Wildlife Conservation Society.

Individuals from several other institutions such as TRAFFIC, North Carolina Zoo, PhilBio, Birdlife International, Talarak Foundation, and the IUCN SSC Conservation Planning Specialist Group have helped during the conservation action planning workshops and/or participated or worked in collaboration with the HSG. We thank the Hornbill Research Foundation in Thailand for supporting the Programme Officer. We thank Maitreyi Hegde and Elizabeth Zadnik for their work on the hornbill bibliography database, Janhavi Rajan (NCF) for work on the website and newsletter and Elsia Yuanti and the communication team at Rangkong Indonesia for their work on the social media communications of the HSG.

Summary of achievements

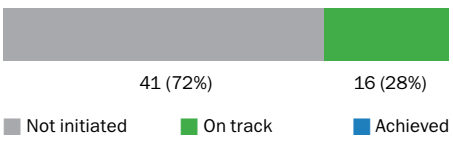
Total number of targets 2021–2025: 57

Geographic regions: 1 America, 45 Africa, 53 Asia, 2 Europe

Actions during 2021:

Assess:	4 (KSR 5)
Plan:	1 (KSR 8)
Act:	1 (KSR 10)
Network:	6 (KSR 1, 2, 4)
Communicate:	4 (KSR 12)

Overall achievement 2021–2025:



IUCN SSC Penguin Specialist Group





CO-CHAIR
Pablo Garcia-Borboroglu
Global Penguin Society and CONICET, Puerto Madryn, Chubut, Argentina

CO-CHAIR
P. Dee Boersma
Department of Biology, University of Washington, Seattle, Washington, US

RED LIST AUTHORITY COORDINATOR
Pablo Garcia-Borboroglu
Global Penguin Society and CONICET, Puerto Madryn, Chubut, Argentina

NUMBER OF MEMBERS
60

SOCIAL MEDIA AND WEBSITE
Twitter: @IUCNPenguin
Website: https://www.penguinsg.org

Mission statement

The mission of the IUCN SSC Penguin Specialist Group (PSG) is to provide scientific advice that informs policy and engages people in effective conservation action.

Projected impact 2021–2025

The disconcerting and rapid population decreases reported for most of the world's penguin species will be reversed only through immediate and affirmative action on the part of the global community of researchers, governmental entities, conservation organisations, fisheries' managers and the general public. If we address the identified threats, undertake priority research needs using an interdisciplinary and integrated approach, and begin to implement appropriate conservation actions, management could perhaps slow or stop the observed decreases in penguin populations. We wish to call attention to the plight of this important and charismatic taxonomic group, whose dire situation is a clear reflection of the current escalating crisis facing the world's marine ecosystems and as indicators of future global warming scenarios. To improve the conservation status of penguin species we will: (1) identify the need for management actions and/or studies for particular species, critical areas, or threats to penguins; (2) provide scientific advice on conservation and management issues concerning penguins to interested parties; (3) coordinate input from penguin experts for the IUCN Red List assessments; (4) facilitate dissemination of scientific information concerning penguins, including supporting publications and regional and international meetings.

Targets 2021–2025

ASSESS

T-004 Reassess IUCN Red List status of penguin species.

T-005 Publish at least one paper of global relevance related to the ecology and conservation of all penguin species.

PLAN

T-001 Convene meetings of the PSG Steering Committee focused on updating our Wild Penguins in Perpetuity Conservation Strategy.

T-003 Convene annual Steering Committee meetings to revise and redefine priorities for global penguin conservation.

T-006 Convene a meeting of the PSG Steering Committee to update and redefine priorities for global penguin conservation prior to the International Penguin Congress in Chile in 2022.

ACT

T-008 Redefine priority conservation actions needed and priority research.

NETWORK

T-002 Continue to add expert members as needed.

T-007 Convene a Steering Committee meeting in Chile 2022 to update status of PSG and define future goals.

T-011 Convene regular virtual meetings every six months with Steering Committee members.

COMMUNICATE

T-009 Develop the Specialist Group official website.

T-010 Develop the logo of the Specialist Group.

Activities and results 2021

ASSESS

Red List

T-004 (KSR 6)

Number of global Red List reassessments completed: ongoing

Result description: As we regularly do, we compiled information from our network and updated the data needed for the last conservation status assessment.



IUCN SSC Penguin Specialist Group Meeting.
Dunedin, New Zealand, 2019
Photo: IUCN SSC Penguin Specialist Group



Magellanic Penguins (*Spheniscus magellanicus*)
Photo: Global Penguin Society (Pablo Garcia Borboroglu)

PLAN

Planning

T-001 (KSR 8)

Number of conservation plans/strategies updated: 0

Result description: We have started the process to develop our Strategic Planning and we have made very good progress. Dr Lauren Waller has been leading this process together with Susie Ellis.

T-003 (KSR 8)

Number of meetings in quadrennium: ongoing

Result description: We replaced this in-person annual meeting with our monthly virtual meetings. The redefinition of priorities is now part of the Strategic Planning development.

T-006 (KSR 8)

Conservation meeting to redefine priorities held: 0

Result description: The International Penguin Congress in Chile was postponed until September 2023. We have started to discuss the details with the local and international Organising Committee. We explored options for the agenda of the meeting, which will take place before the Congress in 2023.

ACT

Conservation actions

T-008 (KSR 11)

Priority actions and research identified: ongoing

Result description: Under the framework of our strategic planning process, we had 12 meetings virtually to redefine priority conservation actions needed and priority research.

NETWORK

Membership

T-002 (KSR 2)

Number of SSC members recruited: 23

Result description: We conducted a detailed selection of new members and 23 new members have been added to our membership.

Synergy

T-007 (KSR 4)

Update PSG status updated and goals defined: 1

Result description: Due to the pandemic, the International Penguin Congress to be held in Chile was postponed, so we did not have a meeting there. However, we held monthly meetings with the Steering Committee.

T-011 (KSR 2)

Number of Steering Committee meetings: 12

Result description: We replaced our in-person meetings with monthly meetings with all the members of our Steering Committee.

COMMUNICATE

Communication

T-009 (KSR 12)

Website designed and running: 1

Result description: We finished the process to design our official website and launched it successfully (https://www.penguinsg.org).

T-010 (KSR 13)

Logo designed and adopted: 1

Result description: We finished the process to design our first, brand new logo and have already adopted it.

Acknowledgements

The IUCN SSC Penguin Specialist Group would like to acknowledge the University of Washington and The Global Penguin Society for institutional support, as well as Detroit Zoo for donating funds for our web page development.

Summary of achievements

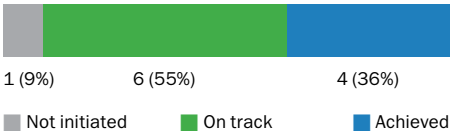
Total number of targets 2021–2025: 11

Geographic regions: 10 Global, 1 America

Actions during 2021:

Assess: 1 (KSR 6)
Plan: 3 (KSR 8)
Act: 1 (KSR 11)
Network: 3 (KSR 2, 4)
Communicate: 2 (KSR 12, 13)

Overall achievement 2021–2025:



IUCN SSC Pigeon and Dove Specialist Group





SOCIAL MEDIA AND WEBSITE
Facebook: @IUCNSSCPigeonandDove
Instagram: @iucn_pigeons
Twitter: @IUCN_Pigeons

CO-CHAIR
Joe Wood
Toledo Zoo, Toledo, Ohio, US

CO-CHAIR
Charles Cerbini
Wildlife Conservation Society/Bronx Zoo, Bronx, New York, US

RED LIST AUTHORITY COORDINATOR
BirdLife International (Simon Bruslund)

NUMBER OF MEMBERS
44

Mission statement

Columbiformes (pigeons and doves) currently rank as one of the most threatened avian orders in the world – a consequence of a range of pressures including habitat loss and degradation, invasive alien species, hunting and climate change. A determination to reverse this worrying trend was the impetus behind the creation of the IUCN SSC Pigeon and Dove Specialist Group (PDSG). Key activities of the group will include collaborating with Birdlife International to assess and monitor the status of Columbiform species, raising the profile of threatened pigeons and doves, and convening expertise for conservation. We intend to draft action plans for priority species, will seek to source the funding required for the implementation of these plans, and will prioritise monitoring and evaluation of conservation efforts.

Projected impact for 2021–2025

By the end of 2025, we will have established the Pigeon and Dove Specialist Group as a global force for the conservation of Columbiformes. This will include growing the group's membership (with a particular emphasis on increasing representation from the Global South), collaborating with the Bird Red List Authority to identify species for updated assessment, and developing a communications strategy. A current priority is the Manumea (*Didunculus strigirostris*). We will be assisting with the implementation of a Recovery Plan for this species, beginning with the coordination of a Captive Breeding Feasibility Study.

Targets for 2021–2025

ASSESS

T-002 Produce four annual submissions to Birdlife International, the Bird Red List Authority, which collate information relevant to the assessment of Columbiform species.

T-004 Identify 10 species for updated assessment on the IUCN Red List by 2022.

PLAN

T-003 By 2022, identify 10 priority species using a standardised methodology which incorporates 'Evolutionarily Distinct and Globally Endangered' (EDGE), 'Lost Species' and 'Flagship Species' frameworks.

T-005 By 2024, convene a workshop to review and update the Conservation Assessment and Management Plan for Pigeons and Doves (CBSG & ICBP, 1993).

T-006 Work with the Conservation Planning Specialist Group to organise at least one planning workshop for a priority species and draft the subsequent action plan by 2024.

ACT

T-008 Based on existing EDGE and IUCN Red List priorities, assist with the implementation of the Manumea Recovery Plan (MNRE & SCS, 2020), with an emphasis on mounting a large-scale search for Manumea (*Didunculus strigirostris*) by 2023 and progressing the other set goals.

T-009 Produce a feasibility study relating to an *ex situ* programme for Manumea by 2022.

T-010 Initiate direct support for at least two additional programmes focused on priority species by 2024.

NETWORK

T-001 Recruit at least 40 new members by 2025, with a focus on increasing representation from the Global South.

COMMUNICATE

T-011 Launch the Specialist Group website by 2022.

T-012 Establish an active social media presence by 2022.

T-013 Produce the first Specialist Group newsletter by 2022, with subsequent editions released every six months thereafter.



Negros Bleeding-heart (*Gallicolumba keayi*).
Negros Forest Park, Bacolod, Philippines
Photo: Corey Wyckoff



Blue-eyed Ground Dove (*Columbina cyanopis*)
Photo: Simon Bruslund

Activities and results for 2021

ASSESS

Red List

T-002 (KSR 6)

Number of technical documents provided to support Red List assessments/reassessments: 1

Result description: PDSG Members, via the Red List Coordinator, contributed to discussions on Columbiform species being considered for reassessment under IUCN Red List Criteria during 2021.

T-004 (KSR 6)

Number of technical documents provided to support Red List assessments/reassessments: 1

Result description: Proposal submitted for Red List reassessment of the Bridled Quail-dove (*Geotrygon mystacea*), on the basis of peer-reviewed publications.

ACT

Conservation actions

T-009 (KSR 10)

Number of technical documents provided to support conservation actions: 0

Result description: A Memorandum of Understanding has been signed by the PDSG and the Government of Samoa Ministry of Natural Resources and Environment (MNRE). This states that the PDSG will take responsibility for coordinating a Captive Breeding Feasibility Study, will produce a comprehensive report for consideration by MNRE, and will commit to providing expertise and support, as agreed, for the implementation of ongoing actions.

NETWORK

Membership

T-001 (KSR 2)

Number of SSC members recruited: 7

Result description: Seven new members have been admitted to the Specialist Group since the beginning of the quadrennium.

COMMUNICATE

Communication

T-012 (KSR 13)

Number of digital communication outputs developed in relation to specific taxonomic groups: 1

Result description: A Communications Working Group has been established, and active accounts have been created on Facebook, Twitter and Instagram.

Acknowledgements

We would like to extend our sincere gratitude to the team at the SSC Chair's Office for all their assistance in getting the Specialist Group up and running, and to Toledo Zoo for acting as host organisation. Special thanks are also due to those members who have volunteered to play a core role in advancing the aims of the PDSG by serving in the group Steering Committee.

Summary of achievements

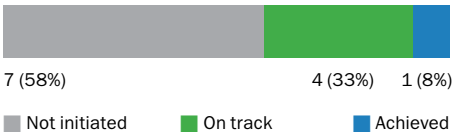
Total number of targets for 2021–2025: 12

Geographic regions: 10 Global, 2 Oceania

Actions during 2021:

Assess:	2 (KSR 6)
Act:	1 (KSR 10)
Network:	1 (KSR 2)
Communicate:	1 (KSR 13)

Overall achievement 2021–2025:



IUCN SSC Stork, Ibis and Spoonbill Specialist Group





SOCIAL MEDIA AND WEBSITE
Website: https://storkibisspoonbill.org

CO-CHAIR
K.S. Gopi Sundar
International Crane Foundation, US, and Nature Conservation Foundation, India

CO-CHAIR
Luis Santiago Cano Alonso
Grupo de Investigación en Biología Evolutiva y de la Conservación, Universidad Complutense de Madrid, Madrid, Spain

RED LIST AUTHORITY COORDINATOR
BirdLife International

NUMBER OF MEMBERS
39

Mission statement

The Stork, Ibis and Spoonbill Specialist Group (SIS-SG) is a global network of scientists, conservationists, governmental and non-governmental institutions, and people committed to the scientific understanding and conservation of SIS species and their habitats.

Projected impact for 2021–2025

We expect to assess the Green Status of six species of the group.

Targets for 2021–2025

ASSESS

T-001 Publish yearly the peer-reviewed online open access publication *SIS Conservation*.

T-002 Assess the Green Status of at least six Stork, Ibis and Spoonbill (SIS) species.

T-003 Contribute to the publication of the global Green Status of Species.

T-008 Publish at least one new special publication.

T-009 Write and publish scientific articles including: SIS species biology, ecology and behaviour, threats and conservation issues by at least one author with affiliation to SSC.

ACT

T-006 Organise at least a technical consultation to support conservation actions for organisations and institutions engaged with SIS species research and conservation.

NETWORK

T-004 Identify focal experts for species in the Vulnerable, Endangered or Critically Endangered categories.

T-005 Review membership and expand the taxonomic and geographic representation for the group by inviting 10 new experts, with emphasis on increasing the representation of members from the Americas and Africa and aiming for female members.

COMMUNICATE

T-007 Compile a list of relevant news and documents and make them publicly available on the SIS-SG website.

Activities and results for 2021

ASSESS

Green Status

T-002 (KSR 6)

Number of new Green Status of Species assessments completed: 3

Result description: We have assessed three species already: Black Stork (*Ciconia nigra*), Black-faced Spoonbill (*Platalea minor*) and Shoebill (*Balaeniceps rex*). These assessments have contributed to publishing the scientific article: Grace, M.K., et al. (2021). 'Testing a global standard for quantifying species recovery and assessing conservation impact'. *Conservation Biology* 35:1833–1849. https://doi.org/10.1111/cobi.13756

T-003 (KSR 6)

Number of new Green Status of Species assessments completed: 1

Result description: The Green Status assessment of the Black Stork has been accomplished and is now available at: https://www.iucnredlist.org/species/22697669/111747857#green-assessment-information. Citation: Cano-Alonso, L.S. 2021. *Ciconia nigra* (Green Status assessment). The IUCN Red List of Threatened Species 2021: e.T22697669A2269766920213. Accessed on 28 December 2021.

Research activities

T-001 (KSR 5)

Number of scientific publications about species research that acknowledge SSC affiliation: 1



Black Stork (*Ciconia nigra*)
Photo: Juan Pablo Resino



Geronticus eremita, Spain
Photo: Luis Santiago Cano

Result description: *SIS Conservation* Issue 3, 2021 is ready: eight original peer-reviewed papers on stork, ibis and spoonbill have been submitted and approved to be published in the third issue of *SIS Conservation*. The full issue will be online in the first quarter of 2022. Early view of the issue is available at: https://storkibisspoonbill.org/publications/sis-conservation-issue-3/

T-009 (KSR 5)

Number of scientific publications about species research that acknowledge SSC affiliation: 1

Result description: The following article has a co-author with SSC affiliation: Fandos, G., et al. (2021). 'Dynamic multistate occupancy modeling to evaluate population dynamics under a scenario of preferential sampling'. *Ecosphere* 12:e03469. https://doi.org/10.1002/ecs2.3469

COMMUNICATE

Communication

T-007 (KSR 13)

Number of digital communication outputs developed in relation to specific taxonomic groups (e.g. blog posts and social media campaigns): 2

Result description: We posted two news articles on the website; one of them was also in the Member at Work section. The two posts are: https://storkibisspoonbill.org/news/summary-history-current-status-geronticus-eremita/ (News/Member at work/Research); https://storkibisspoonbill.org/news/2020-iucn-ssc-stork-ibis-and-spoonbill-specialist-group-report/ (News).

Acknowledgements

Re:wild provided an IUCN Small Grant to support the communication strategy of the Specialist Group. This has been an enormous acknowledgement of the value of *SIS Conservation* by the IUCN SSC and its partner Re:wild, and we are very grateful for this support. Lars Petersson has given us the copyright of a picture of Sao Tome Ibis (*Bostrychia bocagei*) to be used by this Specialist Group and IUCN, we are also grateful.

Summary of achievements

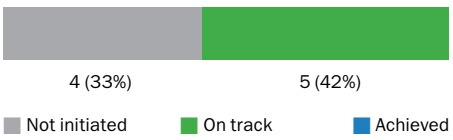
Total number of targets for 2021–2025: 9

Geographic regions: 9 Global

Actions during 2021:

Assess: 4 (KSR 5, 6)
Communicate: 1 (KSR 13)

Overall achievement 2021–2025:



2021 Report

IUCN SSC Swan Specialist Group



SOCIAL MEDIA AND WEBSITE
Website: https://swansg.org

CHAIR
Eileen Rees
Wildfowl & Wetlands Trust, Slimbridge, Gloucester, GL2 7BT, UK (retired)

RED LIST AUTHORITY COORDINATORS
BirdLife International (focal point: Eileen Rees)

NUMBER OF MEMBERS
315

Mission statement

The Swan Specialist Group is an international network of swan specialists who undertake monitoring, research, conservation and management of swan populations. Its mission is to facilitate effective communication between members and others with an interest in swan management and conservation worldwide, in order to improve national and international links for cooperative research, to identify gaps in knowledge and to provide a forum for addressing swan conservation issues.

Projected impact 2021–2025

By the end of 2025, we will have undertaken the 10-year review of the implementation of the African-Eurasian Migratory Waterbirds (AEWA) Bewick's Swan Action Plan, which will include: (1) assessment of the current conservation status of the Northwest European Bewick's Swan (*Cygnus columbianus bewickii*) population (found to be in decline in 2010), (2) evaluation of factors found to be contributing to the decline, (3) evaluation of the outcome of conservation actions, (4) identification of continued gaps in knowledge, and (5) identification of protection measures that should be maintained or put in place. The review will also indicate whether a new Action Plan is required, with updated priorities for conservation action. For the other swan species, which are currently classed as Least Concern by IUCN, we will maintain our monitoring of population trends, or collect such information where the monitoring is being undertaken by other organisations, to identify any conservation issues that may arise for the swans.

Targets 2021–2025

ASSESS

T-002 Population monitoring: Collate and publish results of the international censuses of migratory swan populations in the Northern Hemisphere.

PLAN

T-003 AEWA Bewick's Swan Action Plan: Convene Bewick's Swan Expert Group workshops.

T-004 AEWA Bewick's Swan Action Plan: Undertake the 10-year review of the AEWA Bewick's Swan Action Plan.

T-005 Technical advice: Provide information and technical advice in support of the programmes of IUCN SSC, Wetlands International, BirdLife International, Ramsar and others as necessary.

T-006 Technical advice: Provide information on the population trends, distribution ecology, habitat requirements and behaviour of swan species to address conservation issues as they arise.

NETWORK

T-007 Listserv: Maintain the Swan Specialist Group listserv.

T-008 Gap-filling: Improve knowledge of swan species in the Southern Hemisphere, increase Swan Specialist Group membership in the region.

COMMUNICATE

T-009 Newsletters: Publish *Swan News* annually: four issues in years 2021–2025.

T-010 Website: maintain the Swan Specialist Group website.

T-011 Swan Specialist Group Symposium: Convene 7th International Swan Symposium in Jackson, Wyoming, US.

T-012 Swan Specialist Group Symposium: Publish proceedings of the 7th International Swan Symposium in a scientific journal.

Activities and results 2021

ASSESS

Research activities

T-002 (KSR 5)

Number of scientific publications about species research that acknowledge SSC affiliation: 0

Result description: A call was put out to National Count Coordinators, requesting Bewick's Swan (*Cygnus columbianus*) and Whooper Swan (*Cygnus cygnus*) count data for their countries. The results of the



Trumpeter Swan (*Cygnus buccinator*), in triumph display
Photo: Margaret Smith

census for the Icelandic Whooper Swan population were published. Citation: Brides, K., et al. (2021). 'The Icelandic Whooper Swan *Cygnus cygnus* population: current status and long-term (1986–2020) trends in its numbers and distribution'. *Wildfowl* 71:29–57.

PLAN

Planning

T-003 (KSR 8)

Number of annual meetings of the AEWA Bewick's Swan Expert Group: 1

Result description: A meeting was held online in August 2021. Key points addressed included: (1) updated assessment of the population status (census results); (2) new conservation initiatives for Bewick's Swans in Germany; (3) update on the Swan Champions project, to reduce levels of illegal hunting; (4) schedule for the 10-year review of the AEWA Bewick's Swan Action Plan.

Policy

T-006 (KSR 9)

Risk to swan species reduced: 1

Result description: The Swan Specialist Group joined other conservation agencies and non-governmental organisations in writing to the Acting Secretary for the US Department of the Interior, to express concern about the 'MBTA Rule', whereby former President Trump's administration aimed to redefine the scope of the Migratory Bird Treaty Act (MBTA) so that it protected birds only if a business or individual intentionally injures or kills birds protected by the MBTA. We were particularly concerned that the proposed change has the potential to reduce very significantly the effectiveness of the MBTA for conserving migratory birds in North America (noting that Trumpeter Swans (*Cygnus buccinator*) recovered from near extinction following protection under the MBTA), and that it would also affect relationships with treaty partners. Representations were successful, and the U.S. Fish and Wildlife Service published a final rule revoking the 7 January 2021 regulation. Thus interpretation of the MBTA returned to prohibiting incidental take and applying enforcement discretion, consistent with long-standing agency practice prior to 2017.

NETWORK

Capacity building

T-008 (KSR 2)

Number of reports of swan species in the Southern Hemisphere in the Swan Specialist Group newsletter: 1

Result description: Southern Hemisphere swans are still under-represented within the Swan Specialist Group, and this should be addressed during the 2021–2025 quadrennium. Abstracts from two papers on Black-necked Swans (*Cygnus melanocoryphus*) in Chile were however added to the Swan Specialist Group website and included in *Swan News* 16 during 2021.

Synergy

T-007 (KSR 2)

Swan Specialist Group listserv operative throughout the quadrennium: 1

Result description: Announcements were made regarding the publication of *Swan News* 16, the forthcoming international swan symposium and queries.

COMMUNICATE

Communication

T-009 (KSR 12)

Number of Species e-bulletin, Save Our Species newsletter, SSC Groups' newsletter editions produced: 1

Result description: *Swan News* 16 was published in November 2021 (https://swansg.org/2021/12/15/swan-news-16/).

T-010 (KSR 12)

Swan Specialist Group website accessible and updated with news items: 1

Result description: Sixteen news items were posted on the website during 2021.

T-011 (KSR 12)

Number of presentations delivered in scientific events: 0

Result description: The Organising Committee was established. First Announcement and Call for Abstracts were circulated to Swan Specialist Group members.

Acknowledgements

We thank the Wildfowl & Wetlands Trust (WWT) for continuing to host the Swan Specialist Group website, and are particularly grateful to Nathan D'Costa for uploading news items and documents as the information comes in.

Summary of achievements

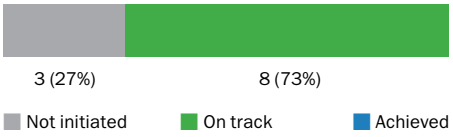
Total number of targets 2021–2025: 11

Geographic regions: 6 Global, 3 America, 1 Asia, 3 Europe, 2 Oceania

Actions during 2021:

Assess: 1 (KSR 5)
Plan: 2 (KSR 8, 9)
Network: 2 (KSR 2)
Communicate: 3 (KSR 12)

Overall achievement 2021–2025:



IUCN SSC Threatened Waterfowl Specialist Group



SOCIAL MEDIA AND WEBSITE
Facebook: Threatened Waterfowl Specialist Group
Website: **https://threatenedwaterfowlsg.org**

CHAIR
Hywel Glyn Young
Durrell Wildlife Conservation Trust

RED LIST AUTHORITY COORDINATOR
BirdLife International (Focal point Hywel Glyn Young)

NUMBER OF MEMBERS
88

Mission statement

To conserve the world's most threatened waterfowl by focusing on direct action; developing, demonstrating and disseminating best conservation practice and processes; and actively promoting and encouraging information exchange on threatened waterfowl monitoring, research, conservation and public awareness worldwide. We will do this through producing and implementing international action plans, incorporating *in situ* and *ex situ* conservation tools, as necessary; by providing advice to policy makers, international conventions and practitioners; and encouraging information exchange and cooperation amongst threatened waterfowl conservationists and with other relevant conventions and organisations.

Projected impact 2021–2025

By the end of 2025, the Threatened Waterfowl Specialist Group (TWSG) will have greatly increased its network of threatened waterfowl experts and enthusiasts, facilitating communication freely between a wide range of individuals and institutions. This network will cover all global regions and each of the taxa of interest to the group: 43 full species, 22 subspecies and 12 other populations. Collaboration and support for specific projects in Eurasia, Russia, China, Myanmar, Africa and Madagascar will highlight important locally-run programmes for, in particular, Red-breasted Goose (*Branta ruficollis*), Blue-winged Goose (*Cyanochen cyanoptera*), Baer's Pochard (*Aythya baeri*), Madagascar Pochard (*Aythya innotata*), Pink-headed Duck (*Rhodonessa caryophyllacea*), Long-tailed Duck (*Clangula hyemalis*), Scaly-sided Merganser (*Mergus squamatus*), Pacific Common Eider (*Somateria mollissima*) and Spectacled Eider (*Somateria fischeri*), to increase understanding of these highly threatened taxa and to see positive results in their numbers.

Targets 2021–2025

ASSESS

T-001 Continue long-term monitoring of Spectacled Eider (*Somateria fischeri*) in Chaun Delta (the only monitoring site in Asia).

T-014 Undertake coordinated mid-winter census of Baer's Pochard (*Aythya baeri*) across flyway in January 2022.

T-016 Assess protected areas in India for threatened waterfowl species.

T-017 Assess population status, threats and conservation of the Blue-winged Goose (*Cyanochen cyanoptera*) in Ethiopia.

PLAN

T-006 Conduct surveys for the world population of Scaly-sided Merganser (*Mergus squamatus*).

T-012 Develop a National Action Plan for Baer's Pochard in Myanmar.

T-022 Develop and adopt a National Species Action Plan for the Red-breasted Goose (*Branta ruficollis*) in Romania and Kazakhstan.

ACT

T-003 Reintroduce captive-bred Madagascar Pochard (*Aythya innotata*) at Lake Sofia, Madagascar.

T-005 Continue long-term monitoring of Long-tailed Duck (*Clangula hyemalis*) in Chaun Delta (the only monitoring site in Asian breeding grounds).

T-007 Implement Scaly-sided Merganser artificial nest programme.

T-008 Survey Pink-headed Duck (*Rhodonessa caryophyllacea*) in Kachin state, northern Myanmar: permanent ongoing observations from ten camera traps in ten isolated locations for two years.

T-009 Distribute colour plates and pamphlets in the area of the Pink-headed Duck survey.

T-010 Continue short-term monitoring of Pacific Common Eider (*Somateria mollissima*) in Apapelgino (the only monitoring site in Asian breeding grounds).

T-013 Undertake site management and protection activities at Pyu Lake, Paleik Inn and Banaw Inn in partnership with local community groups.

T-015 Maintain captive breeding population of Madagascar Pochard in Madagascar.



Madagascar Pochard with ducklings at Lake Sofia, October 2021. Floating feeding station can be seen in background
Photo: Jocelyn Rafaly



Madagascar Pochard (*Aythya innotata*) floating feeding station and release aviary at Lake Sofia, Madagascar. December 2021
Photo: Roland Digby

T-018 Assess global status of Red-breasted Goose through intensive monitoring and satellite tracking at staging and wintering areas.

T-019 Support recovery of the Red-breasted Goose population through reduction and mitigation of poaching and illegal hunting impact at key staging and wintering areas.

T-020 Investigate changes in migration route and dynamic and search for possible new staging and wintering areas of the Red-breasted Goose through satellite tracking.

NETWORK

T-002 Launch new group website.

T-004 Increase group membership.

COMMUNICATE

T-011 Develop basic guidelines for the management of wetlands and conservation of Baer's Pochard.

T-023 Raise awareness about Red-breasted Goose and threatened waterfowl at key staging areas in range countries.

Activities and results 2021

ASSESS

Research activities

T-001 (KSR 5)

Number of research projects completed or supported by SSC members per taxonomic group and region: 1

Result description: Fieldwork in the Chaun Delta during 2021 showed continuous decline of nesting Spectacled Eiders (*P*= 0.0009). Bird abundance index (in birds/observer from daily observations) is also declining with years accordingly with decline in nest density (correlation is 0.927). The nesting population in Chaun Delta is under the threat of disappearance. The state of other Asian (Russian) breeding populations is unknown. The monitoring in Chaun Delta will be continued in the following years. A large-scale aerial survey for all eider species in the Russian Arctic was implemented in 2019–2021 by Dr Sofia Rozenfeld, Institute of Ecology and Evolution. The results will be processed and published in the near future.

T-014 (KSR 5)

Number of scientific publications about species research that acknowledge SSC affiliation: 0

Result description: Funding has been secured by China Bird Watching Association and the survey is being planned, due to go ahead in January 2022. Richard Hearn will be writing a small news item on this for the East Asian-Australasian Flyway Partnership (EAAFP) in late 2021.

T-017 (KSR 5)

Number of research projects completed or supported by SSC members per taxonomic group and region: 0

Result description: 2021 has proven a difficult year to undertake activities as per the predetermined schedules. The team is trying their level best to collect field data to estimate the current population status and threats of the Blue-winged Goose in Sululta plain, one of the Important Bird and Biodiversity Areas (IBAs) of Ethiopia, through total counting techniques. We are also undertaking direct inventories, questionnaire surveys and interviews to assess the possible conservation threats to the species as well as its habitats. Currently, we have started the field work and collecting population data for the dry season.

PLAN

Planning

T-006 (KSR 8)

Number of conservation plans/strategies developed: 1

Result description: A spatial model of the breeding range was built in 2019 (Xu, W. et al. 2021. Modelling suitable breeding habitat and GAP analysis for the endangered Scaly-sided Merganser *Mergus squamatus*: Implications for conservation. *Bird Conserv. Int*. 31:1-12.) and the range-wide surveys of 2019–2021 confirmed the model findings. Among 93 rivers supporting breeding Scaly-sided Mergansers in Russia there were 46 rivers surveyed in 2019–2021. Preliminary results indicate the world population number in 2019–2021 is lower than estimated previously for 2003–2013 (lower than 4,660 birds; Solovyeva, D. V. et al. 2014. The population size and breeding range of the Scaly-sided Merganser *Mergus squamatus*. *Bird Conserv. Int.* 24: 393-405).

Policy

T-022 (KSR 9)

Number of documents provided to support/guide policy making (reviews, recommendations, policy briefs): 0

Result description: The Romanian Action Plan is on the way to passing public hearings and is expected to be adopted by the Ministry of Environment by October 2022. The Kazakhstan Action Plan has been drafted and discussed by the national goose working group and needs finalisation and should be adopted by October 2022.



Red-breasted Goose (*Branta ruficollis*)
Photo: Gary Kramer



Red-breasted Goose being tagged in Kazakhstan for LIFE project
Photo: ACBK/LIFE for Safe Flight project

ACT

Conservation actions

T-003 (KSR 10)

Number of conservation translocations conducted: 3

Result description: Thirty-five (35) captive-bred Madagascar Pochards, reared in 2020 and 2021, were transferred to Lake Sofia in four groups (nine, nine, nine and eight birds) in October–November 2021 and released onto the lake in four groups in October–December. All 35 birds appear settled and have learnt to feed from special feeders that birds must dive under water to enter. As of December 2021, eight of the birds released in 2018 and five birds bred wild at Lake Sofia from released birds are visiting the release site and mixing with newly released birds. Several ducklings have hatched from older released birds and of their young in 2021, nine have fledged. The ability of freshly hatched ducklings to access feeders for released birds may be crucial to their survival.

T-005 (KSR 10)

Number of threatened species benefiting from *in situ* conservation action: 1

Result description: Nest density and abundance index both indicated a stable breeding population of Long-tailed Duck in Chaun Delta. High fluctuations in nest density are typical for this species. The monitoring in Chaun Delta will be continued in the following years.

T-007 (KSR 10)

Number of threatened species benefiting from *in situ* conservation action: 1

Result description: There were 27 Scaly-sided Merganser nests in artificial nest sites in 2021. It seems this number of active nests is the maximum possible with reasonable efforts to maintain artificial nests. Among 53 pairs counted in the Kievka River basin, 16 were nesting in artificial nests in 2021. Thus, the number of pairs using artificial nests for nesting was 30.2% of population.

T-010 (KSR 10)

Number of threatened species benefiting from *in situ* conservation action: 1

Result description: Early summer surveys showed the site supports 1,750 individuals, while 1% threshold for the subspecies is 1,700. The monitoring will be continued as a PhD project.

T-013 (KSR 10)

Number of threatened species benefiting from *in situ* conservation action: 0

Result description: Biodiversity And Nature Conservation Association (BANCA) are continuing to do this as much as they can, but activities have been reduced in the recent period.

T-015 (KSR 10)

Number of threatened species benefiting from *ex situ* conservation action: 1

Result description: As of 20 December 2021, the captive population of Madagascar Pochard in two Antsohihy conservation breeding centres stands at 110 birds (63 males and 47 females); 34 birds hatched in 2021 (three of these did not survive); 35 birds bred at the centres during 2020 and 2021 were released at the reintroduction site, Lake Sofia, in October–December.

T-018 (KSR 10)

Number of technical documents provided to support conservation actions: 1

Result description: To date, the wintering coordinated counts between Romania, Bulgaria and Ukraine have proved to be inadequate for population status estimate. 50–60% of the presumed global population has been registered during coordinated counts across the three countries and no new wintering areas have been found via telemetry studies. However, in 2021 a successful autumn monitoring expedition was conducted in partnership with the African-Eurasian Migratory Waterbird Agreement (AEWA) Secretariat, co-funded by AEWA and the EU LIFE Programme. The results are due end-January, but should provide an update on the population status and numbers of the species – the first since 2016. In addition, the TWSG coordinator for Europe has contributed to the assessment of the IUCN status of the species and has made considerable corrections to the proposed population numbers and status.

T-019 (KSR 10)

Number of species with increased or prevented decrease in population or range size, as a result of conservation actions: 1

Result description: Since January 2021, the whole area around Lake Manych Gudilo in Kalmykia (Russia) has been set up with no spring hunting and makes a safe staging area for the species. It is a key staging site for the species in spring and this will significantly reduce exposure to illegal/accidental killing during hunting season on the way to breeding sites. In addition, Aydam 2012 Ltd has expanded its non-hunting zone within the hunting estate of Kulykol Lake, Kazakhstan, to cover 35% of its territory. Thus, a key autumn staging site for the species, through which the whole global population of the species passes and is a key feeding area, is safe for the Red-breasted Goose. These two actions will help to significantly reduce illegal killing during hunting season. In Bulgaria, the non-hunting zone around the key roosting lakes along the coast has been extended from 100 m around shoreline to 350 m. Further, in Romania, Bulgaria and Ukraine, active mixed patrolling is organised in cooperation with authorities to reduce illegal killing and poaching. In Kazakhstan,

regular raids are organised with state inspectorate on game control and last year a poacher was prosecuted for killing a Red-breasted Goose. However, illegal killing during hunting season and poaching still pose a big problem for the species; some hunting estate owners and managers in Kazakhstan do continue to practice illegal activities and evidence of killed Red-breasted Geese exists. The planned population status report will shed more light on the improvement or stabilisation of the species population.

NETWORK

Membership

T-002 (KSR 2)

Website online: 1

Result description: The website is now up and live at https://threatenedwaterfowlsg.org/.

T-004 (KSR 2)

Number of SSC members recruited: 1

Result description: The email group has 135 members as of December 2021. The Facebook group (https://www.facebook.com/groups/1507832869398959) has 1,940 members. As of 20 December 2021, 65 members had joined/re-joined SSC Threatened Waterfowl Specialist Group 2021–2025.

COMMUNICATE

Communication

T-011 (KSR 13)

Number of print communications materials distributed in relation to specific taxonomic groups: 0

Result description: Plans need to be completed and will be available in the near future.

T-023 (KSR 13)

Number of digital communication outputs developed in relation to specific taxonomic groups: 5

Result description: An interactive exhibit has been designed and produced in four national languages for Bulgaria, Kazakhstan, Russia and Ukraine. It tells the story and depicts the migration of the species and the challenges it faces, from displacement by investment projects, through change of land management and climate change challenges. The exhibit has been shown in key cities and towns in all four range countries and has been visited by over 25,000 people, including children and the general public in the four countries. A set of awareness and information materials has been produced and distributed amongst stakeholder groups, i.e. hunters and local communities, including information materials about the status and migration of the species, identification guides for hunters to separate different goose species and information materials about the restrictions in hunting and zonation of certain areas. Two short videos about the species have been produced and were distributed around World Bird Migratory Days: Emilia's Story The Migration of a Red-Breasted Goose and The Migration of the Red-breasted Goose – Flight Connecting Countries. Both videos have been seen by thousands of viewers around the globe. The species has been depicted and showcased by the AEWA Secretariat during World Bird Migratory Days both in 2020 and 2021. The AEWA Red-breasted Goose Working Group and the Bulgarian Society for the Protection of Birds (BSPB) Life project Facebook pages were followed by over 5,000 people and news items there have been reaching 3–10,000 people on Facebook. The pages were hacked last year and a new Life project Facebook page has been set up which slowly grows, but some news items have reached over 10–15,000 viewers. The Facebook pages of the Goose Specialist Group and TWSG are also used to share information on work and activities for the species. The case of the killing of the goose Emilia in Romania made first page news in the country and publications and coverage on the issue by Romanian Ornithological Society (SOR)/BirdLife Romania reached over 1,000,000 people in the country. Television coverage of the first successful tagging of Red-breasted Goose in North Kazakhstan in 2019 was covered by national and regional media in Kazakhstan and viewed by an audience of over 700,000 people. Russian partners – the Working Group in Anseriformes of North Eurasia and Chernie Zemly Reserve management – have produced two videos on the species viewed by thousands of people and shown on regional television stations.

Acknowledgements

TWSG would like to thank members for their regular updates and points of interest on the many taxa of concern to the group. We are particularly grateful for the ongoing support of projects from Yihenew Aynalem, Richard Hearn, Nicky Petkov, Floriot Randrianarimangason, Felix Razafindrajao, Tarun K. Roy, Diana Solovyeva and Richard Thorns. Many partner organisations have been involved across the projects and we are indebted to the support of Asity Madagascar, Association for the Conservation of Biodiversity of Kazakhstan, Augsburg Zoo (Germany), Baer's Pochard Task Force, BirdLife International, Biodiversity And Nature Conservation Association (BANCA) BirdLife Myanmar, Bulgarian Society for the Protection of Birds (BSPB), Changjiang Conservation Foundation, China Birdwatching Association, Durrell Wildlife Conservation Trust, European Association of Zoos and Aquaria (EAZA), Institute of the Biological Problems of the North, Kinross Gold (Russia), Life Programme, Ministère de l'Environnement et du Développement Durable (Madagascar), Romanian Ornithological Society (SOR), Saving the Madagascar Pochard, SEE Foundation (Society of Entrepreneurs and Ecology), State Atomic Energy Corporation 'Rosatom', The Conservation Leadership Programme Team, The Peregrine Fund, Wildfowl & Wetlands Trust and Working Group on Anseriformes of Northern Eurasia (WGG). S. Imad Cherkaoui, Will Duckworth, Bruce Dugger, Igor Fefelov, Tony Fox, Andy Green, Ricardo Matus and Eileen Rees have given the group support throughout. Gary Kramer has kindly allowed us to use his exceptional photographs and Dan Wright has maintained the group's website.

Summary of achievements

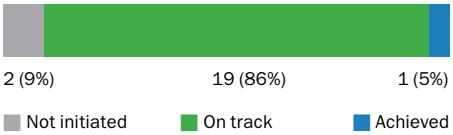
Total number of targets 2021–2025: 22

Geographic regions: 3 Africa, 12 Asia, 13 Europe

Actions during 2021:

Assess:	3 (KSR 5)
Plan:	2 (KSR 8, 9)
Act:	8 (KSR 10)
Network:	2 (KSR 2)
Communicate:	2 (KSR 13)

Overall achievement 2021–2025:



IUCN SSC Vulture Specialist Group





CO-CHAIR
Andre Botha
Endangered Wildlife Trust, South Africa

CO-CHAIR
Chris Bowden
Royal Society for the Protection of Birds, The Lodge, Sandy, Bedfordshire SG19 2DL, UK, c/o Jakkur, Bangalore, India

RED LIST AUTHORITY COORDINATOR
Darcy Ogada
The Peregrine Fund, Boise, Idaho, US

NUMBER OF MEMBERS
125

SOCIAL MEDIA AND WEBSITE
Facebook: https://www.facebook.com/groups/254944394619396
Website: https://www.iucnvsg.org

Mission statement

The IUCN SSC Vulture Specialist Group (VSG) aims to advocate and create greater awareness of the plight of vultures and coordinate and support effective conservation activities to their benefit.

Projected impact 2021–2025

Improve the conservation status of all Endangered and Critically Endangered vulture species and improve awareness of the plight of these birds globally.

Targets 2021–2025

ASSESS

T-002 Develop and expand the scope of Wildlife Poisoning Databases to include Asia and the Americas.

T-008 Publish at least four editions of the VSG journal *Vulture News*.

PLAN

T-001 Support implementation of the Convention on Migratory Species (CMS) Vulture Multi-species Action Plan (MsAP) at a regional and sub-regional level.

T-007 Promote and share national and regional updates to Action Plans when finalised and published.

ACT

T-004 Publish at least one agreed position statement on a relevant topic annually.

T-006 Submit letters of enquiry/concern related to issues of concern that affect vultures to relevant target audiences.

T-012 Act as a key partner in promoting the CMS Multi-species Action Plan for African-Eurasian Vultures.

T-016 Engage members and others to implement the CMS Vulture Multi-species Action Plan for all Old World vultures.

NETWORK

T-013 Build and develop VSG membership.

T-014 Develop links with other relevant SSC groups, e.g. Conservation Planning Specialist Group (CPSG), African Elephant Specialist Group, Canid Specialist Group.

T-015 Participate in and support the work of the SSC CPSG.

COMMUNICATE

T-003 Produce best practice guidelines in terms of the monitoring, research and conservation of vultures.

T-005 Provide support letters for projects and activities as requested and agreed.

T-009 Promote International Vulture Awareness Day each September.

T-010 Produce two newsletters annually.

T-011 Maintain and improve VSG website presence.

Activities and results 2021

ASSESS

Research activities

T-002 (KSR 5)

Number of established, functional databases, access to said data, interaction between database managers: 1

Result description: We have provided guidance and examples to the Saving Asia's Vultures from Extinction (SAVE) consortium of formats that can be considered for a mortalities database that will include poisoning mortalities.

T-008 (KSR 5)

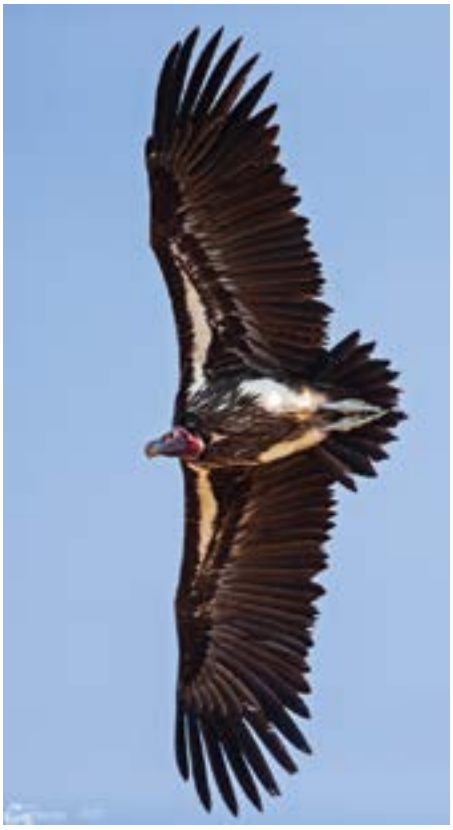
Number of publications produced in internal journals of SSC groups: 2

Result description: Two editions of *Vulture News* were published in 2021 and we had a successful transition between Dr Campbell Murn, who stepped down as Editor, and Dr Louis Phipps, who took up the position. Volume 80 (https://www.ajol.info/index.php/vulnew/issue/view/20426) was published as a joint effort between these

Critically Endangered Ruppell's Vulture (*Gyps rueppelli*), Kidepo NP, Uganda
Photo: Andre Botha



Endangered Lappet-faced Vulture (*Torgos tracheliotos*), Gonarezhou National Park, Zimbabwe
Photo: Andre Botha



two colleagues and Volume 81 (https://www.ajol.info/index.php/vulnew/issue/view/20714) was Dr Phipps' first solo effort as editor.

PLAN

Planning

T-001 (KSR 8)

Number of conservation plans/strategies developed: 8

Result description: Most of our members in Africa, Asia and Europe are actively involved in implementing or supporting various actions contained in the Vulture MsAP in their day-to-day activities. VSG members have also provided input into the drafting of national vulture conservation strategies in Nepal, South Africa, Botswana, Kenya and Zambia.

Policy

T-007 (KSR 9)

Number of policies where SSC members provided technical input: 5

Result description: The SAVE consortium strategy to address the threat of non-steroidal anti-inflammatory drugs (NSAIDS) to vultures in South Asia was updated and shared with all stakeholders during the first quarter of 2021 by the VSG Co-Chair, Chris Bowden. VSG members provided input and participated in the drafting of national vulture conservation strategies in Botswana, South Africa, Kenya and Zambia.

ACT

Conservation actions

T-006 (KSR 10)

Number of intervention letters addressing major drivers/emerging threats of species or population loss: 1

Result description: No new letters of enquiry/concern were sent to relevant target audiences during the review period. VSG was a co-signatory to a letter addressed to the government of Guinea Bissau expressing concern over the large-scale poisoning of vultures that happened in that country in 2020. This was an updated letter following a first that was sent in 2020.

T-012 (KSR 10)

Number of actions addressing major drivers/emerging threats of species or population loss: 7

Result description: Seven VSG members sit on the CMS Vulture MsAP working group that supports its implementation.

T-016 (KSR 10)

Number of actions addressing major drivers/emerging threats of species or population loss: 1

Result description: We are an Implementing Partner in the Vulture MsAP together with CMS Raptors MoU, BirdLife International and the Vulture Conservation Foundation, and the majority of our members are actively involved in the implementation of one or more MsAP actions.

Policy

T-004 (KSR 10)

Number of position statements addressing major drivers/emerging threats of species or population loss: 1

Result description: A position statement – General comments on the European Chemicals Agency (ECHA) restriction proposal on the use of lead in gunshot outside of wetlands, bullets in any terrain and in fishing tackle – was produced in September 2021.

NETWORK

Capacity building

T-015 (KSR 2)

Number of people trained in conservation planning: 2

Result description: See comments under target T-014. We are working with CPSG in the drafting of an Action Plan to combat belief-based trade in vultures in West Africa and on an Action Plan towards the conservation of Rüppell's Vulture (*Gyps rueppelli*) in the Mediterranean.



Three species of African Vulture,
Gonarezhou National Park, Zimbabwe
Photo: Andre Botha



Critically Endangered White-headed
Vulture (*Trigonoceps occipitalis*),
QEP, Uganda
Photo: Andre Botha

Ugandan Vulture Fieldwork Team,
Kidepo National Park
Photo: Andre Botha



Membership

T-013 (KSR 2)

Number of SSC members recruited: 12

Result description: Membership has grown to 125 members worldwide.

Synergy

T-014 (KSR 3)

Number of mutually beneficial institutional partnerships established: 2

Result description: We have engaged with CPSG to assist in a planning process to combat the impact of belief-based use and trade on vultures in West Africa and are busy with discussions towards a formal planning workshop that will take place in 2022.

We are also working with the IUCN Mediterranean Regional Office and CPSG on the establishment of a working group and action plan focused on Rüppell's Vulture in the Mediterranean.

COMMUNICATE

Communication

T-005 (KSR 13)

Number of letters of support signed by Chairs: 9

Result description: A total of nine support letters for projects and associated funding proposals were provided by the VSG Co-Chairs to various stakeholders upon request.

T-009 (KSR 13)

Accomplished and recorded participation on the website: Ongoing.

Result description: A total of 107 organisations from 41 countries registered and participated in International Vulture Awareness Day 2021 (IVAD2021) on the website https://www.vultureday.org.

T-010 (KSR 12)

Number of Species e-bulletin, Save Our Species newsletter, SSC Groups' newsletter editions produced: 2

Result description: Two newsletters were produced in March and September 2021 and distributed to more than 800 readers.

T-011 (KSR 13)

Number of websites/social media developed: 1

Result description: The website is functional, maintained and updated regularly (https://www.iucnvsg.org/).

Scientific meetings

T-003 (KSR 12)

Produce at least one best practice guideline every 2 years: 1

Result description: No guidelines were released in 2021 due to limitations imposed by the COVID-19 pandemic.

Acknowledgements

We would like to again thank the Royal Society for the Protection of Birds and the Endangered Wildlife Trust for enabling the Co-Chairs to continue in their roles and allocate substantial amounts of their time to the work of the IUCN SSC Vulture Specialist Group. Thank you also to our Steering Committee members/Regional Chairs Darcy Ogada, José Tavares, Sergio Lambertucci and Keith Bildstein for their continued support and input. Particular thanks are due to Campbell Murn who stepped down as Editor of *Vulture News* at the end of 2020 after a decade of service. We welcomed Louis Phipps as his replacement. Further acknowledgement is due to the Hawk Conservancy Trust, especially volunteer Lesley Jerome, for their continued administrative support and for initiating work on the VSG website. We continue to work closely with a range of other organisations, but would like to acknowledge BirdLife International, Vulture Conservation Foundation, the CMS Raptors MoU and IUCN SSC staff for their continued support.

Summary of achievements

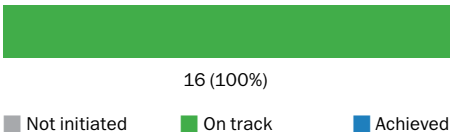
Total number of targets 2021–2025: 16

Geographic regions: 16 Global

Actions during 2021:

Assess:	2 (KSR 5)
Plan:	2 (KSR 8, 9)
Act:	4 (KSR 10)
Network:	3 (KSR 2, 3)
Communicate:	5 (KSR 12, 13)

Overall achievement 2021–2025:



IUCN SSC Woodcock and Snipe Specialist Group



SOCIAL MEDIA AND WEBSITE
Website: https://www.wetlands.org/our-network/specialist-groups/woodcock-and-snipe-specialist-group/

CHAIR
David Gonçalves
Research Centre in Biodiversity and Genetic Resources (CIBIO), University of Porto, Campus de Vairão, Vairão, Vila do Conde, Portugal; Biology Department, Faculty of Sciences, University of Porto, Porto, Portugal

RED LIST AUTHORITY COORDINATOR
BirdLife International

NUMBER OF MEMBERS
130

Mission statement

The first aim of the Woodcock and Snipe Specialist Group (WSSG) is to provide up-to-date knowledge on eight woodcock and 18 snipe species in the world. It is also expected to encourage new research and to facilitate contacts between researchers. WSSG plays the role of expertise platform for biologists, conservationists and wildlife managers interested in woodcocks and snipes to share and exchange of information. As these are games species, the final objective is to ensure the sustainable use of the populations.

Projected impact 2021–2025

With the actions that we intend to develop within the scope of the proposed targets for the quadrennium, we hope to increase knowledge about the various woodcock and snipe species and contribute to their conservation and definition of future actions.

Targets 2021–2025

ASSESS

T-002 Review conservation status of all woodcock and snipe species.

T-010 Participate in the re-evaluation of the IUCN Red List status of the world's birds, with BirdLife (IUCN Red List Authority for birds).

PLAN

T-008 Continue working closely with entities involved in the management of woodcock and snipe populations.

NETWORK

T-001 Review membership and expand the taxonomic and geographic representation for the group by inviting 15 new experts with emphasis on increasing the representation of members from South America, Africa and Asia.

COMMUNICATE

T-003 Publish the Proceedings of the 8th Woodcock and Snipe Workshop.

T-004 Publish the Woodcock and Snipe Specialist Group annual newsletter.

T-009 Organise the 9th Woodcock and Snipe Workshop.

Activities and results 2021

ASSESS

Red List

T-010 (KSR 6)

Number of species re-evaluated for the IUCN Red List status of the world's birds, with BirdLife: 5

Result description: The group continues to collaborate with BirdLife (IUCN Red List Authority for birds) on the re-evaluation of woodcock and snipe. Several members and collaborators reviewed or suggest revisions to the factsheets of 12 species: Common Snipe (*Gallinago gallinago*), Wilson's Snipe (*G. delicata*), Latham's Snipe (*G. hardwickii*), Swinhoe's Snipe (*G. megala*), Jack Snipe (*Lymnocryptes minimus*), American Woodcock (*Scolopax minor*), Eurasian Woodcock (*S. rusticola*); we include here also the five species from the genus *Coenocorypha* reviewed by Colin Miskelly: Auckland Snipe (*Coenocorypha aucklandica*), North Island Snipe (*C. barrierensis*), Snares Island Snipe (*C. huegeli*), South Island Snipe (*C. iredalei*) and Chatham Snipe (*C. pusilla*).

Eurasian Woodcock (*Scolopax rusticola*)
ringing during winter
Photo: David Gonçalves



Common Snipe (*Gallinago gallinago*)
ringing during winter in continental Portugal
Photo: David Gonçalves



Common Snipe (*Gallinago gallinago*)
habitat in the island of Flores (Azores)
Photo: David Gonçalves



Research activities

T-002 (KSR 5)

Number of scientific publications about species research that acknowledge SSC affiliation: 0

Result description: The provisional structure of a review article on the conservation and policies of woodcock and snipe populations was prepared. Invitations were sent to potential collaborators in various regions of the world. We hope to make progress in the process shortly. Coordinators: Birgita Hansen, David Gonçalves, Eduardo Gallo-Cajiao and Richard Fuller.

PLAN

Policy

T-008 (KSR 9)

Number of documents provided to support/guide policy making: 0

Result description: Although there is no formal publication in this period, collaboration with entities involved in the management of woodcock and snipe populations continues, for example, with the 'Fédération des Associations Nationales des Bécassiers du Paléarctique occidental' and the 'Office Français de la Biodiversité'.

NETWORK

Membership

T-001 (KSR 2)

Number of SSC members recruited: 1

Result description: Recruiting new members has not been easy. More time will be dedicated to this objective.

COMMUNICATE

Communication

T-003 (KSR 12)

Publication of the Proceedings of the 8th Woodcock and Snipe Workshop: 0

Result description: Unfortunately, due to various difficulties, the publication of the proceedings is delayed.

T-004 (KSR 12)

Number of Species e-bulletin, Save Our Species newsletter, SSC Groups' newsletter editions produced: 0

Result description: Unfortunately, due to various difficulties, the publication of newsletter number 46 is delayed.

Acknowledgements

We would like to thank the following members and collaborators for their work in reviewing the species factsheet (in alphabetic order): Al Stewart (Upland Game Bird Specialist and Programme Leader, Michigan Department of Natural Resources, Michigan, US); Alexander Mischenko (A.N. Severtsov Institute of Ecology and Evolution, Moscow, Russia); Birgita Hansen (Centre for eResearch and Digital Innovation (CeRDI), Federation University Australia, Mt Helen, Australia); Colin Miskelly (Museum of New Zealand Te Papa Tongarewa); David G. Krementz (US Geological Survey Arkansas Cooperative Fish and Wildlife Service, Department of Biology, University of Arkansas, Fayetteville, Arkansas, US); David Gonçalves (Biology Department, Faculty of Sciences, University of Porto; CIBIO, Research Center in Biodiversity and Genetic Resources, InBIO Associated Laboratory, University of Porto; BIOPOLIS Programme in Genomics, Biodiversity and Land Planning, CIBIO, Portugal); Edward Mongin (APB-Birdlife Belarus, Belarus); Erik Blomberg (Department of Wildlife, Fisheries and Conservation Biology, University of Maine, US); James M. Carrol (Abraham Baldwin Agricultural College, Department of Forest Resources, Tifton, Georgia, US); Kévin Le-Rest (Office français de la biodiversité, France); Leho Luigujoe (Estonian University of Life Sciences, Institute of Agricultural and Environmental Sciences, Estonia); Stephen Garnett (College of Engineering, Information and the Environment, Charles Darwin University, Australia); Tatiana Sviridova (A.N. Severtsov Institute of Ecology and Evolution of the Russian Academy of Sciences, Moscow, Russia); Yoshiya Odaya (Abiko City Museum of Birds, Abiko, Japan).

Summary of achievements

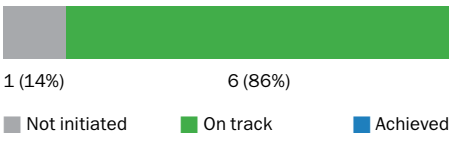
Total number of targets 2021–2025: 7

Geographic regions: 7 Global, 1 Africa, 2 America, 2 Asia, 2 Europe

Actions during 2021:

Assess:	2 (KSR 5, 6)
Plan:	1 (KSR 9)
Network:	1 (KSR 2)
Communicate:	2 (KSR 12)

Overall achievement 2021–2025:



IUCN SSC Anguillid Eel Specialist Group



SOCIAL MEDIA AND WEBSITES

www.zsl.org/conservation/species/fish-and-invertebrates/eel-conservation/iucn-anguillid-eel-specialist-group

www.iucnffsg.org/about-ffsg/anguillid-specialist-sub-group/

CHAIR
Mathew Gollock
Zoological Society of London, London, UK

RED LIST AUTHORITY COORDINATOR
David Jacoby
Institute of Zoology, Zoological Society of London, London, UK

NUMBER OF MEMBERS
10

Mission statement

To coordinate effective conservation and management activities for the benefit of eel species, as well as acting as advocates and increasing awareness of the threats to them.

Projected impact 2021–2025

The Anguillid Eel Specialist Group (AESG) will continue to engage in management and policy fora relating to anguillid eels in order to ensure these are best informed by Red List assessments and other evidence-based sources.

Targets 2021–2025

ASSESS

T-001 Complete Red List assessment of the American Eel (*Anguilla rostrata*).

T-003 Increase knowledge of four Data Deficient species.

T-007 Complete European regional assessment for the European Eel (*Anguilla anguilla*).

T-013 Assess Green Status of the European Eel.

PLAN

T-004 Lead the development of the Convention on Migratory Species (CMS) Action Plan for the European Eel.

T-005 Ensure robust science relating to anguillid eels is fed into CITES meetings, working groups and decisions.

T-006 Engage with International Council for the Exploration of the Sea (ICES) Working Group on Eel on annual advice and associated ad hoc workshops.

T-008 Maintain representation on the Atlantic State Marine Fisheries Commission eel-focused activities/assessments.

T-010 Continue engagement with the 'Informal Consultation' on the Japanese Eel (*Anguilla anguilla*).

T-011 Maintain engagement with the Sargasso Sea Commission.

NETWORK

T-002 Recruit four new members to cover regional and thematic gaps.

T-014 Represent on the Freshwater Conservation Committee.

T-015 Represent on the Marine Conservation Committee.

COMMUNICATE

T-009 Organise three public presentations to communicate the conservation work of the AESG and how Red List assessments are developed.

T-012 Hold annual knowledge-sharing webinars with Maori representatives in relation to the New Zealand Long-fin Eel (*Anguilla dieffenbachii*) in New Zealand.

Activities and results 2021

ASSESS

Red List

T-001 (KSR 6)

Number of global Red List reassessments completed: 0

Result description: Red List assessment of the American Eel has been delayed due to COVID-19; we will be submitting in April 2022 in line with the next Red List update.

T-007 (KSR 6)

Number of national Red List reassessments published: 0

Result description: European regional assessment for the European Eel is ongoing.

Research activities

T-003 (KSR 5)

Number of research projects completed or supported by SSC members per taxonomic group and region: 0

Result description: We will progress the Green Status assessment of the European Eel in the coming 12 months.

PLAN

Planning

T-010 (KSR 9)

Workshop held to engage Japanese Eel range states: 0

Result description: This workshop will be held virtually in April 2022. Two members of the AESG have been invited to attend as experts.



Least Concern Marbled Eel, *Anguilla marmorata*
Photo: Matthew Gollock

Policy

T-004 (KSR 9)

Number of policies where SSC members provided technical input: 0

Result description: Development of the CMS Action Plan for the European Eel is ongoing. The document presently sits with the CMS Secretariat, and we are waiting for guidance as to the next steps.

T-005 (KSR 9)

Number of MEA meetings attended by the SSC group: 2

Result description: AESG members were in attendance at the 73rd meeting of the CITES Standing Committee and 31st meeting of the CITES Animals Committee (AC31). AESG members were involved in the Working Group struck at AC31 to develop Decisions for the Conference of Parties in November 2022.

Number of documents provided to support/guide policy making: 1

Result description: Two AESG members were involved as authors on a document relating to use and trade of anguillid eels submitted to CITES in November 2021 (available at: https://cites.org/sites/default/files/eng/com/sc/74/E-SC74-64-01.pdf). This has been published and will be considered at CITES meetings in 2022 and 2023.

T-006 (KSR 9)

Number of documents provided to support/guide policy making: 2

Result description: Two AESG members attended the ICES Working Group on Eel meeting to develop the annual report (https://www.ices.dk/sites/pub/Publication%20Reports/Forms/DispForm.aspx?ID=38324) and associated Advice to European Eel Range States (https://www.ices.dk/sites/pub/Publication%20Reports/Advice/2021/2021/ele.2737.nea.pdf). The AESG was also represented at the ICES Workshop on the future of eel advice (https://www.ices.dk/community/groups/Pages/WKFEA.aspx). A workshop was held to evaluate the EU Eel Management Plans by country (WKEMP3); the AESG was represented at the first meeting in late 2021 and will attend the second meeting in early 2022 prior to the report being published.

T-008 (KSR 9)

Number of policies where SSC members provided technical input: 0

Result description: The Chair of the IUCN ASEG chaired a meeting of American Eel Range States (see http://www.sargassoseacommission.org/our-work/workshops/second-range-states-workshop-on-the-american-eel).

T-010 (KSR 9)

Number of policies where SSC members provided technical input: 0

Result description: This links to the Japanese Eel workshop and has been delayed due to COVID-19.

T-011 (KSR 9)

Number of policies where SSC members provided technical input: 0

Result description: The Sargasso Sea Commission organised a workshop for American Eel Range States which the Chair of the AESG chaired (see http://www.sargassoseacommission.org/our-work/workshops/second-range-states-workshop-on-the-american-eel).

NETWORK

Membership

T-002 (KSR 2)

Number of SSC members recruited: 0

Result description: Recruiting of new members has been postponed due to delays in existing work as a result of COVID-19; we expect to do this in the coming 12 months.

New members have been identified.

T-014 (KSR 3)

Membership on Freshwater Conservation Committee: 1

Result description: We continue to engage as a member of the Freshwater Conservation Committee. The Chair was a co-author on the recent paper relating to freshwater conservation, along with several other members of the Freshwater Conservation Committee (Maasri, A., et al. (2022). 'A global agenda for advancing freshwater biodiversity research'. *Ecology Letters* 25:255– 263. https://doi.org/10.1111/ele.13931).

T-015 (KSR 3)

Membership on Marine Conservation Committee: 1

Result description: We continue to engage with the Marine Conservation Committee. We lead a joint presentation on the concept of Aquascapes with the Marine Conservation Committee and Freshwater Conservation Committee at the IUCN World Conservation Congress.

COMMUNICATE

Communication

T-009 (KSR 12)

Number of virtual meetings: 0

Result description: This target has not been initiated to date, but we are presently sourcing funding to establish a coordination group for UK eel stakeholders which should present an opportunity for public engagement.

T-012 (KSR 12)

Number of virtual meetings: 0

Result description: We remain in contact with Maori representatives, but no webinars have been scheduled to date.

Acknowledgements

We would like to thank Monni Bohm for support during the year.

Summary of achievements

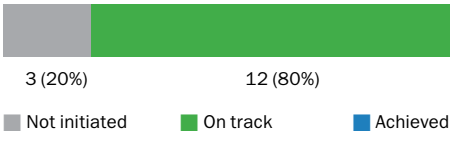
Total number of targets 2021–2025: 15

Geographic regions: 10 Global, 1 America, 1 Asia, 1 Europe, 1 Oceania, 1 Body of water

Actions during 2021:

Assess: 3 (KSR 5, 6)
Plan: 8 (KSR 9)
Network: 3 (KSR 2, 3)

Overall achievement 2021–2025:



2021 Report

IUCN SSC Freshwater Fishes Specialist Group





CO-CHAIR
Kathy Hughes
WWF-UK, Woking, UK

CO-CHAIR
Brian Zimmerman
Bristol Zoological Society, Bristol, UK

RED LIST AUTHORITY COORDINATORS
Jörg Freyhof
Leibniz-Institute of Freshwater Ecology and Inland Fisheries (IGB), Berlin, Germany

Rajeev Raghavan
Conservation Research Group, St. Albert's College, Kochi, India

NUMBER OF MEMBERS
132

SOCIAL MEDIA AND WEBSITE
Facebook: @FreshwaterFishSpecialistGroup
Website: **https://freshwaterfish.org/**

Mission statement

To be the global forum for people pursuing the conservation of freshwater fishes.

Projected impact 2021–2025

The Freshwater Fish Specialist Group (FFSG) will: (1) Lead and support the science upon which freshwater fish conservation can succeed; (2) Support best practice *in situ* conservation for freshwater fishes; (3) Support best practice *ex situ* conservation for freshwater fishes; (4) Strengthen the link between freshwater fish conservation science and policy to support impactful policy decision making; (5) Raise awareness and engagement on freshwater fishes; (6) Inspire the next generation of fish scientists and conservationists.



Mezquital Pupfish (*Cyprinodon meeki*)
Photo: Brian Zimmerman

Targets 2021–2025

ASSESS

T-024 Assist IUCN Freshwater Biodiversity Unit in completing Red List conservation status assessments of all freshwater fishes (ca. 18,000 species). This includes supporting reassessments, assessments of newly described species, and review of Red List 'Recommended Conservation Actions' for freshwater fish and identification.

T-025 Expand taxonomic, geographic and ecosystem coverage of freshwater fishes included in WWF's Living Planet Index (LPI); ensure FFSG member involvement in at least two publications on Freshwater LPI.

T-039 Review FFSG Steering Committee and membership opportunities to increase participation of early career members.

PLAN

T-026 Collate a reference list of existing *in situ* conservation practices/activities to inform best practices that achieve results.

ACT

T-033 Review Red List 'Recommended Conservation Actions' for freshwater fish that would benefit from *ex situ* management and link with facilities to ensure each species is considered and included where possible.

NETWORK

T-018 Update current FFSG membership list with confirmed profiles/contacts.

T-019 Identify and engage Regional/Thematic leads to cascade/gather information.

T-020 Conduct gap analysis for geographic/species group/thematic representation and work with Steering Committee to fill critical gaps.

T-021 Identify existing connections across IUCN (e.g. across all Commissions) that relate to freshwater fish and engage/align with those groups.

T-023 Host periodic get togethers. The aim would be to have these in person, but realistically these will likely be via webinar due to COVID-19 and budget.

T-027 Identify conservation practitioners working on *in situ* conservation for freshwater fishes and invite them to become members of FFSG.

T-029 Contact zoos/aquariums/breeding centres working on *ex situ* conservation for freshwater fishes; identify contacts and add to membership.

T-030 Link FFSG website to websites of European Association of Zoos and Aquaria (EAZA), Association of Zoos & Aquariums (AZA), European Union of Aquarium Curators (EUAC), universities, research institutes and others working on *ex situ* conservation.

T-037 Represent freshwater fish biodiversity on fisheries platforms (i.e. Inland Fisheries Alliance; InFish; via research and publications).

T-040 Seek advice from those expert in youth engagement, including at SSC, Synchronicity Earth and Bristol Zoological Society (BZS), and follow advice that will enable us to reach early career members.

T-042 Review and update the group's workplan.

T-043 Re-establish Steering Committee of the Freshwater Fishes Specialist Group.

COMMUNICATE

T-022 Ensure up-to-date website facilitates knowledge sharing between members, and between members and wider audiences.

T-028 On the FFSG website, publish quarterly (spotlight/in-focus) articles on conservation projects around the world related to freshwater fish conservation.

T-031 Post Regional Collection Plans for freshwater Teleost on the FFSG website (create page on FFSG website for *ex situ* work).

T-032 Through a conference session at the International Aquarium Congress (IAC), create a new platform for engaging directly with public aquaria and zoos to initiate joint proposals based on resource needs and shared objectives.

T-035 Act as a conduit between freshwater fish scientists and decision makers (i.e. Ramsar, Convention on Biological Diversity (CBD)), and freshwater fish scientists and policy influencers (i.e. Conservation International, WWF, Alliance for Freshwater Life) to ensure that freshwater fishes are considered in major policy decisions (i.e. CBD, Ramsar) and that recommended conservation actions are implemented.

T-036 Engage with key strategic coalitions and campaigns, including Shoal's INSPIRE, the Alliance for Freshwater Life and World Fish Migration Day.

T-038 Update the FFSG website to become an up-to-date and flexible knowledge sharing platform.

T-041 Support Freshwater Conservation Committee communications highlighting freshwater species at risk and threats to freshwater systems.

Activities and results 2021

ASSESS

Red List

T-024 (KSR 6)

Number of global Red List reassessments completed: 720

Result description: FFSG members contributed to Red List assessments and supported the processing of Red List assessments in collaboration with the Freshwater Biodiversity Unit. Specific focus was on the fishes of South America. Overall, FFSG were directly involved as assessors for 320 species published in 2021 and aided the assessment process via recommendation of assessors and provision of species lists for another 400 species published on the IUCN Red List in 2021.

Research activities

T-025 (KSR 6)

Number of publications: 0

Result description: In summer 2021, FFSG member Monni Bohm co-supervised a summer student, placed at Zoological Society of London (ZSL), who conducted a first gap analysis of freshwater fish data in the Living Planet Database, specifically looking at taxonomic and geographical representation, Red List status and life history data/body size, etc. This work is currently being written up as a short communication for publication and provides a first step toward a larger project to improve the representativeness of the freshwater Living Planet Index.

NETWORK

Membership

T-042 (KSR 2)

Initial workplan has been reviewed and established: achieved

Result description: Following a change in leadership of the group, an initial workplan was drafted in the summer/autumn of 2021. A meeting in summer 2021 at Bristol Zoo was held with key collaborators to define the goals of the FFSG.

T-043 (KSR 2)

Steering committee has been re-established: ongoing

Result description: The Steering Committee of the FFSG was reviewed and renewed in 2021, with most positions filled. A first set of online calls, to introduce Steering Committee members and discuss the work of the FFSG, were set for early 2022.

Synergy

T-040 (KSR 3)

Advice from expert in youth engagement to increase representation within FFSG: ongoing

Result description: An expert in youth engagement – Felix Feider of Synchronicity Earth – was secured as FFSG Special Adviser.

COMMUNICATE

Communication

T-041 (KSR 12)

Contribute to and disseminate communications from Freshwater Conservation Committee's Species at risk report (in partnership with Shoal) within and outside SSC: ongoing

Result description: At the end of 2021, the group nominated several freshwater fish species for consideration in the publication. The group continues to contribute to the report with information and review of species information and other content.

Acknowledgements

In kind support provided by the staff of the Bristol Zoological Society.

Summary of achievements

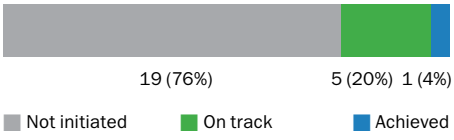
Total number of targets 2021–2025: 25

Geographic regions: 23 Global, 2 Europe

Actions during 2021:

Assess: 2 (KSR 6)
Network: 3 (KSR 2, 3)
Communicate: 1 (KSR 12)

Overall achievement 2021–2025:



IUCN SSC Groupers and Wrasses Specialist Group





SOCIAL MEDIA AND WEBSITE
Website: **https://www.iucn.org/ssc-groups/fishes/grouper-and-wrasse**

CO-CHAIR
Yvonne Sadovy
The University of Hong Kong, Hong Kong (retired)

CO-CHAIR
Matthew Craig
National Oceanographic and Atmospheric Administration, National Marine Fisheries Service, California, US

RED LIST AUTHORITY COORDINATOR
Matthew Craig
National Oceanographic and Atmospheric Administration, National Marine Fisheries Service, California, US

NUMBER OF MEMBERS
28

Mission statement

The Mission of the Groupers and Wrasses Specialist Group is to promote the conservation, management and wise use of groupers and wrasses, and to enhance awareness of the vulnerability of this group of fishes, which includes the groupers (family Epinephelidae) and wrasses (family Labridae), and of the habitats upon which they depend.

Projected impact 2021–2025

The Groupers and Wrasses Specialist Group (GWSG) anticipates that our target activities will positively impact the conservation status of these important species by enhancing the foundational understanding of the Red List process, increasing awareness of common threats and how to mitigate them, and supporting the implementation of conservation strategies.

Targets 2021–2025

ASSESS

T-001 Complete Red List species assessments, initially for selected species of elevated conservation concern (Family: Labridae).

T-003 Publish global review on grouper management in place and its effectiveness.

T-005 Initiate a management and conservation strategy for Camouflage Grouper (*Epinephelus polyphekadion*).

PLAN

T-008 Support spawning site conservation initiatives with NGOs and national government.

ACT

T-009 Provide support letters, technical consultations and other input on management and conservation plans for NGOs and governments as opportunity and need arises.

NETWORK

T-006 Increase Specialist Group member diversity geographically.

T-007 Ensure 15% of Specialist Group members are formally trained in species conservation planning by 2024.

COMMUNICATE

T-002 Produce annual newsletter and upkeep GWSG website.

T-004 Organise seminars on groupers in India.

T-010 Raise awareness with both policy makers and coastal fishing communities on value of groupers in ecosystems through creative communication materials in Western Indian Ocean (WIO) region.

Activities and results 2021

ASSESS

Red List

T-001 (KSR 6)

Number of global Red List reassessments completed: 0

Result description: Planning has commenced for a reassessment workshop for all species of wrasses and parrotfishes with a priority plan for species of elevated conservation concern.

Research activities

T-003 (KSR 5)

Number of scientific publications about species research that acknowledge SSC affiliation: 0

Result description: Review outline and methods are in development and focal group has been created to further develop publication.

T-005 (KSR 5)

Number of scientific publications about species research that acknowledge SSC affiliation: 0

Result description: Global and regional (Asia) assessments have been completed. These will feed into a management strategy.



Humphead Wrasse (*Cheilinus undulatus*)
Photo: Y. Sadovy



Humphead Wrasse (*Cheilinus undulatus*) for sale in Hong Kong Restaurant
Photo: Y. Sadovy

PLAN

Policy

T-008 (KSR 9)

Number of spawning aggregations protected in WIO: 0

Result description: For this we contributed to the Western Central Atlantic Fishery Commission (WECAFC)/Food and Agriculture Organization (FAO) Fishery Management Plan which has been finalised for Nassau Grouper (*Epinephelus striatus*) and Mutton Snapper (*Lutjanus analis*). The plan was reviewed and translated and has been formally assessed and accepted by WECAF's Scientific Advisory Group (FAO).

ACT

Technical advice

T-009 (KSR 10)

Number of technical consultations provided to support conservation actions: 1

Result description: GWSG has provided input and advice for several high-profile policy changes for the Atlantic Goliath Grouper (*Epinephelus itajara*) fishery in the southeast United States and other species of concern.

NETWORK

Capacity building

T-007 (KSR 2)

Number of people trained in assessment tools: 0

Result description: Training workshops for the Asian region have been completed and are ongoing.

Membership

T-006 (KSR 2)

Number of SSC members recruited: Achieved.

Result description: Membership is completed for the 2021–2025 quadrennium. We have added members from two countries and increased membership in Asia, an area of particular concern for our focal species.

COMMUNICATE

Communication

T-002 (KSR 13)

Number of communication products using innovative tools: 0

Result description: Our web content managers have been navigating the ever-changing IUCN web platform and website is current. The newsletter is slated for mid-2022.

T-004 (KSR 13)

Number of SSC members' presentations developed in relation to specific taxonomic groups: 2

Result description: Planning has commenced for a workshop on taxonomy and species identification for grouper species common to fish markets in India. Presentations given on *Cheilinus undulatus* in Hong Kong and by zoom on *Epinephelus striatus*.

Summary of achievements

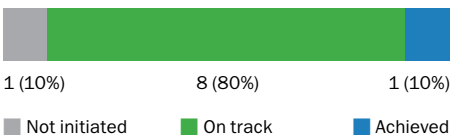
Total number of targets 2021–2025: 10

Geographic regions: 6 Global, 1 Asia, 3 Body of water

Actions during 2021:

Assess: 3 (KSR 5, 6)
Plan: 1 (KSR 9)
Act: 1 (KSR 10)
Network: 2 (KSR 2)
Communicate: 2 (KSR 13)

Overall achievement 2021–2025:



2021 Report

IUCN SSC Salmonid Specialist Group



CHAIR
Peter S. Rand
Prince William Sound Science Center, Cordova, Alaska, US

RED LIST AUTHORITY COORDINATOR
Steven Weiss
University of Graz, Austria

NUMBER OF MEMBERS
8

Mission statement

Identify, assess status, describe key threats, and act to protect the diversity of populations and life histories of salmonids (fishes in the family Salmonidae) throughout their native range in the Northern Hemisphere and work to reduce or mitigate negative effects caused by introduced salmonids around the world.

Projected impact 2021–2025

We continue to support efforts in research and conservation of salmonids. Research and conservation work continues on Sakhalin Taimen (*Parahucho perryi*, Critically Endangered; appears on the IUCN Red List as *Hucho perryi*) in Japan and we maintain relationships with local conservation groups there; we also continue investing time to strengthen partnerships in Russia.

Targets 2021–2025

ASSESS

T-003 Complete range-wide assessments of Atlantic and Pacific salmon that includes status of species and individual subpopulations.

T-005 Reassess status of *Hucho* spp. and Sakhalin Taimen (*Parahucho perryi*).

ACT

T-006 Support efforts to create freshwater, estuarine and marine protected areas or fish reserves to conserve salmonids and support efforts to re-establish migratory corridors.

NETWORK

T-001 Establish regional Atlantic and Pacific Chairs, expand membership of the IUCN Salmonid Specialist Group (SSG) and increase diversity.

T-007 Provide support for proposals that raise funds for research and conservation of species, subspecies or individual populations of salmonids in underserved regions.

COMMUNICATE

T-002 Establish a website for the group to help raise awareness of our work and expand our network.

T-004 Through support from the '50 Freshwater Species at Risk' initiative and other related efforts, raise awareness of the need for conservation of Sakhalin Taimen (*Parahucho perryi*) in Russia and Japan.

T-008 Through outreach efforts, raise awareness of impact of climate change on salmonids.

Activities and results 2021

ASSESS

Red List

T-003 (KSR 6)

Number of new global Red List assessments completed: 0

Result description: We continued to support the Freshwater Biodiversity Unit in their assessment of both Atlantic and Pacific salmon, including several subpopulation assessments. These will be finalised in 2022.

T-005 (KSR 6)

Number of global Red List reassessments completed: 0

Result description: A proposal has been submitted to National Geographic to support workshop and field monitoring efforts.

NETWORK

Membership

T-001 (KSR 2)

Number of SSC members recruited: 2

Result description: I have appointed two regional chairs, Eva Thorstad and Matt Sloat. I am working with these two to extend invitations to new members to help increase diversity and cover new geographies.



Sakhalin Taimen (*Parahucho perryi*), featured in the Fantastic Freshwater report
Photo: Seiji Narita, National Institute for Environmental Studies (NIES)

Synergy

T-007 (KSR 1)

Number of 'funding' partners established and maintained: 2

Result description: We assisted in the development of a proposal with a new research and conservation partner in Morocco to focus new work on Dades Trout (*Salmo multipunctata*) in the Atlas Mountains of Morocco. I am the lead investigator on a new proposal to National Geographic Society submitted in 2021 for research and conservation on Huchen and Taimen in Austria, Mongolia, Russia and Japan.

COMMUNICATE

Communication

T-004 (KSR 13)

Number of print communications materials distributed in relation to specific taxonomic groups: 1

Result description: The IUCN SSG nominated two species (Sakhalin Taimen, *Parahucho perryi*, and Danube Salmon, *Hucho hucho*) for the '50 Freshwater Species at Risk' initiative. The Freshwater Conservation Committee ultimately selected one of these species (Sakhalin Taimen) to serve as one of the representative fish species on the list.

Summary of achievements

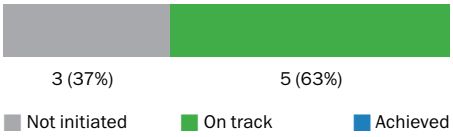
Total number of targets 2021–2025: 8

Geographic regions: 4 Global, 1 Africa, 1 America, 3 Asia, 3 Europe

Actions during 2021:

Assess: 2 (KSR 6)
Network: 2 (KSR 1, 2)
Communicate: 1 (KSR 13)

Overall achievement 2021–2025:



IUCN SSC Seahorse, Pipefish and Seadragon Specialist Group



SOCIAL MEDIA AND WEBSITE
Facebook: @iucnseahorse
Instagram: @iucnseahorse
Twitter: @IUCNSeahorse
Website: https://www.iucn-seahorse.org

CHAIR
Amanda Vincent
Institute for the Oceans and Fisheries, The University of British Columbia, Canada

RED LIST AUTHORITY COORDINATOR
Riley Pollom
Global Center for Species Survival, Indianapolis Zoo, Indianapolis, US

NUMBER OF MEMBERS
41

Mission statement

To promote the long-term conservation of the world's Syngnathiform (seahorses, pipefishes, seadragons and their relatives) fishes through the illumination and alleviation of threats to wild populations and their ocean habitat.

Projected impact 2021–2025

The Seahorse, Pipefish and Seadragon Specialist Group (SPS SG) is focusing on relieving pressures (current and anticipated) on species assessed as threatened on the IUCN Red List, and on the many that are Data Deficient. The threatened species are concentrated in four geographic areas: Southeast Asia (marine and freshwater), South Africa and Atlantic South America. We are generating action at the national level that can make a powerful difference: collaborations, conservation assessments, action plans, implementation of existing laws and more. We are particularly determined to (i) support better management of estuarine systems (where many threatened species are found), (ii) reduce the impacts of bottom trawling and other non-selective fisheries on a wide tranche of species, (iii) ensure that CITES listing of seahorses is made effective and (iv) engage the world in caring about these most remarkable of fishes. We are gathering all possible information to improve Red List assessments for the Data Deficient species, while supporting work on taxonomy and phylogeny that continues to identify yet more syngnathid fish species. A new area of endeavour lies in assessing the likely impacts of climate change on our species with a view to future-proofing our fishes. Our Specialist Group will embrace yet more diversity in membership and engage colleagues from underrepresented sectors, all of whom can offer so much to our globally distributed taxa.

Targets 2021–2025

ASSESS

T-019 Determine priority species of syngnathid for assessment/reassessment.

T-020 Find and collate all available information on priority species, including obscure information and grey literature.

T-021 Complete Red List assessments for priority species.

T-022 Resolve taxonomic uncertainties for syngnathids.

T-024 Promote data collection for seahorses, pipefishes and seadragons, especially for Data Deficient species.

T-023 Create reliable taxonomic tools for syngnathids.

T-025 Identify and determine Key Biodiversity Areas (KBAs) for syngnathids.

PLAN

T-001 Create and disseminate a Priority Action Statement for Knysna Seahorse *(Hippocampus capensis*; Endangered – South Africa).

T-002 Create and disseminate a Priority Action Statement for White's Seahorse *(Hippocampus whitei*; Endangered – Australia).

T-003 Create and disseminate a Priority Action Statement for Estuarine Pipefish *(Syngnathus watermeyeri*; Critically Endangered – South Africa).

T-004 Create and disseminate a Priority Action Statement for *Microphis pleurostictus* (Endangered – Philippines).

T-005 Create and disseminate Priority Action Statements for Vulnerable species.

T-006 Improve implementation of national assessments, rules and laws that affect syngnathids (for priority regions).

ACT

T-007 Develop action plan for syngnathids (especially those of concern) in Argentina, Brazil, South Africa and Malaysia to improve national assessments and rules and laws that affect syngnathids.

T-030 Develop SPS SG urgent action response capacity.



An undescribed pipefish of the genus *Corythoichthys* in the Egyptian Red Sea
Photo: Richard Smith - OceanRealmImages.com



Bluestripe Pipefish (*Doryrhamphus excisus*) off Mozambique
Photo: Louw Claassens

NETWORK

T-018 Collaborate with aquariums, multiplier organisations, NGOs and universities.

T-026 Catalyse joint meeting with Specialist Groups for other marine taxa.

T-027 Find funding for an SPS SG programme officer and meetings every two years.

T-028 Grow SPS SG expertise in strategic ways by taxon, region, discipline, etc.

T-031 Mobilise IUCN for action to support SPS SG needs/collective marine conservation.

T-032 Develop strategic partnerships/synergies with other organisations.

COMMUNICATE

T-011 Use syngnathid flagship species as tools to expose and reverse perverse incentives.

T-012 Create communications tools regarding perverse incentives for target region coastal marine environments.

T-013 Catalyse campaign to effect change in perverse subsidies in coastal marine environments.

T-014 Raise the profile of syngnathid conservation issues (public, policy makers, donors).

T-015 Develop outreach capacity (develop key messages, identify key audiences, including fishers).

T-016 Create synopsis of issues for donors, policy makers, etc.

T-017 Deploy social media strategy.

T-029 Use communications capacity to enhance SPS SG progress.

Activities and results 2021

ASSESS

Red List

T-019 (KSR 6)

Number of new global Red List assessments completed: 1

Result description: A list of priority species of syngnathids for assessment has been identified and created. A draft plan has been established to complete assessments moving forward.

T-019 (KSR 6)

Number of global Red List reassessments completed: 1

Result description: A list of priority species of syngnathids for reassessment has been identified and created.

T-020 (KSR 6)

Number of new global Red List assessments completed: 0

Result description: In 2021, information on newly described seahorse species was collated to help with IUCN Red List assessment through the work of Project Seahorse and volunteers.

T-020 (KSR 6)

Number of global Red List reassessments completed: 0

Result description: In 2021, new data and knowledge was collated on both priority and non-priority species on a regular basis which will aid in the reassessments of syngnathid species under our remit.

T-021 (KSR 6)

Number of new global Red List assessments completed: 0

Result description: In 2021, our SPS SG created a list of priority syngnathid species in need of assessment (newly described species) and those in need of reassessment where new information is available to update conservation status or where current assessments will soon expire. A draft plan to tackle the assessment/reassessment of syngnathid species was created in consultation with SPS SG members. Regional workshops to gather information for assessments of syngnathid species are planned for 2022.

Research activities

T-022 (KSR 5)

Number of scientific publications about species research that acknowledge SSC affiliation: 1

Result description: In 2021, Specialist Group Member and Focal Point for



Knysna Seahorse (*Hippocampus capensis*)
Photo: Louw Claassens

Taxonomy and Evolution, Graham Short, identified and described a new genus within the family Syngnathidae and provided a redescription of the genera *Acentronura* and *Idiotropiscis*. The new genus *Cylix* includes the recently-described Manaia Pygmy Pipehorse (*Cylix tupareomanaia*) from New Zealand. The first genome scale analysis of syngnathid phylogeny, including 183 species, was completed in 2021 and will be published in 2022. In addition, Graham Short has been working on the revision of the *Hippocampus* genus. Data from his analysis will be published in late 2022. A checklist of all syngnathiform fishes is in the process of being drafted.

T-023 (KSR 5)

Number of research projects completed or supported by SSC members per taxonomic group and region: 0

Result description: Discussions and plans have begun to create a seahorse identification guide for Australia to assist researchers, community scientists and divers and provide an up-to-date list of valid species in the country.

T-025 (KSR 6)

Number of new KBAs confirmed in the World database of KBAs (WDKBA): 0

Result description: Although no new KBAs have been established, plans to initiate discussion and engagement to create, identify and determine KBAs for syngnathids are planned for early 2022.

PLAN

Planning

T-001 (KSR 8)

Number of plans invited/endorsed by national governments/conservation authorities: 0

Result description: This target was achieved in 2018. However, new data and research warrants an update to the Priority Action Statement and the development of a Recovery Action Plan for this species with contribution, engagement and endorsement from stakeholders, national governments and conservation authorities.

T-002 (KSR 8)

Number of plans invited/endorsed by national governments/conservation authorities: 1

Result description: This target was achieved in 2019. The Priority Action Statement for White's Seahorse *(Hippocampus whitei*) was the basis for and aided in the creation of a New South Wales Department of Primary Industries Priorities Action Statement promoting the recovery of this species in New South Wales, Australia.

T-003 (KSR 8)

Number of conservation plans/strategies updated: 0

Result description: Louw Claassens, our Focal Point for Africa, is leading the development of a Recovery Action Plan for the Estuarine Pipefish (*Syngnathus watermeyeri*; Critically Endangered), found in only two estuaries in South Africa. The SPS SG supported Louw to obtain a National Geographic grant. Over the past two years, the research team conducted field surveys to determine the current status of the species as well as established the efficacy of using eDNA to detect the species, aimed at enabling additional long-term monitoring. Data from this research will be used to update the IUCN Red List assessment for this species. Once the assessment is complete, a Recovery Action Plan will be finalised. In addition, four workshops were held with key stakeholders which focused on the development of a Recovery Action Plan for *S. watermeyeri* that will incorporate the most up-to-date research findings.



Providing training on seahorse population monitoring in Vilankulo, Mozambique
Photo: Louw Claassens

Policy

T-006 (KSR 9)

Number of policies where SSC members provided technical input: 0

Result description: In order to achieve this target, the implementation of relevant rules and laws that affect syngnathids were documented for Argentina, Brazil and South Africa. In addition a large review partially funded by the IUCN Internal SSC grant documented national conservation assessments and legislation for the over 130 countries where syngnathids are found. This review was completed by Project Seahorse team members with considerable input from Specialist Group members in 2021. The report was published as a University of British Columbia (UBC) Fisheries Centre Research Report entitled *Identifying national conservation status, legislation and priorities for syngnathid fishes globally*. Results of this research were presented at an international meeting for syngnathid researchers, SyngBio, in May 2021 and has been added to the IUCN SSC SPS SG website as a living document. Further work in the quadrennium will focus on disseminating this information and encouraging specific policies/objectives to increase national conservation assessments and rules and laws to protect syngnathids at the national level.

ACT

Conservation actions

T-030 (KSR 10)

Number of actions addressing major drivers/emerging threats of species or population loss: 2

Result description: In 2021, with support and unanimous approval of our Specialist Group members, we finalised our Urgent Action Response Document. This document is publicly available on the Specialist Group website and can be used by scientists, non-scientists, government agencies and/or community members to report on and bring attention to concerns and emerging threats to syngnathids in their region/country. Incoming reports will then be documented and used by Specialist Group members to develop concrete actions/plans to address emerging threats and concerns to syngnathids. In response to the environmental disaster caused by the cargo ship M/V X-Pearl off the coast of Sri Lanka, the SPS SG wrote a statement on request of Oceanswell (https://oceanswell.org/) that identified and described the threats of oil spills and microplastics to syngnathid populations. This statement is available on their website: https://oceanswell.org/resources-on-mv-xpress-pearl.

Policy

T-007 (KSR 10)

Number of position statements addressing major drivers/emerging threats of species or population loss: 1

Result description: In 2020, a draft report documenting the rules and laws that affect syngnathids in Brazil was created. Updates to the draft report are currently in progress and the report will be made publicly available on the SPS SG website in 2022. Plans have been initiated to develop an action plan for syngnathids in Brazil in 2022 to identify and address major drivers and emerging threats to syngnathid species. Positions statements on the effects of tourism and boat noise to syngnathid populations are the current priorities for 2022. The implementation of relevant rules and laws that affect syngnathids were documented for Argentina, Brazil and South Africa and added to the Specialist Group website. A large review partially funded by the IUCN Internal SSC grant documented national conservation assessments and legislation for the over 140 countries where syngnathids are found. This review was published as a UBC Fisheries Centre Research Report and added to the SPS SG website as a living document in 2021. New knowledge gained from this study on national assessments and legislation will support the implementation of IUCN World Conservation Congress Resolution WCC-2020-Res-095 *Conservation of seahorses, pipefishes and seadragons (family Syngnathidae)*. In particular, it "calls on all members, especially State and Government Agency Members, to by 2022, ensure that the status of all syngnathids is assessed and included in national/regional Red Lists as warranted." Knowledge gaps identified in this report will help guide our focus to those range states where national assessments are largely lacking and will improve the effectiveness of the resolution.

NETWORK

Membership

T-028 (KSR 2)

Number of SSC members recruited: 5

Result description: In 2021, five new members were invited to join the Specialist Group. New members increased our geographic scope by adding members from the Philippines, Viet Nam, Hong Kong, Italy and the US with specialities ranging from fisheries, wildlife conservation, management and trade as well as ecology, evolutionary ecology and population genetics.

An Ornate Ghost Pipefish (*Solenostomus paradoxus*) in the Egyptian Red Sea
Photo: Richard Smith - OceanRealmImages.com





A pair of Robust Ghost Pipefish (*Solenostomus cyanopterus*) in the Egyptian Red Sea
Photo: Richard Smith - OceanRealmImages.com

Synergy

T-018 (KSR 3)

Number of connections/collaborations made: 2

Result description: Through the research led by Specialist Group member and Focal Point for Global Fisheries and Trade, Sarah Foster, we connected with the Dallas World Aquarium and our Specialist Group Focal Point for Ex situ, Paula Carlson, as well as other stakeholders, to complete a UBC Fisheries Centre Research Report. The report, entitled *Changes in the international trade in live seahorses (*Hippocampus *spp.) after their listing on CITES Appendix II*, investigated the international live trade in seahorses by species, countries of origin, whether specimens were wild sourced or cultured, destinations, volumes, and their changes over time. Project Seahorse team members, with members of the IUCN SSC Seahorse, Pipefish and Seadragon Specialist Group (SPS SG, https://www.iucn-seahorse.org), were involved in this work.

T-031 (KSR 3)

Number of connections/collaborations made: 0

Result description: The now accepted IUCN World Conservation Congress Resolution WCC-2020-Res-095 *Conservation of seahorses, pipefishes and seadragons (family Syngnathidae)* will serve as a vital tool providing a synopsis of issues for donors, policy makers and the public to both raise awareness and catalyse action across and beyond the IUCN.

COMMUNICATE

Communication

T-014 (KSR 13)

Number of digital communication outputs developed in relation to specific taxonomic groups: 7

Result description: In 2021, we increased the visibility and profile of syngnathid conservation issues to the public, policy makers and donors through social media posts highlighting Specialist Group members and their published research, using Twitter/Instagram/Facebook posts and threads, blogs and website content. We: (1) highlighted the work of three Specialist Group members on social media, covering their work in Australia, Portugal and South America; (2) posted and shared two blogs describing our review of national conservation assessments and legislation of syngnathids across the globe, as well as

a Twitter thread focusing on the summary and key messages from our results; (3) published a large review documenting the global extinction risk of seahorses, pipefishes and their near relatives, which was on the cover of the July issue of *Oryx*, and created a Twitter thread summarising our main results; (4) featured two blogs on the SPS SG website that described research on the Endangered Knysna Seahorse in South Africa by Specialist Group member Louw Claassens and a guest blog that tells the inspiring story 'From poaching to conservation – searching for seahorses in Mozambique'; (5) created a website page with key information on IUCN World Conservation Congress Resolution WCC-2020-Res-095 *Conservation of seahorses, pipefishes and seadragons (family Syngnathidae)* and our report on national conservation assessments and legislation of syngnathids; (6) raised the profile of global syngnathid research by sharing and live tweeting throughout SyngBio 2021, a meeting of over 200 researchers from 24 countries around the world; (7) shared research of Specialist Group members including description of new species work on Endangered species and much, much more.

T-015 (KSR 13)

Number of digital communication outputs developed in relation to specific taxonomic groups: 5

Result description: In 2021, we increased the visibility and profile of syngnathid conservation issues to the public, policy makers and donors through social media posts highlighting Specialist Group members and their published research, using Twitter/Instagram/Facebook posts and threads, blogs and website content. Key messages focused on our main areas of research for 2021, including: (1) global extinction risk for seahorses, pipefishes and their relatives; (2) identifying national conservation status, legislation and priorities for syngnathid fishes globally; (3) IUCN World Conservation Congress Resolution WCC-2020-Res-095 *Conservation of seahorses, pipefishes and seadragons (family Syngnathidae)*; (4) trade and exploitation of seahorses (both live and dried trade); (5) research on the most threatened syngnathids (Knysna Seahorse, *Hippocampus capensis*; White's Seahorse, *Hippocampus whitei*; Estuarine Pipefish, *Syngnathus watermeyeri*). In addition, we also shared key messages on social media dealing with issues pertaining to the impacts of bottom trawling and perverse subsidies.

T-017 (KSR 13)

Number of digital communication outputs developed in relation to specific taxonomic groups: 7

Result description: Our Specialist Group remains active on social media through Twitter, Instagram and Facebook, where we share our many successes and achievements by introducing the work of our SPS SG members. In 2021, we highlighted the work of three specialist group members on social media covering their work in Australia, Portugal and South America. We also posted and shared two blogs describing the review of national conservation assessments and legislation of syngnathids across the globe as well as a Twitter thread focusing on the summary and key messages from our results. In addition, we also featured two blogs on the SPS SG website that described research on the Endangered Knysna Seahorse in South Africa by Specialist Group member Louw Claassens and a guest blog that tells the inspiring story 'From poaching to conservation – searching for seahorses in Mozambique'.

T-029 (KSR 13)

Number of digital communication outputs developed in relation to specific taxonomic groups: 5

Result description: Our Specialist Group remains active on social media through Twitter, Instagram and Facebook, where we share our many successes and achievements including five blogs covering research on the Endangered Knysna Seahorse (*Hippocampus capensis*) in South Africa, documenting our SPS SG review of national conservation status, legislation and priorities for syngnathid fishes globally, highlighting research and conservation work from colleagues in Mozambique and documenting our SyngBio meeting of syngnathid researchers. Our Specialist Group regularly shares new and exciting research and the conservation efforts of our Specialist Group members on social media and through news stories in the media. A further three blogs were created to highlight amazing species observed through our iSeahorse community science platform. Significant communication and outreach through regular posts on social media serve to promote the great conservation, research and outreach activities made by our SPS SG members. These posts showcase the work they are doing around the world to protect these magical fishes.

Acknowledgements

The SPS SG benefits from support to Project Seahorse, acting as the core of the SPS SG. Project Seahorse is hugely grateful to our long-time major partner in marine conservation, Guylian Belgian Chocolates, and to our faithful supporters at the Langar Foundation. Sincere thanks to Oceanário de Lisboa and team member Catarina Fonseca for their tremendous help in drafting Red List assessments of two seahorse species. Project Seahorse also thanks our host institutions, the University of British Columbia in Canada and Zoological Society of London in the UK, who provide support for the Chair and some SPS SG and Project Seahorse activities.

Summary of achievements

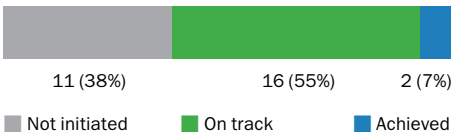
Total number of targets 2021–2025: 29

Geographic regions: 3 Africa, 1 Asia, 24 Global and 1 Oceania

Actions during 2021:

Assess: 8 (KSR 5, 6)
Plan: 4 (KSR 8, 9)
Act: 2 (KSR 10)
Network: 3 (KSR 2, 3)
Communicate: 4 (KSR 13)

Overall achievement 2021–2025:



IUCN SSC Shark Specialist Group



SOCIAL MEDIA AND WEBSITE
Facebook: @IUCNShark
Instagram: @IUCNShark
LinkedIn: IUCNShark
Twitter: @IUCNshark
Website: https://www.iucnssg.org
Vimeo: @iucnshark
YouTube: IUCN Shark Specialist Group

CHAIR
Rima Jabado
Elasmo Project,
Dubai,
United Arab Emirates

RED LIST AUTHORITY COORDINATOR
Cassandra Rigby
James Cook University, Centre for Sustainable Tropical Fisheries and Aquaculture, Queensland, Australia

NUMBER OF MEMBERS
237

Mission statement

To secure the conservation, management and, where necessary, the recovery of the world's sharks, rays and chimaeras by mobilising global technical and scientific expertise to provide the knowledge that enables action.

Projected impact 2021–2025

In 2021, the Shark Specialist Group (SSG) completed the IUCN Red List of Threatened Species assessments of all sharks, rays, and chimaeras and now know that 37% of species are threatened with extinction. Although we will need to continue with assessments for newly described species, our aim is to ensure the most threatened species get attention by developing conservation strategies and action plans, guiding policy intervention by providing expert input into the decision making process (especially at high-level international treaty level such as the Convention on the Conservation on Migratory Species of Wild Animals (CMS) and Convention on the International Trade in Endangered Species of Wild Flora and Fauna (CITES)), and communicating our work and results to a broad audience. We will develop new spatial planning tools to support delineation of Important Shark and Ray Areas (ISRAs) across the world's ocean and ensure their uptake at various national, local and global levels. Finally, with increasing changes to the trade dynamics of shark and ray products, we will work to improve our understanding of global exports and imports of fins, meat, skins, liver oil and other products, to ensure sustainable use.

Targets 2021–2025

ASSESS

T-001 Complete global Red List assessments of all newly described species and changed taxonomic concepts by 2025.

T-002 Complete Red List reassessments for current species assessments expiring in 2022–2024 by 2025.

T-003 Complete Red List assessments and reassessments for South American and Southeast Asian freshwater stingrays by 2022.

T-004 Publish Living Planet Index for chondrichthyans by 2022.

T-005 Produce Global Red List Index for chondrichthyans as the first indices of the effects of threats by 2022.

T-006 Publish results of the Global Shark Trends project in 2022.

T-008 Develop and publish regional status reports leading to papers on global and regional conservation priorities for chondrichthyans by 2024.

PLAN

T-012 Develop a global conservation strategy and action plan for oceanic sharks and rays by 2023.

T-013 Support the implementation of the Convention on Migratory Species (CMS) Concerted Actions by 2023 (e.g. Rhino Rays).

T-014 Develop overview, situational analysis, and regional conservation strategies and action plans for Rhino Rays by 2025.

T-015 Develop a conservation strategy and action plan for the South American freshwater stingrays by 2025.

ACT

T-022 Provide ongoing technical support and advice to the CMS Secretariat and Sharks MoU Advisory Committee.

T-023 Respond to requests for advice and feedback to other IUCN bodies, specialist groups and organisations (e.g. FAO, TRAFFIC) as requested.

T-024 Develop policy briefs/documents on existing and emerging trends in the trade of various shark and ray products for CITES Conference of the Parties by 2025.

Endangered Coach Whipray (*Himantura uarnak*)
Photo: Simone Caprodossi



T-025 Create a synopsis of fisheries, use, trade, and other conservation issues related to chondrichthyans for donors, policy makers and the public to support conservation actions and engagement by 2023.

T-026 Develop position statement on the reintroduction of sharks and rays through captive breeding programmes and disseminate to aquaria by 2025.

NETWORK

T-007 Generate funds to support SSG activities including assessment, conservation planning and other key targets.

T-016 Recruit at least 30 new members in 2021.

T-017 Review current membership status to improve geographic diversity, gender and age representation, and technical expertise of the SSG group in 2021.

T-018 Foster training of members in conservation planning by 2025.

T-019 Foster training of members as Red List assessors (including the use of the IUCN Species Information Service, SIS) by 2023.

T-021 Establish new formal partnerships that will provide financial and institutional support to the Specialist Group staff time by 2022.

COMMUNICATE

T-009 Organise annual SSG events linked to major international conferences to communicate activities and progress to members and other interested individuals or organisations (e.g. American Elasmobranch Society yearly meeting, European Elasmobranch Association, Sharks International 2022).

T-010 Publish annual Shark Specialist Group Newsletters with contributions from members.

T-011 Update SSG website, improve social media presence and develop a communication strategy to better disseminate updates and ongoing activities by 2022.

Activities and results 2021

ASSESS

Red List

T-001 (KSR 6)

Number of new global Red List assessments completed: 47

Result description: A total of 47 new assessments were completed in 2021 (11 shark species and 36 ray species).

T-002 (KSR 6)

Number of global Red List reassessments completed: 194

Result description: One hundred ninety-four (194) reassessments were published in 2021, including 94 shark species and 100 ray species. A series of four regional virtual workshops were held to work on the reassessment of the five species of sawfishes (Pristidae), involving over 70 SSG members and non-members.

T-003 (KSR 6)

Number of global Red List reassessments completed: 19

Result description: Reassessments of the Asian freshwater stingrays have been completed and are now available on the IUCN Red List of Threatened Species website. Reassessments of at least 15 South American freshwater stingrays are currently underway and ready for review and submission to the first 2022 Red List update.

T-005 (KSR 7)

Number of groups with comprehensive Red List reassessments published as a proportion of the number prioritised for the Red List Index: 0

Result description: The analysis of the Global Red List Index for chondrichthyans is underway by Prof. Nick Dulvy. Some analyses at the regional level or the species-group level have been undertaken already and results published. The publications are: Walls, R.H.L. and Dulvy, N.K.

(2021). 'Tracking the rising extinction risk of sharks and rays in the Northeast Atlantic Ocean and Mediterranean Sea'. *Scientific Reports* 11:15397. https://doi.org/10.1038/s41598-021-94632-4 and Pacoureau, N., et al. (2021). 'Half a century of global decline in oceanic sharks and rays'. *Nature* 589:567–571. https://doi.org/10.1038/s41586-020-03173-9.

Research activities

T-004 (KSR 5)

Number of scientific publications about species research that acknowledge SSC affiliation: 0

Result description: The analysis for the Living Planet Index for chondrichthyans is underway and being led by Prof. Nick Dulvy.

T-006 (KSR 5)

Number of scientific publications about species research that acknowledge SSC affiliation: 1

Result description: A peer-reviewed publication with details of results from the assessment of 1,199 species was published to highlight results from the Global Shark Trends Project: Dulvy, N.K., et al. (2021). 'Overfishing drives over one-third of all sharks and rays toward a global extinction crisis'. *Current Biology* 31:4773–4787. https://doi.org/10.1016/j.cub.2021.08.062.

T-008 (KSR 5)

Number of scientific publications about species research that acknowledge SSC affiliation: Ongoing.

Result description: An update to the Fowler et al. 2005 report (Fowler, S.L., et al. (comp. and eds.) 2005. *Sharks, Rays and Chimaeras: The Status of the Chondrichthyan Fishes. Status Survey*. IUCN/SSC Shark Specialist Group. Gland, Switzerland and Cambridge, UK: IUCN.) is in progress with the support of all the Regional Vice-Chairs.

PLAN

Planning

T-012 (KSR 8)

Number of conservation plans/strategies developed: 0

Result description: We have currently established a working team to plan this global conservation strategy and are working with the Conservation Planning Specialist Group to determine the best approach to tackle this diverse group of species.

T-013 (KSR 8)

Number of conservation plans/strategies developed: 0

Result description: Work with the Convention on Migratory Species (CMS) Secretariat has begun to ensure proposed activities within the Concerted Actions document can be implemented. A global review of bycatch of Rhino Rays is underway, a list of individuals working on Rhino Rays has been developed, and funding has been secured to run the first workshop to develop a regional conservation strategy and action plan.

ACT

Policy

T-026 (KSR 10)

Number of position statements addressing major drivers/emerging threats of species or population loss: 0

Result description: The SSG Aquarium Working Group, led by Paula Carlson and Lisa Hoopes, has been holding meetings with members to coordinate the development of guidelines and a position statement. Discussions are well underway to ensure this target can be achieved.

Technical advice

T-022 (KSR 10)

Number of technical consultations provided to support conservation actions: 1

Result description: The SSG continues to work closely with the CMS Secretariat and the Sharks MoU Advisory Committee through its members and Chair. Technical support is provided during a scheduled monthly call along with documents to review on the implementation of their programme of work in relation to the conservation of sharks and rays.

T-023 (KSR 10)

Number of technical consultations provided to support conservation actions: 4

Result description: The SSG has responded to several requests for advice and feedback including: (1) submitted official comments to the Government of Australia in relation to the consultation on species listing eligibility and conservation actions for the Scalloped Hammerhead (*Sphyrna lewini*); (2) provided feedback to the IUCN Secretariat and Total Energies in relation to a project on Whale Sharks (*Rhincodon typus*) in Qatar; (3) consulted with several SSC members wanting to establish a new specialist group; and (4) undertook review of documents prepared by TRAFFIC in relation to sharks and rays on CITES.

NETWORK

Capacity building

T-018 (KSR 2)

Number of people trained in conservation planning: 12

Result description: A total of 12 members from seven of the nine SSG regions have participated in the IUCN SSC Conservation Planning Specialist Group course on 'Facilitating Species Conservation Planning Workshops'.

T-019 (KSR 2)

Number of people trained in assessment tools: 21

Result description: The Red List Authority Coordinator worked with members to ensure that nine individuals completed the full Red List training course. An additional 12 members completed Modules 1–4 from the course and are able to support ongoing Red List assessments. In addition, two online Assess Working Group trainings were undertaken in September 2021.

Membership

T-016 (KSR 2)

Number of SSC members recruited: 129

Result description: The SSG invited a total of 129 new members in 2021 and renewed membership for 108 members.

T-017 (KSR 2)

Number of SSC members recruited: 65

Result description: Membership was reviewed to improve geographic diversity, gender and age representation, as well as technical expertise. Previously, the SSG had 172 members from 53 countries. Currently, we have 237 members from 82 countries, allowing us to have a much more diverse and inclusive group.

Synergy

T-007 (KSR 1)

Number of in kind partnerships established and maintained: 1

Result description: A new partnership with Atlantis, The Palm in Dubai has allowed the SSG to have a new part-time Programme Officer, who started working in December 2021.

T-007 (KSR 1)

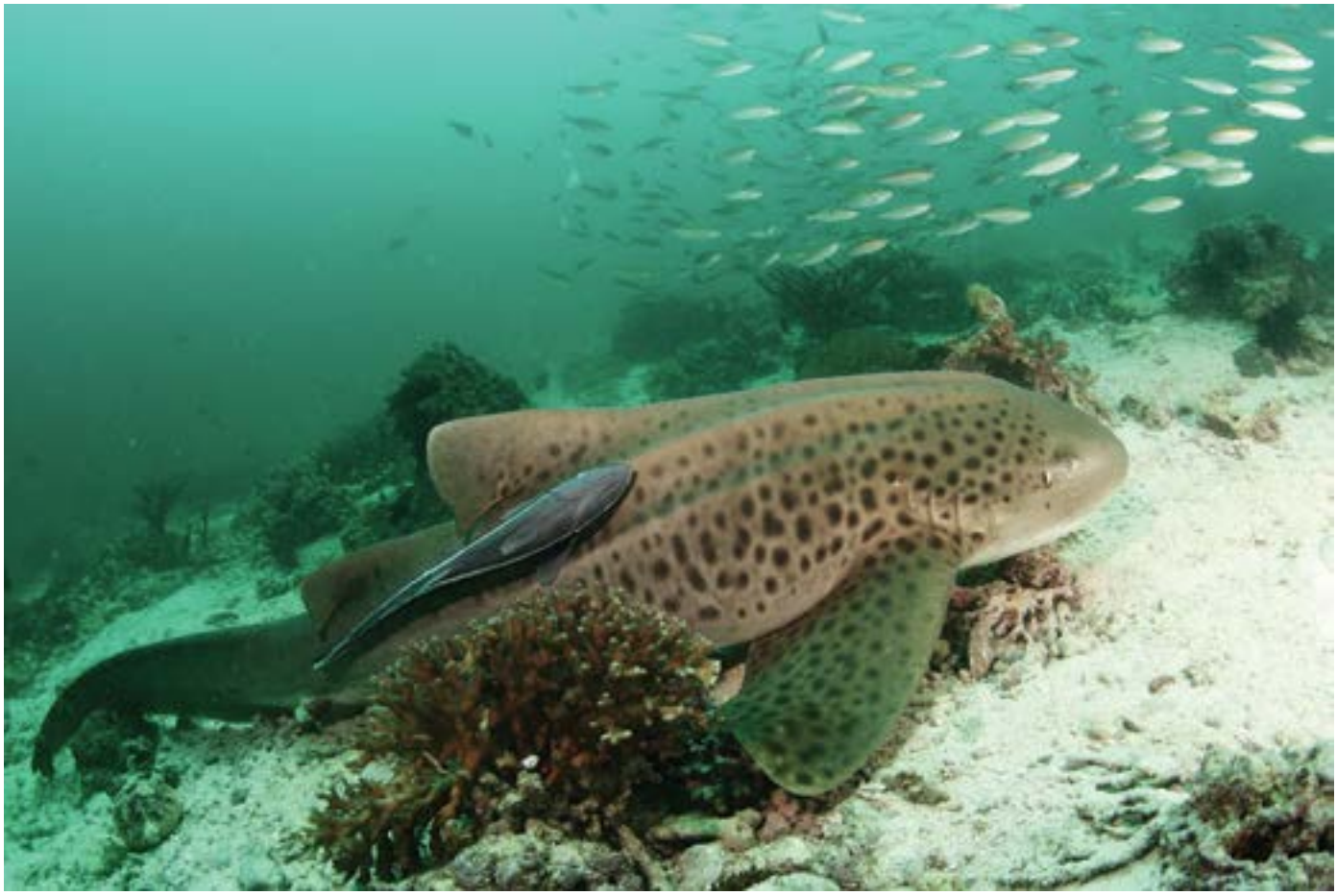
Number of funding partners established and maintained: 1

Result description: The SSG has generated various funds to support ongoing activities related to conservation planning and capacity building. Activities are now being planned so they can be implemented in 2022.

T-021 (KSR 1)

Number of in kind partnerships established and maintained: 1

Result description: With the support of Atlantis, The Palm in Dubai, a part-time Programme Officer was hired in December



Endangered Leopard Shark (*Stegostoma tigrinum*)
Photo: Simone Caprodossi

2021 to support the implementation of ongoing IUCN SSC Shark Specialist Group activities.

COMMUNICATE

Communication

T-009 (KSR 13)

Number of SSC members' presentations developed in relation to specific taxonomic groups: 2

Result description: Members have been engaged at the regional level through online meetings that Regional Vice-Chairs are organising quarterly for each of the nine SSG regions. This has been the best alternative considering the current COVID-related travel restrictions. A first in-person meeting is currently being organised linked to Sharks International 2022 in Valencia, Spain, in October 2022, where members can finally get together and plan activities.

T-010 (KSR 12)

Number of Species e-bulletin, Save Our Species newsletter, SSC Groups' newsletter editions produced: 3

Result description: We have relaunched our official Shark Specialist Group Newsletter, *Shark News*, and are now publishing quarterly issues with contributions from members and non-members working on shark, ray and chimaera conservation issues around the world. All issues can be downloaded on our website (https://www.iucnssg.org/shark-news.html) or viewed online (April 2021 | bit.ly/3flC4nG; July 2021 | bit.ly/31T0jqs; October 2021| bit.ly/33cPVdN)

T-011 (KSR 13)

Number of digital communication outputs developed in relation to specific taxonomic groups: 4

Result description: The SSG website design (https://www.iucnssg.org) has been changed with the structure of the website and its content fully updated (February–March 2021). Our social network presence now includes Facebook, Twitter, Instagram, LinkedIn, YouTube and Vimeo, all of which have content that is consistently being created and/or updated. This is an ongoing process.

Acknowledgements

The IUCN SSC Shark Specialist Group would like to thank all our funders, partners, collaborators and members for their support and contributions. Special thanks are due to our institutional partners including the IUCN SSC Chair's Office, IUCN Marine Conservation Committee, IUCN Red List Unit, IUCN Freshwater Biodiversity Unit and IUCN Conservation Planning Specialist Group. Funding and in kind contributions were graciously provided by Re:wild; the Save Our Seas Foundation; the Convention on Migratory Species (CMS); the Sharks Memorandum of Understanding; Atlantis, The Palm; the Shark Conservation Fund; and the Federal Ministry for the Environment, Nature Conservation, Nuclear Safety and Consumer Protection (Federal Republic of Germany).

Summary of achievements

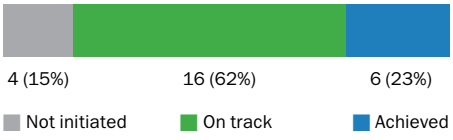
Total number of targets 2021–2025: 26

Geographic regions: 24 Global, 2 America

Actions during 2021:

Assess:	7 (KSR 5, 6, 7)
Plan:	2 (KSR 8)
Act:	3 (KSR 10)
Network:	7 (KSR 1, 2)
Communicate:	3 (KSR 12, 13)

Overall achievement 2021–2025:



IUCN SSC Snapper, Seabream and Grunt Specialist Group





SOCIAL MEDIA AND WEBSITE

Website: **https://www.iucn.org/commissions/ssc-groups/fishes/snapper-seabream-and-grunt-specialist-group**

CO-CHAIR
Ken Lindeman
Sustainability Studies Program, Florida Institute of Technology, Melbourne, Florida, US

CO-CHAIR
Melita Samoilys
CORDIO East Africa, Mombasa, Kenya

RED LIST AUTHORITY COORDINATOR
Barry Russell
Museum and Art Gallery of the Northern Territory, Darwin, Australia

NUMBER OF MEMBERS
70

Mission statement

To achieve global conservation and sustainable use of snappers, seabreams, grunts, and associated reef fish species through the application of improved scientific knowledge and community engagement in management decision-making.

Projected impact 2021–2025

For the 550 species in the Snapper, Seabream and Grunt Specialist Group (SSG SG), we intend to generate impacts via 18 Conservation Targets that can reverse population declines through improved practices in fisheries management. These impacts will include the identification of regional bycatch hotspots, improved spawning aggregation management, increased use of fishers' knowledge in science and decision-making, improved taxonomic knowledge to enhance management, and increased communication and awareness of the ecological and economic values of these species.

Targets 2021–2025

ASSESS

T-004 Begin global Red List reassessments of approx. 60 species in the Caesionidae, Haemulidae, Lutjanidae and Nemipteridae families subject to high fishing pressure and bycatch.

T-005 Begin global Red List reassessments in the family Sparidae with a focus on restricted range, endemic South African species, the most threatened of the SSG SG species.

T-015 Support assessments of climate change impacts on haemulid, lutjanid, lethrinid and nemipterid species.

T-016 Research and publish clarifications of currently problematic haemulid taxonomy and phylogeny.

PLAN

T-006 Support spawning site conservation initiatives with Regional Fisheries Management Organisations (RFMOs) and NGOs in at least two regions, in part by increased graduate student research.

T-007 Develop a Specialist Group Bycatch Reduction Workgroup to assemble regional data from around the globe to identify spatial hotspots, and achieve management actions.

T-008 Re-assess and review fishery management alternatives for South African sparids using IUCN Conservation Action Plan protocols with national partners.

ACT

T-010 Implement priority recommendations from the IUCN Fishers' Knowledge Guidelines with citizen science initiatives for advances in the management of SSG SG species.

T-011 Develop identification guides for: (a) common SSG fishery species, and (b) early life stages of common snapper and grunt species.

T-012 Provide technical consultations annually (e.g., on a Fishery Management Plan for a government agency, letters of support for science-based rule making) to support actions by fishery organisations working on SSG conservation.

T-019 Conduct climate change vulnerability assessment on selected SSG SG species, e.g., impacts of coastal habitat degradation on lutjanid, haemulid and lethrinid species.

NETWORK

T-001 Ensure 20% of Specialist Group members receive some training as IUCN Red List assessors by 2022.

T-002 Ensure 15% of Specialist Group members receive some training in IUCN species conservation planning by 2024.



Dakar market including seabreams
Photo: B. Russell

T-003 Establish at least one formal partnership or strategic alliance to provide financial support.

COMMUNICATE

T-013 Create a Communications Workgroup to provide information across multiple media platforms on global, regional and local specialist group activities.

T-014 Publish a review on the need for taxonomic and life history research to improve management and conserve SSG fisheries.

T-017 Provide public presentations and webinars on SSG SG Red Listing or conservation activities at national/transnational events with partners.

T-018 Expand technical content and create three regional photo image galleries on the SSG SG website.

Activities and results 2021

ASSESS

Red List

T-004 (KSR 6)

Number of global Red List reassessments completed: 10

Result description: In 2021, we initiated the final reviews of remaining draft SSG species accounts with the Marine Biodiversity Unit (MBU) from a workshop in 2020, conducted remotely due to the pandemic. Ten species accounts for the Nemipteridae (threadfin breams) were submitted to the Red List Unit in late 2021 for publication on the Red List web platform.

T-005 (KSR 6)

Number of global Red List reassessments completed: 0

Result description: These deliverables involve the Red List reassessment of many sparid species (seabreams) and are scheduled for 2023 and beyond. In 2021, as a priority in the reassessment of the family, a group convened to scope the status of threatened and near threatened species in South Africa. These national experts are focusing on the most endangered group of all SSG species. Follow-up work in 2021 produced an updated list of focus species. This target overlaps with target **T-008** in the section on Planning, additional information below.

T-015 (KSR 6)

Number of technical documents provided to support Red List assessments/reassessments: 1

Result description: A Red List of Ecosystems for coral reefs of the Western Indian Ocean was published with support of SSG members (Obura et al. 2022. Vulnerability to collapse of coral reef ecosystems in the Western Indian Ocean. *Nature Sustainability*. doi.org/10.1038/s41893-021-00817-0) showing the whole region is Vulnerable due to ocean warming and overfishing, with some ecoregions Critically Endangered or Endangered. SSG species depend on these habitats and this reference will be deployed in RL assessments in the future. This assessment provides a base for further national and local level assessments of climate vulnerability for SSG species.

Research activities

T-016 (KSR 5)

Number of scientific publications about species research that acknowledge SSC affiliation: 1

Result description: This deliverable on haemulid (grunt) phylogeny is due in 2023-24. Initial scoping and preliminary data gathering began in 2021 for an assessment of select taxa, many with ecological and, sometimes, economic value. Although there has been much recent progress, there are still complex phylogenetic and nomenclatural issues that challenge management. Related published work in 2021 includes Habib et al. Grunts of Bangladesh with two new distributional records from the northern Bay of Bengal assessed by morphometric characters and DNA barcoding. doi.org/10.3897/aiep.51.67043.



Plectorhyncus vittatus, Comoros Islands
Photo: M. Samoilys

PLAN

Planning

T-006 (KSR 8)

Number of conservation plans/strategies developed: 1

Result description: In 2021, we also began scoping a virtual and in-person training-the-trainers workshop for fish spawning aggregation (FSA) in SSG species with use of fishers' knowledge for planning and sustainable use. Focus areas currently include the western Indian Ocean, the Western Atlantic, and other regions. We also continued to work with RFMO staff to assist adaptive management of five deep-water spawning reserves between the Florida Keys and North Carolina. This follows from the System Management Plan developed from earlier work.

T-007 (KSR 8)

Bycatch Reduction Workgroup identifies possible conservation actions: 1

Result description: Based on a survey of membership in 2021, more than 20 specialist group members expressed interest in a bycatch workgroup. Steering committee leads were established for this group. We also worked in 2021 to update our preliminary bycatch database to help identify (a) categories of existing management options and (b) measures of their potential effectiveness in bycatch fisheries among differing global regions. In 2022, we will formalize the workgroup and focus on the most effective science-based conservation opportunities that members recommend for their regions.

T-008 (KSR 8)

Number of conservation plans/strategies updated: 1

Result description: Initial discussions were held in 2021 with South African SSG SG members regarding Red List information and fishery management alternatives for the priority species within this unique sparid (seabream) fauna. South African experts began work to update and expand

the original Red List assessments for 17 threatened or near threatened species using the original documents from the IUCN Species Information Service, provided by the MBU. This work includes use of a Bayesian state-space framework, JARA (Just Another Red-List Assessment), for six threatened species as part of the reassessment process. Final Red List reassessment deliverables are targeted for 2023-2024.

ACT

Conservation actions

T-010 (KSR 10)

Number of actions addressing major drivers/emerging threats of species or population loss: 1

Result description: This is a 2023 target. In 2021, we continued to provide science-based information to fishers in several regions such as West Africa, Australia and the Greater Caribbean. Based on the literature and 2021 member survey interests in both fishers' knowledge (FK, target T-010) and spawning (target T-006), we began the planning of virtual webinars among several regions with a focus on spawning sites of lutjanids and other SSG families (overlapping with quadrennium target T-006).

T-010 (KSR 10)

Number of intervention letters addressing major drivers/emerging threats of species or population loss: 1

Result description: Actions of this type in 2021 include a comment letter and impact summary for a large coastal development project that would remove a major coastal mangrove habitat in the Philippines and affect local fishing communities. In other instances in 2021, input on management issues with RFMOs occurred in the form of via Zoom and phone meetings, e-mail discussions, and other media. In 2022 and beyond, we are deploying 2021 member survey results to develop more SSG SG letters and other communications with regionally diverse RFMOs.

T-010 (KSR 11)

Number of communities benefited from sustainable use programmes: 0

Result description: This target deliverable will be developed through 2024. The deep-water southeast US spawning reserves potentially benefit several communities in the Florida Keys and the Carolinas but we cannot yet provide numbers. Communities in other regions can also benefit from science-based fishery and habitat conservation information that the SSG SG volunteers.

T-012 (KSR 10)

Number of species with increased or prevented decrease in population or range size as a result of conservation actions: 0

Result description: Target 12 focuses in part on RFMP consultations and is correlated with actions (e.g., comment letters, species identifications, science-based RFMO conservation efforts) on targets that were first scoped in 2021. Various actions will begin to emerge in 2022 for targets including T-006, T-007, T-011 and T-019 on spawning, bycatch, climate impacts and regional identification guides.

Technical advice

T-011 (KSR 10)

Number of technical consultations provided to support conservation actions: 8

Result description: Technical consultations involving species identifications, as well as management strategies (see T-012), were provided in response to various queries in 2021, in part through the group's new Steering Committee of 11 members. Examples include (a) identification work and expansion of the photo library of lutjanids and haemulids on the Shorefishes of the Greater Caribbean website, and (b) further work on field identification guides for common SSG species in several regions. The identification work aids the application of species-level fisheries data for SSG species, which is limited in many countries.

T-012 (KSR 10)

Number of technical consultations provided to support conservation actions: 3

Result description: We presented to and responded to queries from NGO, RFMOs and the general public on conservation issues involving fishery management, habitat use, spawning in SSG species. For example, we presented a paper to the Nairobi Convention Science to Policy Platform in March 2021 on 'Mainstreaming community managed marine areas into the Western Indian Ocean's governance frameworks. The paper provides recommendations around small scale fisheries management with specific policy and regulations for governments relevant to many SSG species. Recommendations from this paper were presented to Nairobi Convention member states at the Conference of Parties in Nov. 2021. We also submitted a comment letter and scientific summary of an important coastal habitat destruction proposal in the Philippines that will impact many SSG species. Many members also performed technical consultations in 2021 including service on expert committees and advisory panels.

T-019 (KSR 10)

Number of technical consultations provided to support conservation actions: 1

Result description: A student at Florida Tech worked to develop a climate change sensitivity assessment framework focusing on three early life history stages of five species of haemulids and lutjanids of the Western Atlantic. The student worked with the SSG SG to provide comments on the 2021 US East Coast Fishery Scenario Planning initiative of NOAA and the Atlantic States Marine Fisheries Commission.

NETWORK

Capacity building

T-001 (KSR 2)

Number of people trained in assessment tools: 3

Result description: We advertised Red List training in all Member Updates to all



Processing grunts on the beach, Sucre, Venezuela
Photo: K. Lindeman

Specialist Group members during 2021. Based on the survey of SG members, twenty members said they had received some Red List training, including prior years. We estimate three people received substantial training in 2021. We will continue to encourage members to take this training several times annually as we prepare for future reassessments.

T-002 (KSR 2)

Number of people trained in conservation action: 2

Result description: Based on a 2021 survey of SG members, we know of two members who received Conservation Planning Specialist Group (CPSG) Species Conservation Planning (SCP) training in 2021. Others said they had received SCP training, but the year was not specified. We advertised SCP training by the CPSG in all member updates to specialist group members during 2021.

T-003 (KSR 1)

Number of funding partners established and maintained: 0

Result description: The 2021 membership survey identified members interested in assisting the co-chairs and steering committee members on funding. Since the launches of the new targets are now underway, we scoped ways to establish graduate student funding opportunities at a minimum. We also began to scope a social media system with our existing website as a part of our communication workgroup (T-013) to better provide information on SSG SG products.

COMMUNICATE

Communication

T-013 (KSR 13)

Number of digital communication outputs developed in relation to specific taxonomic groups: 1

Result description: In 2021, we used a large web survey to identify and align member interests in terms of a communications workgroup to broadcast SSG species information. An early summary of the communications results was then sent to members. In part, this survey identified the two media platforms members used the most (Twitter and Facebook) and the core steering committee members for the communication workgroup.

T-014 (KSR 12)

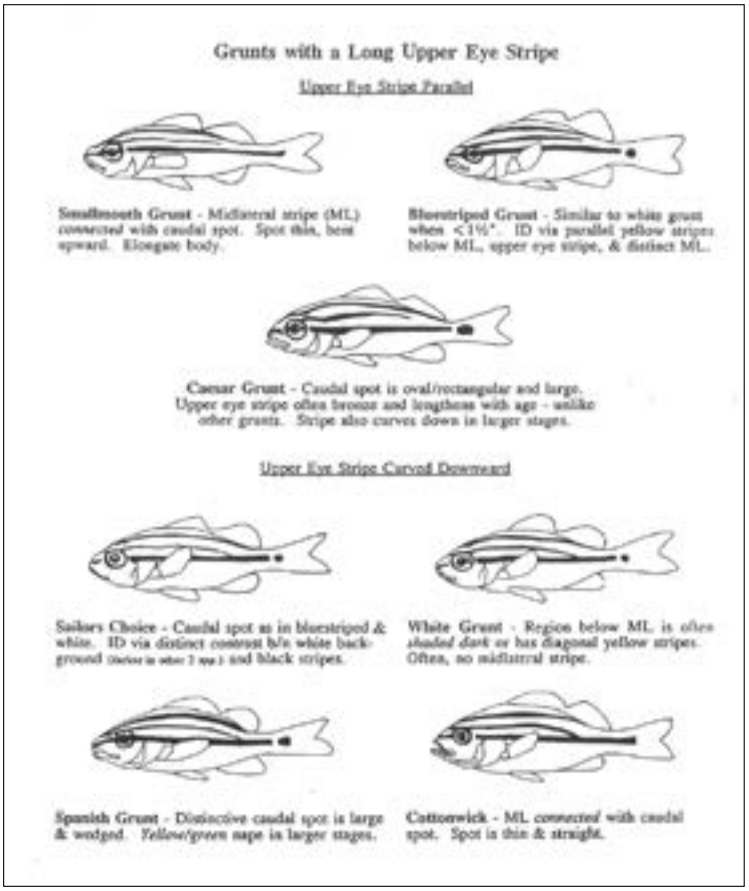
Number of media articles mentioning IUCN Species theme: 0

Result description: The primary deliverable for this 2023-24 target is a journal article examining the role of field and laboratory taxonomy and fishery management decision-making, particularly in multi-species fisheries. In 2021, scoping was initiated on this article. “It has become clear that taxonomic information is not a luxury, it is a real need in a world with a still-growing human population generating enormous pressure on natural resources” (Fischer, J. ed. 2013. *Fish identification tools for biodiversity and fisheries assessments: review and guidance for decision-makers*. FAO Paper No. 585).

T-014 (KSR 13)

Number of digital communication outputs developed in relation to specific taxonomic groups: 0

Result description: The primary deliverable for this is submittal of a journal article by 2024. The 2021 work on new social media platforms and regional web ID guides (T-0013 and T-011) will improve opportunities to highlight differing species and families of SSG SG taxa as we develop



Field identification guide, early juveniles of *Haemulon* species
Photo: K. Lindeman

deliverables for this target. Many of these species are representatives of the challenges that multispecies managers must deal with, in part due to limited taxonomic resources and limited species-level fishery data.

T-017 (KSR 13)

Number of communication products using innovative tools: 0

Result description: Focus has been on beginning diverse quadrennium target projects for Red Listing and management issues. Progress on this target tracks the social media resources in development (target T-013). We started planning a network of Locally Managed Marine Area (LMMA) practitioners in Kenya in early 2021. This was communicated in part through the science to policy recommendations provided to the Nairobi Convention (see target T-012). LMMAs include small scale fisheries management approaches that address sustainable fishing of many SSG species.

T-018 (KSR 13)

Number of new regional photo galleries on SSG SG website: 0

Result description: In 2021, planning was begun on the regional geographic structure of new photo galleries for all SSG families on the website. Related photo galleries on the Shorefishes of the Greater Caribbean website were expanded in 2021 by identification work and submission of over a dozen new images of early life stages for the lutjanid and haemulid sections.

Acknowledgements

We thank the members of the Snapper, Seabream and Grunt Specialist Group for their input and effort among the regions. We appreciate the assistance of the Steering Committee members of the SSG SG: Annadel Cabanban, Kafayat Fakoya, Rehka Nair, Stephen Newman, Francis Nunoo, Jose Tavera, Michelle Tishler, and Monica Valle. Gina Ralph, Christi Linardich, and Kent Carpenter of the Marine Biodiversity Unit provided important assistance with all stages of the Red List work. Thanks also to Amanda Vincent and the IUCN Marine Conservation Committee.

Summary of achievements

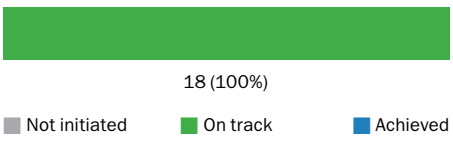
Total number of targets 2021–2025: 18

Geographic regions: 15 Global, 2 Africa, 2 America

Actions during 2021:

Assess:	4 (KSR 5, 6)
Plan:	3 (KSR 8)
Act:	7 (KSR 10, 11)
Network:	3 (KSR 1, 2)
Communicate:	5 (KSR 12, 13)

Overall achievement 2021–2025:



IUCN SSC Sturgeon Specialist Group



CHAIR
Arne Ludwig
Leibniz Institute for Zoo and Wildlife Research (IZW), Berlin, Germany

RED LIST AUTHORITY COORDINATOR
Leonardo Congiu
Department of Biology, University of Padova, Padova, Italy

NUMBER OF MEMBERS
20



Young of the year wild Beluga (*Huso huso*) caught in Danube
Photo: Tudor Ionescu

Mission statement

The mission of the IUCN Sturgeon Specialist Group is to provide accurate information on the status of sturgeons and paddlefishes and promote their conservation and recovery.

Projected impact for 2021–2025

By the end of 2025, we envision that we will have reached increased protection for sturgeon and paddlefish species. We plan to reach this goal mainly through our support of national and trans-national management and conservation activities. In addition, we will promote efforts to develop and establish state-of-the-art forensic methods for stringent control of international sturgeon trade (e.g. caviar). We predict that jointed awareness campaigns with our close partners from WWF and World Sturgeon Conservation Society (WSCS) will increase knowledge about sturgeon species and their conservation problems among the public, especially the impact of poaching and illegal trade on population declines.

Targets for 2021–2025

ASSESS

T-003 Reassess all sturgeon and paddlefish for the IUCN Red List (27 species and 66 populations).

NETWORK

T-001 Consolidate and strengthen existing partnerships for conservation of Yangtze Sturgeon (*Acipenser dabryanus*) and Chinese Sturgeon (*Acipenser sinensis*).

T-002 Consolidate and strengthen existing partnerships for conservation of Sterlet (*Acipenser ruthenus*), Russian Sturgeon (*A. gueldenstaedtii*) and Beluga (*Huso huso*).

COMMUNICATE

T-004 Support Freshwater Conservation Committee communications highlighting freshwater species at risk and threats to freshwater systems.

Activities and results for 2021

ASSESS

Red List

T-003 (KSR 6)

Number of global Red List reassessments completed: 0



Release of juvenile sterlets (*Acipenser ruthenus*) for supportive stocking in the Danube River
Photo: Thomas Friedrich

Result description: Draft assessments have been compiled for all species and populations and have been reviewed by IUCN Red List staff.

NETWORK

Synergy

T-001 (KSR 4)

Number of governments supported to develop species conservation policies: 0

Result description: Work continues to provide support for the conservation of Yangtze Sturgeon (*Acipenser dabryanus*) and Chinese Sturgeon (*Acipenser sinensis*).

T-002 (KSR 4)

Number of governments supported to develop species conservation policies: 9

Result description: In a joint effort with WWF, the Danube Sturgeon Task Force and World Sturgeon Conservation Society, the Sturgeon Specialist Group called for the protection of sturgeons in the Danube (Sterlet, *Acipenser ruthenus*, Russian Sturgeon, *A. gueldenstaedtii* and Beluga, *Huso huso*) and provided latest assessment data to the EU Commissioner.

COMMUNICATE

Communication

T-004 (KSR 12)

Contribute to and disseminate communications from Freshwater Conservation Committee's Species at risk report (in partnership with Shoal) within and outside SSC: ongoing

Result description: At the end of 2021, the group – on request from the Freshwater Conservation Committee – nominated two sturgeon species for consideration in the publication. The group continues to contribute to the report with information and review of species information and other content for the species selected to be highlighted, Yangtze Sturgeon (*Acipenser dabryanus*).

Acknowledgements

We thank WWF Austria and the Chinese Academy of Sciences for financial and logistical support.

Summary of achievements

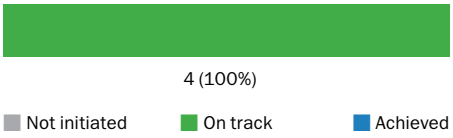
Total number of targets for 2021–2025: 4

Geographic regions: 2 Global, 1 Asian, 1 Europe

Actions during 2021:

Assess: 1 (KSR 6)
Network: 2 (KSR 4)
Communicate: 1 (KSR 12)

Overall achievement 2021–2025:



2021 Report

IUCN SSC Tuna and Billfish Specialist Group



CHAIR
Bruce B. Collette
Division of Fishes, National Museum of Natural History, Smithsonian Institution, US

RED LIST AUTHORITY COORDINATOR
Beth Polidoro
Julie Ann Wrigley Global Institute of Sustainability, Arizona State University, Phoenix, US

NUMBER OF MEMBERS
30

Mission statement

To bring together a variety of stakeholders to increase knowledge on the global status and conservation of the world's tuna and billfish species.

Projected impact 2021–2025

Our projected impact is that we will have reassessed all of the world's tuna and billfishes, calculated the Red List Index for these species, and produced a peer-reviewed scientific paper on these results. Many of the results have already been highlighted in several international news outlets.

Targets 2021–2025

ASSESS

T-001 Reassess all 61 species of tunas and billfishes on the Red List.

Activities and results 2021

ASSESS

Red List

T-001 (KSR 6)

Number of global Red List reassessments completed: 13

Result description: Six commercial tuna assessments were published in 2021 (three Bluefins; Bigeye Tuna, *Thunnus obesus*; Albacore Tuna, *Thunnus alalunga*; and Yellowfin Tuna, *Thunnus albacares*). These were highlighted in an IUCN press release and several media outlets during the IUCN World Conservation Congress in September (see https://www.nationalgeographic.com/animals/article/good-news-for-tuna-populations-in-latest-iucn-update). In 2021, assessments for seven commercial billfishes, as well as the Longtail Tuna (*Thunnus tonggol*) and Blackfin Tuna (*Thunnus atlanticus*), were submitted. These will be published in the July 2022 IUCN Red List update.

Acknowledgements

The IUCN SSC Tuna and Billfish Specialist Group would like to thank Krista Kemppinen, David Shiffman and numerous members for their contributions to Red List assessments.

Summary of achievements

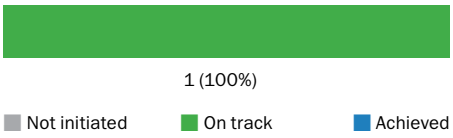
Total number of targets 2021–2025: 1

Geographic regions: 1 Body of water

Actions during 2021:

Assess: 1 (KSR 6)

Overall achievement 2021–2025:





Bluefin Tuna, Mediterranean Sea
Photo: OCEANA Keith Ellenbogen

2021 Report

IUCN SSC Ant Specialist Group





CO-CHAIR
John LaPolla
Towson University, Towson, Maryland, US

CO-CHAIR
Rodrigo Feitosa
Universidade Federal do Paraná, Brazil

RED LIST AUTHORITY COORDINATORS
Gabrielle Flinn
Private consultant

NUMBER OF MEMBERS
14

Mission statement

The mission of the IUCN SSC Ant Specialist Group is to assess and monitor the conservation status of ant species around the world.

Projected impact 2021-2025

As one of the most important groups of terrestrial invertebrate animals, our efforts will first and foremost raise the profile of ants in conservation decision making. This will begin by assessing the Red List status of various ant species. Critically, this will include a significant training component to involve as many Ant SG members as are interested in the process, with the aim of making it easier for members to take part in future Red List assessment efforts. With a group as diverse and globally distributed as ants, it is critical to build a network of members who will further the goal of having ants included in conservation planning. In turn, this training effort will impact the ability to include ants in conservation planning at both national and regional scales. We will also target particular groups of ants that are currently of conservation concern and use these species as ambassador species to present to the public the fact that even animals such as ants can warrant conservation concern and become threatened by human activities.

Targets 2021-2025

ASSESS

T-001 Assess the global Red List status of 50 ant species and reassess the Red List status of 50 ant species by 2025.

T-006 Release Ant Monitoring guidelines by 2025.

PLAN

T-004 Compile a conservation strategy for ants found in Sekhukhuneland, South Africa by 2025.

ACT

T-003 Protect habitat for conservation of *Boloponera ikemkha*.

NETWORK

T-002 Hold an Ant SG conference at the biennial Simpósio de Mirmecologia in Brazil.

COMMUNICATE

T-005 Establish an Ant SG website and other social media presence.

Activities and results 2021

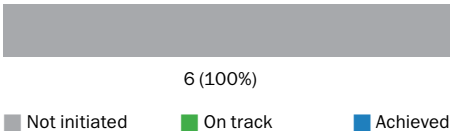
No activities during 2021.

Summary of achievements

Total number of targets 2021-2025: 6

Geographic regions: 4 Global, 2 Africa

Overall achievement 2021-2025:





Daceton armigerum, Araguacema, TO, Brazil
Photo: Rodrigo Feitosa



Dinoponera quadriceps, Crateús, CE, Brazil
Photo: Rodrigo Feitosa

IUCN SSC Butterfly and Moth Specialist Group





SOCIAL MEDIA AND WEBSITES
Facebook: IUCN SSC Butterfly & Moth Specialist Group
Twitter: @ IUCNButterflySG

CO-CHAIR
Monika Bohm
Global Center for Species Survival, Indianapolis Zoo, Indianapolis, Indiana, US

CO-CHAIR
Mike Jordan
Chester Zoo, UK

RED LIST AUTHORITY COORDINATOR
Monika Bohm
Global Center for Species Survival, Indianapolis Zoo, Indianapolis, Indiana, US

NUMBER OF MEMBERS
41

Mission statement

The mission of the IUCN SSC Butterfly and Moth Specialist Group is to increase knowledge on the taxonomy, ecology and conservation status of butterflies and moths around the world and promote their long-term conservation.

Projected impact 2021–2025

Increased awareness of butterfly and moth status through assessment and outreach; increased action in butterfly conservation through establishment of action plans (e.g. swallowtails); increased capacity for species assessment and conservation planning within the Specialist Group.

Targets 2021–2025

ASSESS

T-003 Create a global inventory of butterfly monitoring schemes and available time series data (with collaborators) to help us assess data gaps, capacity needs and build a Living Planet Index for butterflies.

T-007 Support the development of national or regional Red List assessments for butterflies and moths and improve linkages between national Red Lists and the global IUCN Red List (facilitate upload of assessments from national Red Lists to the global IUCN Red List).

T-009 Complete a first global assessment of 1,500 species for a sampled Red List Index of butterflies.

T-010 Publish on status and trends of the world's butterflies and moths (e.g. World Swallowtail assessment, Sampled Red List Index, key moth group).

T-011 Engage with Key Biodiversity Area processes, feeding butterfly and moth data into the process.

T-016 Complete assessments of at least 100 key moth species (e.g. emperor moths).

T-017 Identify additional priority groups for assessment and conservation planning (e.g. Green Status, Red List, Climate Change assessment).

T-019 Complete the Global Swallowtail Assessment.

PLAN

T-004 Conduct a conservation planning workshop for swallowtails and produce a conservation plan for the group.

T-012 Engage in at least two cross-taxon initiatives to increase group capacity in conservation planning.

ACT

T-015 Develop guidance on the use of Lepidoptera farming for sustainable community development.

NETWORK

T-002 Increase the global reach of the group to include a diversity of members covering at least 40 countries.

T-005 Develop regional subgroups to focus on regional Assess-Plan-Act.

T-006 Carry out capacity building for Red Listing within the group via training workshops/online Red List training course.

T-018 Develop partnerships with relevant organisations (e.g. Butterfly Conservation, eButterfly) to improve access to conservation-relevant data, and coverage and capacity of monitoring for Lepidoptera.

COMMUNICATE

T-013 Improve communications with the membership and a wider audience through newsletters, blogs, Facebook and Twitter presence, podcasts, etc., with two major outputs per year around which engagement can be focused (e.g. around World Swallowtail Day, publication of scientific outputs, etc.).

T-014 Develop a group website to showcase work and as a hub for distributing information and sharing resources.



Malachite Butterfly (*Siproeta stelenes*), Costa Rica
Photo: Monika Bohm



Graphium nomius (Papilionidae)
Photo: Shawan Chowdhury

Activities and results 2021

ASSESS

Red List

T-016 (KSR 6)

Number of new global Red List assessments completed: 29

Result description: Assessments for 29 species of Hawaiian moths were published on the IUCN Red List 2021.3.

T-019 (KSR 6)

Number of new global Red List assessments completed: 36

Result description: In 2021, 36 assessments were published on the IUCN Red List. Another 210 have been drafted already and are going through final sign off. Overall, nearly 200 species have now been published.

Research activities

T-003 (KSR 5)

Number of scientific publications about species research that acknowledge SSC affiliation: 0

Result description: We held an initial two-hour butterfly monitoring meeting in October, with speakers from Vlinderstichting and ZSL, to introduce the project and link in new, important partners such as eButterfly. We are now in the process of establishing regular meetings on the subject via a monitoring subgroup within the Butterfly and Moth Specialist Group.

NETWORK

Capacity building

T-018 (KSR 3)

Increased number of collaborations: 5

Result description: We continued building links with relevant organisations throughout the year, including Butterfly Conservation, Butterfly Conservation Europe, Vlinderstichting (Netherlands), the Living Planet Index team at ZSL, and the Centre for Ecology and Hydrology (UK) through development of a proposal to expand the Living Planet Index method to include butterflies. We also held an initial two-hour butterfly monitoring meeting in October, with speakers from Vlinderstichting and ZSL, to introduce the project and link in new, important partners such as eButterfly. We are now in the process of establishing regular meetings on the subject via a monitoring subgroup within the Butterfly and Moth Specialist Group.

Membership

T-002 (KSR 2)

Number of SSC members recruited: 16

Result description: In 2021, the group welcomed 16 new members from 13 countries. The group now has a membership across 24 countries.

T-005 (KSR 2)

Number of regional subgroups established: 0

Result description: We are in the process of establishing a regional subgroup focusing on the Himalayan region, but this has not yet been formalised.

COMMUNICATE

Communication

T-013 (KSR 12)

Number of Species e-bulletin, *Save Our Species* newsletter, SSC Groups' newsletter editions produced: 4

Result description: This year, we initiated a newsletter for the group and produced four issues throughout the year. These are linked via the group's SSC Directory page.

Acknowledgements

We are grateful to the Zoological Society of London (ZSL) for their continued support of the Global Swallowtail Assessment. We are grateful to Albuquerque BioPark for driving various assessment processes for North American butterflies and moths. We continue to work closely with ZSL, Butterfly Conservation, Butterfly Conservation Europe, De Vlinderstichting, and the Centre for Ecology and Hydrology to develop a global butterfly indicator and collate butterfly and moth monitoring data.

Summary of achievements

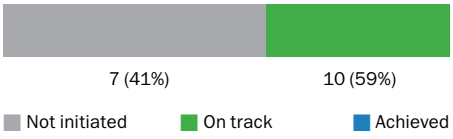
Total number of targets 2021–2025: 17

Geographic regions: 15 Global, 2 America, 2 Asia, 1 Europe

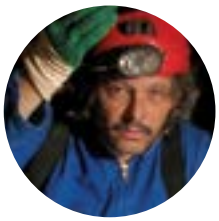
Actions during 2021:

Assess: 3 (KSR 5, 6)
Network: 3 (KSR 2, 3)
Communicate: 1 (KSR 12)

Overall achievement 2021–2025:



IUCN SSC Cave Invertebrate Specialist Group



SOCIAL MEDIA AND WEBSITE
Facebook: @caveinvertebrates
Twitter: @caveinverts

CHAIR
Louis Deharveng
Muséum national d'Histoire naturelle, Paris, France

RED LIST AUTHORITY COORDINATOR
Sonia Khela
JNCC, Peterborough, UK

NUMBER OF MEMBERS
90

Mission statement

The Cave Invertebrate Specialist Group (CISG) is a global network of experts working on organisms associated with karst and caves. Our goals are to contribute to increasing knowledge of these animals and plants, which are extremely rich in narrow endemics, and to promote conservation action through Red Listing, mostly focused on species under threats like limestone quarrying or water pollution.

Projected impact 2021–2025

Our activity will be progressively and significantly redirected towards more conservation-relevant species and sites, rather than towards multiple Red Listing of species not associated with clear conservation issues. We shall deliver a communication on this re-orientation at the Biospeleological Society Congress, held in Romania in July 2022. In parallel, we are discussing special features of subterranean animal assessments, as they strongly differ from surface species in many important respects; we hope that this will impact positively the way they are assessed in the near future. We also expect it will have a real impact on conservation efficiency by targeting as priority the species most at risk on critical sites.

Targets 2021–2025

ASSESS

T-001 Upgrade the Brazilian cave species from national to global IUCN Red List assessments.

T-002 Complete global Red List assessment of 20 cave species from Maros karst, South Sulawesi (Indonesia).

T-003 Complete global Red List assessment of several cave species from Georgia.

T-004 Complete global Red List assessment of Remipedia.

T-005 Complete global Red List assessment of a cave species from Hon Chong karst, Viet Nam.

T-010 Revise the global Red List assessments for the Dinaric cave clam *Congeria kusceri* (which is now three species).

NETWORK

T-011 Participate in designating the 'Tony Whitten Conservation Prize' fund for grants on cave biodiversity of Southeast Asia.

COMMUNICATE

T-006 Develop CISG website.

T-007 Participate at the 21st International Conference on Subterranean Biology, Romania, 2022 (still waiting on confirmation if it will be held).

T-008 Co-organise symposium session on Biospeleology at the 18th International Congress of Speleology in Lyon, France, 2022.

T-009 Set up a network of regional contact persons for identifying and dealing with regional issues.

T-014 Publish data on hot-spots of cave invertebrates, including evaluation of threats.

Activities and results 2021

ASSESS

Red List

T-001 (KSR 6)

Number of global Red List reassessments completed: 1

Result description: Upgrading of the Brazilian cave species from national to global IUCN Red List assessments was hampered by COVID restrictions in 2021; it was informally initiated in 2022 and is planned for 2023. It is a complicated task.

T-002 (KSR 6)

Number of new global Red List assessments completed: 1

Result description: In 2021, we published a paper which deals with most of the species we plan to assess on Maros: Deharveng, L., Rahmadi, C., Suhardjono, Y.R. and Bedos, A. (2021). 'The Towakkalak System, a hotspot of subterranean biodiversity in Sulawesi, Indonesia'. *Diversity* 13(8):392. https://doi.org/10.3390/d13080392. All data useful for the assessments have been gathered for most of the 20 species planned for Red Listing.



Quarries in Hon Chong hills (Viet Nam) in 2005, that are driving to extinction many microendemic species of this karst
Photo: Deharveng & Bedos

T-003 (KSR 6)

Number of new global Red List assessments completed: 1

Result description: The experts from Georgia have expressed the intention to assess several cave species for the IUCN Red List. The work is currently well advanced, as a few months ago the assessor completed his chapter 'Georgia' for the new edition of *Encyclopaedia Biospeologica* - Europe, which we coordinate and that will be published by Museum National d'Histoire Naturelle de Paris (France).

T-004 (KSR 6)

Number of new global Red List assessments completed: 0

Result description: Assessment of species has not yet started but will be discussed by end-2022 and should start in 2023.

T-005 (KSR 6)

Number of new global Red List assessments completed: 1

Result description: One publication was produced related to the species to be assessed: Deharveng, L., Bedos, A. and Lukic, M. (2020). 'The genus *Folsomides* in the Hòn Chông hills, Vietnam (Collembola: Isotomidae)'. *Raffles Bulletin of Zoology* 35:32–47. All data for the assessment, which remains to be formally written, are gathered in this paper.

T-010 (KSR 6)

Number of global Red List reassessments completed: 0

Result description: By the end of 2021, our expert group had expressed interest in assessing a group of cave species from Dinaric karst, including the three species of genus *Congeria*. The assessments are expected to be finalised in 2023.

NETWORK

Proposal development and funding

T-011 (KSR 1)

Number of candidates retained: 5

Result description: Grants of the Tony Whitten Memorial Award have been allocated to several young taxonomists and conservationists, of which a large part deal with cave invertebrates.

COMMUNICATE

Communication

T-006 (KSR 12)

Number of websites developed: 0

Result description: An SSC Internal Grant has been awarded for development of the CISG website. The funds have been transferred in 2022 and the grant and the target will be finished by the end of 2022.

T-007 (KSR 13)

Number of SSC members' presentations developed in relation to specific taxonomic groups: 1



Tritomurus falcifer (Collembola)
from Pyrenean caves. Length about 2 mm
Photo: Louis Deharveng



Cancrocaeca xenomorpha, a freshwater crab
from caves of the Maros karst (Indonesia)
Photo: RIGAL Didier

Result description: The Congress of the International Society of Biospeleology (ISSB) was postponed to 2022 due to COVID restrictions; it will be held in Romania, and we shall present a communication about cave invertebrate Red Listing.

T-008 (KSR 13)

Number of SSC members' presentations developed in relation to specific taxonomic groups: 0

Result description: Having been postponed from 2021 due to the COVID-19 pandemic, the congress of the International Union of Speleology (UIS) will take place in July 2022, same as the ISSB congress. Our planned communications were postponed as well. Within this congress, we are a co-organiser of the symposium session on cave biology and produced a first pre-print volume of papers at the end of 2021. The final volume is planed for the end of 2022, after the July congress. A number of papers end on conservation notes and may open the way to relevant species Red Listing. Information on the symposium on Biospeleology can be found at: https://uis2021.speleos.fr/symposium-7/.

T-009 (KSR 13)

Regional focal persons are identified and manage issues regarding their region: Ongoing.

Result description: Little progress has been made, as the two congresses where we should have discussed this with colleagues were postponed to 2022. The discussion will be held in these two congresses next summer.

T-014 (KSR 12)

Number of books, handbooks and guides published: 1

Result description: Reprint as a book of the Special Issue "Hotspots of Subterranean Biodiversity", originally published in HYPERLINK "https://www.mdpi.com/journal/diversity"Diversity (Pipan T., D.C. Culver and L. Deharveng (Eds.). 2021. Hotspots of Subterranean Biodiversity. https://doi.org/10.3390/books978-3-0365-2360-6).

Acknowledgements

Activities of the CISG largely rely on the efforts of Ana Komericki, working as Programme Officer, as well as the help of several labs, taxonomists, biologists and cavers for assessments and for new assessment proposals, given the large spectrum of organisms we are covering. No institutional partners are formally associated yet, but links are expected to be established within the current quadrennium with SSC groups whose coverage includes some partly subterranean taxa (crickets, snails, spiders), and with the World Commission on Protected Areas. In the red listing field project on the Maros karst invertebrate fauna (Indonesia: Sulawesi), the work will be done in cooperation with the Bantimurung-Bulusaraung National Park authorities.

Summary of achievements

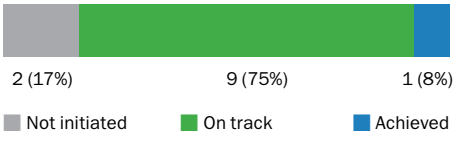
Total number of targets 2021–2025: 12

Geographic regions: 5 Global, 2 America, 4 Asia, 2 Europe, 1 Oceania

Actions during 2021:

Assess: 6 (KSR 6)
Network: 1 (KSR 1)
Communicate: 5 (KSR 12, 13)

Overall achievement 2021–2025:



2021 Report

IUCN SSC Coral Specialist Group



SOCIAL MEDIA AND WEBSITE
Instagram: @coralspecialistgroup
Twitter: @coralspecgroup
Website: https://www.coralspecialistgroup.org/

CHAIR
David Obura
CORDIO East Africa, Coastal Oceans Research and Development – Indian Ocean (CORDIO) East Africa

RED LIST AUTHORITY COORDINATOR
Beth Polidoro
Julie Ann Wrigley Global Institute of Sustainability, Arizona State University, Phoenix, Arizona, US

NUMBER OF MEMBERS
40

Mission statement

The IUCN Coral Specialist Group brings together leading scientists, practitioners and conservationists under the Species Survival Commission of the International Union for the Conservation of Nature. Reflecting the vast diversity of coral reefs, their importance to people in so many ways and the imminent threat to their very existence from climate change and human uses, the group has a broad ecosystem and conservation focus. Our combined knowledge contributes to inform society and policy makers to take science-based action.

Projected impact 2021–2025

The Red List of Threatened Corals is arguably one of the most important biodiversity indicators in global policy circles. Our priority is to update the Red List of Threatened Reef-building Corals and the Coral Red List Index. This is in order to contribute to policy and decision-making processes relevant to coral reefs, oceans and climate, and to align the actions of diverse coral reef stakeholders around the world.

Targets 2021–2025

ASSESS

T-004 Complete assessment of Red List status of reef-building corals.

PLAN

T-008 Identify regional conservation priorities for Scleractinia corals and build a blueprint to improve their status.

ACT

T-001 Update global policy with the extinction status of reef-building corals.

T-006 Promote the production of biodiversity data at the species level for reef-building corals, by facilitating the adoption of new technologies among the group's members.

NETWORK

T-002 Recruit at least 10 new members by 2022.

T-007 Increase availability and mobilisation of biodiversity data on reef-building corals by promoting and fostering the use of open data information systems for coral reefs.

T-009 Train new group members as Red List assessors within early 2021.

COMMUNICATE

T-005 Organise three public/international presentations to communicate the conservation work/Red List assessment results of the IUCN Coral Specialist Group.

Activities and results 2021

ASSESS

Red List

T-004 (KSR 6)

Number of species that have been assessed through the different tools: 84

Result description: We conducted Red List reassessments entirely online. Fifty-two of 873 are endemic to the Atlantic and were sent to the IUCN Species Information Service (SIS) system. Twenty-one researchers were participating in this work from 12 different countries. Currently, we are undertaking the rest of the global coral species reassessments to finish next year, 2022.

NETWORK

Membership

T-002 (KSR 2)

Number of SSC members recruited: ongoing

Result description: We have started with the recruitment process.

Capacity building

T-009 (KSR 2)

Number of people trained in assessment tools: 40

Result description: Altogether, this year and in 2020, we have engaged and trained more than 40 coral researchers in assessment tools.

IYOR Bank Coral Reefs
Photo: Eric Lukas / The Ocean Agency





IYOR Bank Cuba
Photo: David Gross / The Ocean Agency

COMMUNICATE

Communication

T-005 (KSR 13)

Number of SSC members' presentations developed in relation to specific taxonomic groups: 3

Result description: Our core team member at Arizona State University, Luis Gutierrez, presented the Atlantic Corals Red List assessment results. The Chair, Dr David Obura, participated and communicated about our Atlantic Red List reassessment progress at the UN Climate Change Conference (COP26). Our core team member, Dr Fran Cabada, presented our methodology and approach during the 14th International Coral Reef Symposium (ICRS2021) online meeting.

Acknowledgements

We want to give special thanks to our Coral Heroes, helping us update the Red List assessments in the Atlantic! In particular: Alasdair Edwards, Aldo Croquer, Anastazia Banaszak, Andrea Rivera-Sosa, Elvira Alvarado, Emma Kennedy, Estrella Villamizar, Flavia Nunes, James Crabbe, Jorge Cortés, Joshua Feingold, Juan Jose Alvarado, Juan Pablo Quimbayo, Liz Goergen, Lorenzo Alvarez-Filip, Marcelo Kitahara, Margaret Miller, Michael Sweet, Nadia Santodomingo, Rosa Rodríguez-Martínez, Kaveh Samimi-Namin, Greta Aeby, Bert Hoeksma, Doug Fenner and Mark Vermeij.

Summary of achievements

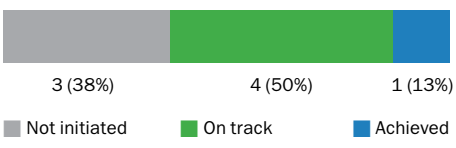
Total number of targets 2021–2025: 8

Geographic regions: 8 Global

Actions during 2021:

Assess: 1 (KSR 6)
Network: 2 (KSR 2)
Communicate: 1 (KSR 13)

Overall achievement 2021–2025:



IUCN SSC Dragonfly Specialist Group





SOCIAL MEDIA AND WEBSITE
Facebook: IUCN Dragonfly Specialist Group
Website: https://worlddragonfly.org/

CO-CHAIR
Viola Clausnitzer
Senckenberg Research Institute, Goerlitz, Germany

CO-CHAIR
Federico Lozano
Universidad Nacional de Avellaneda, Argentina

RED LIST AUTHORITY COORDINATOR
Viola Clausnitzer
Senckenberg Research Institute, Goerlitz, Germany

NUMBER OF MEMBERS
42

Mission statement

The mission of the IUCN SSC Dragonfly Specialist Group (DSG) is to increase the knowledge on taxonomy, ecology and biogeography of all Odonata (damselflies and dragonflies). Based on this information we are currently working on the final steps towards assessing all species globally against the criteria of The IUCN Red List of Threatened Species, while outdated assessments are updated. In parallel, we help conservationists and countries to protect threatened species.

Projected impact 2021–2025

In March/April 2021, we want to see all Odonata assessed on the IUCN Red List of Threatened Species. We hope to be able to help more countries with their National Red Lists and their endeavours with Biodiversity Action Plans. Hopefully more conservation projects and capacity building, not only for threatened species, can be established. Another goal is to establish dragonflies as 'guardians of the watershed', enabling a better understanding of biodiversity, a healthy environment and human well-being.



Chlorocypha cyanifrons
Photo: Jens Kipping

Stenocypha jacksoni, Nyungwe NP, Rwanda, August 2021
Photo: Viola Clausnitzer

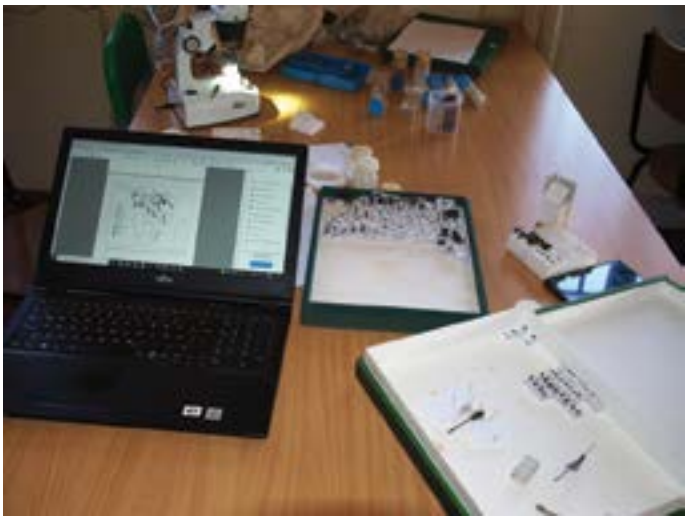


Field course in Nyungwe NP, Rwanda, August 2021
Photo: Viola Clausnitzer





Field course in Nyungwe NP, Rwanda, August 2021.
Dragonfly identification and preparation
Photo: Viola Clausnitzer



Collecting dragonflies. Field course
in Nyungwe NP, Rwanda, August 2021
Photo: Viola Clausnitzer

Targets 2021–2025

ASSESS

T-001 Global dragonfly assessment (6,320 species): all dragonfly species as listed on the World Odonata List are entered in the IUCN Species Information Service (SIS) and assessed against the Red List Criteria.

T-005 Develop a Dragonfly Biotic Index for Argentina.

T-006 Develop a National Red List of Argentina and Kenya.

T-008 Reassess South American species.

T-009 Obtain more information on *Andinagrion saliceti* to assist conservation planning.

T-011 Research and produce a scientific publication on dragonflies of Manu National Park (Peru).

T-012 Develop a National Red List for Rwanda.

T-013 Update and expand the National Red List of Brazil.

T-017 Contribute to the National Red List of Peru.

T-020 Update/reassess the European Red List.

T-021 Ensure dragonflies are represented in overall discussions on SIS, Red Listing, reassessments, etc.

PLAN

T-004 Provide technical and scientific support in measuring the pulse of European biodiversity using the Red List Index.

T-010 Develop a species conservation plan for *Andinagrion saliceti*.

T-014 Develop a species conservation plan for *Roppaneura beckeri* and *Minagrion ribeiroi*.

T-022 Conduct Area of Habitat (AOH) mapping for the freshwater Species Threat Abatement and Restoration (STAR) project.

ACT

T-015 Implement a species conservation plan for *Roppaneura beckeri* and *Minagrion ribeiroi*.

NETWORK

T-002 Provide Red List training to group members and local conservationists for global and national assessments.

COMMUNICATE

T-003 Provide vernacular names and photos for as many dragonfly species as possible on the Red List.

T-007 Produce a field guide of dragonflies of Buenos Aires (Argentina).

T-016 Produce an informative guide of dragonflies of Manu Learning Centre (Peru).

T-018 Promote dragonfly knowledge among non-specialists in Argentina.

T-019 Publish the atlas of the Odonata of West and Central Asia (Turkey, Cyprus, Sinai and Yemen to Afghanistan, Kyrgyzstan, Turkmenistan and the South Caucasus).



Chlorocypha trifaria, Uganda
Photo: Viola Clausnitzer

Activities and results 2021

ASSESS

Red List

T-001 (KSR 6)

Number of new global Red List assessments completed: 1,124

Result description: All Odonata are in SIS. During 2021, over 1,500 assessments were reviewed and a total of 1,124 species were published on the IUCN Red List; most of these species were from Latin America. The remaining 250 species will be published with the next Red List update. The global dragonfly assessment was completed in 2021!

T-006 (KSR 6)

Number of new national Red List assessments published: 0

Result description: The assessments of the Argentinean and Kenyan species have started. Information is being compiled and assessments are on track. The Kenyan assessments will be published in 2022 and endemic species will be re-assessed for the global Red List. The Argentinean assessments will be published during 2023.

T-017 (KSR 6)

Number of new national Red List assessments published: 25

Result description: A total of 25 species were assessed during 2021. This was done in the framework of the updating of the National Red List of the fauna of Peru. It was coordinated by Servicio Nacional Forestal y de Fauna Silvestre (SERFOR). Results are awaiting publication.

T-020 (KSR 6)

Number of global Red List reassessments completed: 1,146

Result description: A total of 1,146 global Red List assessments have been published in 2021, while several hundreds more are in the publication queue.

Research activities

T-005 (KSR 5)

Number of scientific publications about species research that acknowledge SSC affiliation: At least 10, but most likely far more.

Result description: This is an ongoing work and at least the publications by Viola Clausnitzer in 2021 all acknowledge SSC affiliation, while publications by Tchibozo, Dow, Zia, van Damme also mention SSC affiliation.

T-011 (KSR 5)

Number of research projects completed or supported by SSC members per taxonomic group and region: At least 5.

Result description: Globally, there is a rather large network of Odonatologists, not all who contribute to the IUCN/SSC Dragonfly



Pristine habitat, Cuemba, Angola
Photo: Jens Kipping



Sampling freshwater invertebrates in Nyungwe NP, Rwanda, 2021
Photo: Viola Clausnitzer

Specialist Group are necessarily a member. Hence, it is difficult to get a true picture of projects completed. There are numerous projects focusing on regions and taxa worldwide and it would consume too much time to get them all listed. Some examples follow: (1) Peru - Research within the area was done during 2020–2021. Specimens collected are being studied and identified. Field work was done with the aid of CREES, a Peruvian NGO; (2) Indonesia - Hening Triandika Rachman worked on "Preserving The Last Remaining Populations of Javan Endemic Damselfly (Rhinagrion tricolor) in Nusakambangan Island" with a grant by the Rufford Foundation; (3) Rwanda - Erasme Uyizeye completed another publication about his work on Rwandese Odonata (amongst others funded by National Geographic). Viola Clausnitzer led a Field Course Rwanda, training scientists and conservationists in dragonfly taxonomy and monitoring; (4) Kenya - Laban Njoroge and his team did a lot of surveys countrywide, resulting in new data for conservation planning for Kenya's endemic Odonata; (5) Nigeria - KD Dijkstra joint a team of Nigerian Odonatologists for field work – they got new information and new records for the country.

PLAN

Policy

T-004 (KSR 9)

Number of documents provided to support/guide policy making: ongoing

Result description: This is still a work in progress; Geert de Knijff is leading on this.

NETWORK

Capacity building

T-002 (KSR 2)

Number of people trained in assessment tools: Over 50.

Result description: During 2021, a brief online course on Red Listing was provided by Federico Lozano during the III Encuentro de la Sociedad de Odonatología Latinoamericana (24–26 November 2021). This course was virtual, taking into account the global health situation. It consisted of seven sessions which covered the basic topics related to the Red Listing process and a final session of questions and examples. This course was taken by 24 participants. Viola Clausnitzer also provided two IUCN Red List training courses to an international group of conservationists at the International Academy for Nature Conservation Isle of Vilm, German Federal Agency for Nature Conservation ('44th International Postgraduate Course on Environmental Management' and 'International Nature Conservation').

COMMUNICATE

Communication

T-003 (KSR 12)

Number of photos uploaded: ongoing

Result description: Work is still ongoing; KD Dijkstra has prepared a list for all Odonata and is liaising with the various experts concerning appropriate vernacular names.

T-007 (KSR 13)

Digital Field Guide of Dragonflies of Buenos Aires produced: ongoing

Result description: This is still a work in progress. Federico Lozano is leading this. A sample of a page of the field guide is provided in the SSC DATA site of this Specialist Group.

T-016 (KSR 13)

Number of print communications materials distributed in relation to specific taxonomic groups: ongoing

Result description: Research within the area was done during 2020–2021. Specimens collected are being studied and identified. Field work was done with the aid of CREES, a Peruvian NGO.

T-019 (KSR 13)

Number of print communications materials distributed in relation to specific taxonomic groups: 1

Result description: The 'Atlas of the dragonflies and damselflies of West and Central Asia' was published: https://www.researchgate.net/publication/355479299_Atlas_of_the_dragonflies_and_damselflies_of_West_and_Central_Asia.

Acknowledgements

We thank the Worldwide Dragonfly Association for their ongoing support of DSG work.

Summary of achievements

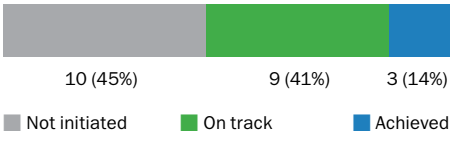
Total number of targets 2021–2025: 22

Geographic regions: 5 Global, 1 Africa, 13 America, 1 Asia, 2 Europe

Actions during 2021:

Assess: 6 (KSR 5, 6)
Plan: 1 (KSR 9)
Network: 1 (KSR 2)
Communicate: 4 (KSR 12, 13)

Overall achievement 2021–2025:



IUCN SSC Firefly Specialist Group





SOCIAL MEDIA AND WEBSITE
Facebook: Friends of Fireflyers International; @silent.sparks; IUCN SSC Firefly Specialist Group
Twitter: @silent_sparks
Website: fireflyersinternational.net
YouTube: Fireflyers International Network

CO-CHAIR
Sara Lewis
Department of Biology, Tufts University, Medford, Massachusetts, US

CO-CHAIR
Wong Choong Hay (Sonny)
Conservation Division, Malaysian Nature Society, Kuala Lumpur, Malaysia

RED LIST AUTHORITY COORDINATOR
Vor Yiu
Hong Kong Entomological Society, Yuen Long, Hong Kong

NUMBER OF MEMBERS
47

Mission statement

Our mission is to compile existing knowledge for ~2000 lampyrid species worldwide on their geographic range, population size, and population trends, to identify major extinction threats and risk factors, to increase public knowledge concerning firefly diversity, ecology and behaviour, and to promote long-term conservation efforts.

Projected impact 2021–2025

By the end of the quadrennium we hope to: (1) establish monitoring programmes for most of the threatened firefly species on the Red List (Critically Endangered, Endangered, Vulnerable); (2) distribute guidelines for sustainable tourism to places where firefly tourism is rapidly developing; and (3) complete the Assess to Plan (A2P) process for congregating mangrove fireflies of Southeast Asia.

Targets 2021–2025

ASSESS

T-004 Write and publish a scientific article with guidelines for sustainable firefly tourism.

T-005 Submit global assessments for North American firefly species.

T-006 Write and publish scientific articles including: new species descriptions, ecology and behaviour, threats.

T-007 Complete global assessments of fireflies in Hong Kong, Thailand, Malaysia, Europe and Taiwan.

T-008 Develop and disseminate standardised methodologies for monitoring firefly species abundances.

PLAN

T-009 Identify stakeholders and hold a national Workshop on Guidelines for Sustainable US Firefly Tourism.

T-010 Organise a regional Key Biodiversity Area/Conservation Planning Workshop to protect habitat of congregating mangrove fireflies with other taxa in Southeast and East Asia.

T-011 Identify stakeholders and hold a national Conservation Planning Workshop for threatened US fireflies (South-eastern and Mid-Atlantic states).





Photinus firefly (US) and *Photuris* firefly (US)
Photos: Radim Schreiber



Females of many firefly species lack functional wings, making them especially vulnerable to accidental trampling in areas of heavy foot traffic
Photo: Radim Schreiber / FireflyExperience.org

Courtship display of Japanese fireflies
Photo: Tsuneaki Hiramatsu



T-012 Identify stakeholders and hold a national Conservation Planning Workshop in Mexico to discuss guidelines for sustainable tourism for the endemic firefly *Photinus palaciosi*.

T-013 Start developing guidelines for captive breeding and restoration of firefly populations.

T-018 As needed, issue regional-specific position statements addressing major drivers and/or emerging threats of firefly species/population loss.

ACT

T-014 Act as consultant to Forestry Research Institute of Malaysia (FRIM) on their 6-year project to do national conservation planning and tourism guidelines for congregating mangrove fireflies in 12–14 river systems.

T-015 Provide technical consults for national and local entities to support firefly conservation efforts, including local Firefly Sanctuaries.

T-016 Prepare intervention letters addressing major drivers and/or emerging threats of firefly species/population loss.

T-017 Establish biological monitoring programmes to determine population trends for threatened firefly species by working with citizen science groups, volunteers, local and state agencies.

T-020 Disseminate firefly tourism guidelines developed in Thailand, Malaysia, Taiwan and Mexico to other countries to encourage sustainable natural resource use.

NETWORK

T-001 Strengthen existing partnerships with Xerces and New Mexico BioPark Society for species assessment and planning.

T-002 Strengthen existing partnership with Fireflyers International Network for outreach and communication.

T-019 Strengthen ties with the International Dark-Sky Association (IDA) for IDA/Firefly Sanctuary certification.

COMMUNICATE

T-021 Compile a list of relevant documents and make them publicly available (e.g. on the Fireflyers International Network website).

T-022 Work with IUCN Communications, national and international media to publicise threatened firefly species, conservation actions and outcomes.

T-023 Appoint a focal person to manage social media outreach (e.g. Twitter, Instagram, others).

T-024 Give interviews and presentations to schools, communities, government agencies and the public.

T-025 Harness the power of visual imagery by collaborating with artists, videographers, photographers and musicians to spread awareness of firefly ecology and conservation.

Activities and results 2021

ASSESS

Red List

T-005 (KSR 6)

Number of new global Red List assessments completed: 135

Result description: Global assessments for ~135 US species have been submitted to the Red List Unit.

T-007 (KSR 6)

Number of new global Red List assessments completed: 1

Result description: In 2021, we started discussions with the Conservation Planning Specialist Group (CPSG), who agreed to help us undertake Assess to Plan (A2P) for congregating mangrove fireflies of Southeast Asia.

Research activities

T-004 (KSR 5)

Number of scienti fic publications about species research that acknowledge SSC affiliation: 1



A trolly brings visitors to display sites of *Photinus carolinus* in their forest habitat at Elkmont TN, US
Photo: Great Smoky Mountains National Park, public domain



In Taiwan at Liyu Lake, tourists learn about firefly life cycles and species identification from a trained guide
Photo: Sara Lewis

Result description: Scientific article forthcoming in *Conservation Science and Practice*.

T-006 (KSR 5)

Number of scientific publications about species research that acknowledge SSC affiliation: 8

Result description: Multiple members published peer-reviewed articles on firefly species descriptions, ecology and behaviour, light pollution impacts on fireflies and other insects.

T-008 (KSR 6)

Publication of standardised monitoring protocols: 0

Result description: Vor Yiu (Red List Authority Coordinator) is working on development and dissemination of standardised methodologies for monitoring firefly species abundances.

PLAN

Planning

T-009 (KSR 8)

Number of conservation plans/strategies developed: 1

Result description: In collaboration with The Xerces Society, we identified stakeholders and held a remote Workshop on Guidelines for Sustainable US Firefly Tourism. After this meeting, we established a US Firefly Tourism Council and are currently working on materials to distribute to site managers and tourists.

T-011 (KSR 8)

Number of conservation plans/strategies developed: 1

Result description: In collaboration with the Xerces Society, we have met virtually with federal, state and local officials who will begin surveys for threatened fireflies in three US regions to gather occurrence data during summer 2022.

T-018 (KSR 8)

Number of position statements issued: 0

Result description: In 2021, we worked in collaboration with The Xerces Society to establish a US Firefly Tourism Council, to publish a downloadable pdf with Guidelines for US Firefly Tourism for site managers, and tips for firefly-watching intended to minimise impact on target firefly populations.

ACT

Technical advice

T-015 (KSR 10)

Number of technical consultations provided to support conservation actions: 4

Result description: Letters were sent supporting US local conservation efforts. A podcast interview was given for the first US Firefly Sanctuary established by the New Canaan Land Trust (Connecticut, US).

NETWORK

Synergy

T-001 (KSR 1)

Number of 'in kind' partnerships established and maintained: 1

Result description: Together with New Mexico BioPark Society and Xerces Society, we have submitted the first Red List assessments for ~135 US firefly species. In addition, thanks to Anna Walker and colleagues, nearly all our Specialist Group members have gone through Red List training.

T-002 (KSR 1)

Number of 'in kind' partnerships established and maintained: 1

Result description: Partnership with Fireflyers International established, and collaborative planning underway for an International Firefly Symposium to be held in Portugal in June 2022.

T-019 (KSR 1)

Number of 'in kind' partnerships established and maintained: 1

Result description: Dr Avalon Owens, an expert on how light pollution affects fireflies, is our new IDA Dark-Sky liaison. In collaboration with The Xerces Society, we have published Firefly-Friendly Light Guidelines (in English and Spanish, available in the SSC DATA database).



Firefly tourism site in Chiayi County, Taiwan
Photo: Hua-Te Fang

COMMUNICATE

Communication

T-022 (KSR 12)

Number of media articles mentioning IUCN Species theme: 36

Result description: Firefly Specialist Group members wrote or presented at least 13 popular articles or talks about conservation. In 2021, Firefly Specialist Group members' activities were covered in at least 23 media outlets (online, radio, TV, newspaper, podcast, interviews). Please see the file '2021 Firefly Specialist Group Activities' in the SSC DATA database for details and links. In addition, the Mysterious Lantern Firefly (*Photuris mysticalampas*), an Endangered US species, was featured as an Amazing Species on the Red List.

T-024 (KSR 13)

Number of SSC members' presentations developed in relation to specific taxonomic groups: 50

Result description: In 2021, Firefly Specialist Group members wrote or presented at least 13 popular articles or talks about conservation. In 2021, Firefly Specialist Group members' activities were covered in at least 23 media outlets (online, radio, TV, newspaper, podcast, interviews). Please see the file '2021 Firefly Specialist Group Activities' in the SSC DATA database for details and links.

T-025 (KSR 13)

Number of communication products using innovative tools: 2

Result description: Photographers Radim Schreiber and Hua-Te Fang joined the Specialist Group as Visual Storytelling Specialists.

Acknowledgements

The Firefly Specialist Group thanks the New Mexico BioPark Society for sharing their expertise in Red List training and assessment, and The Xerces Society for Invertebrate Conservation for working on Red List assessments for North American species. The Xerces Society has also been an invaluable partner in preparing and disseminating public information on firefly conservation guidelines, US Red List status, guidelines for sustainable firefly tourism, and firefly-friendly lighting practices. We are also grateful to the Parque Biológico de Gaia for hosting and to the Mohamed bin Zayed Species Conservation Fund and IUCN SSC internal grant for providing support for our 2022 Red Listing Workshop in Portugal.

Summary of achievements

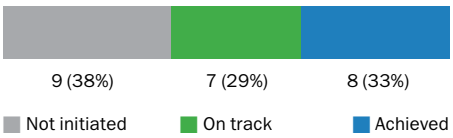
Total number of targets 2021–2025: 24

Geographic regions: 17 Global, 5 America, 3 Asia

Actions during 2021:

Assess:	5 (KSR 5, 6)
Plan:	3 (KSR 8)
Act:	1 (KSR 10)
Network:	3 (KSR 1)
Communicate:	3 (KSR 12, 13)

Overall achievement 2021–2025:



IUCN SSC Freshwater Crustacean Specialist Group





CO-CHAIR
Neil Cumberlidge
Northern Michigan University, Marquette, Michigan, US

CO-CHAIR
Keith Crandall
George Washington University, Washington, DC, US

RED LIST AUTHORITY COORDINATORS
Darren Yeo
Department of Biological Sciences, National University of Singapore, Singapore

Keith Crandall
George Washington University, Washington, DC, US

Sammy De Grave
Oxford University Museum of Natural History, Oxford, UK

NUMBER OF MEMBERS
25

Mission statement

The mission of the IUCN SSC Freshwater Crustacean Specialist Group (FCSG) is to work towards all aspects of the long-term conservation of freshwater decapods (freshwater crabs, crayfish, freshwater shrimps and aeglids) worldwide. Specific goals are: (1) to act as the Red List Authority and to update IUCN Red List species assessments; (2) to promote their long-term conservation worldwide by management of habitats and by the development of conservation strategies and, where necessary, the recovery of populations; (3) to promote integrated research on biodiversity and conservation; (4) to educate non-specialists about all aspects of the group; and (5) to create and maintain an FCSG website that will provide up-to-date world species lists, keep track of the discovery of new species, and list the Red List status for each species.

Projected impact 2021–2025

By the end of 2025, we hope to have completed updates across the freshwater crabs, crayfishes and shrimps, including the addition of newly described species, updates in taxonomy, and reassessments of those species in need based on lacking an initial assessment and/or new data relevant to assessments. We will also complete the global conservation assessment of the Aeglidae. We will identify key species in each of these four main freshwater crustacean groups (crabs, crayfishes, shrimps, and aeglids) to highlight as in need of conservation priority and target conservation efforts and plan development as part of our Specialist Group. Like many invertebrate groups, the first and fundamental impediment to conservation of freshwater crustaceans is simply documenting the species and having an assessment. Thus, our focus for the next quadrennium will be also to link efforts with related IUCN Specialist Groups, especially the Cave Invertebrate, South Asian Invertebrate, Terrestrial and Freshwater Invertebrate organismal Groups as well as many of the relevant cross-cutting groups such as Asian Species Action Partnership, Climate Change Specialist Group, Biodiversity and Protected Area Task Force, Conservation Genetics Specialist Group, Conservation Planning Specialist Group and Phylogenetic Diversity Task Force.

Targets 2021–2025

ASSESS

T-002 Update *Euastacus* Red List status based on reassessments.

T-007 Update crayfish taxonomy with Red List assessments where applicable.

T-009 Update North American Crayfish Red List.

T-012 Update South American Crayfish Red List.

T-013 Conduct Red List assessments for *Aegla* species (family Aeglidae).



Procambarus orcinus from Florida caves
Photo: Nelson & Crandall

T-015 Update freshwater crab taxonomy with Red List assessments where applicable.

T-016 Complete a global Red List reassessment of the freshwater crabs.

PLAN

T-006 Plan reassessment meetings for the coming years: (1) crabs, (2) shrimp, (3) crayfish.

T-008 Develop concepts for Marine Crustacean Specialist Group(s).

NETWORK

T-005 Increase membership in FCSG.

COMMUNICATE

T-003 Develop multiple communication channels for the FCSG.

T-014 Support Freshwater Conservation Committee communications highlighting freshwater species at risk and threats to freshwater systems.

Activities and results 2021

ASSESS

Red List

T-013 (KSR 6)

Number of new global Red List assessments completed: 0

Result description: We enlisted the help of the Global Center for Species Survival to support the assessments of these species, in particular the transfer of data into the IUCN Species Information Service (SIS), with the help of the Global Center intern. The work will commence in January 2022. Mapping will be supported by the IUCN Freshwater Biodiversity Unit and the Global Center for Species Survival.

PLAN

Planning

T-008 (KSR 8)

Number of conservation plans/strategies developed: 0

Result description: This target is no longer a priority. After discussion with the Global Center for Species Survival, it appears there are several other players, including the Global Center, who can push forward the development of marine crustacean Specialist Groups or Red List Authorities.

NETWORK

Membership

T-005 (KSR 2)

Number of SSC members recruited: 25

Result description: We have recruited 25 members to the group of the 15 targeted.

COMMUNICATE

Communication

T-014 (KSR 12)

Contribute to and disseminate communications from Freshwater Conservation Committee's Species at risk report (in partnership with Shoal) within and outside SSC: ongoing

Result description: At the end of 2021, the group – on request from the Freshwater Conservation Committee – nominated 11 freshwater crustacean species for consideration in the publication. Subsequently, five of these were selected for inclusion in the report: Alabama Cave Shrimp (*Palaemonias alabamae*), Mallacoota Burrowing Crayfish (*Engaeus mallacoota*), Singapore Freshwater Crab *(Johora singaporensis)*, White-clawed Crayfish (*Austropotamobius pallipes*) and Tree Hole Crab *(Globonautes macropus).* The group continues to contribute to the report with information and review of species information and other content for the species selected to be highlighted.

Summary of achievements

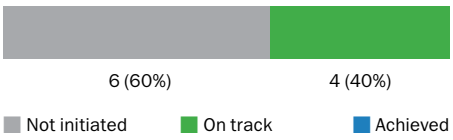
Total number of targets 2021–2025: 10

Geographic regions: 6 Global, 3 America, 1 Oceania

Actions during 2021:

Assess: 1 (KSR 6)
Plan: 1 (KSR 8)
Network: 1 (KSR 2)
Communicate: 1 (KSR 12)

Overall achievement 2021–2025:



IUCN SSC Grasshopper Specialist Group





SOCIAL MEDIA AND WEBSITE
Facebook: IUCN SSC Grasshopper Specialist Group
Website: iucn.org/ssc-groups/invertebrates/grasshopper

CO-CHAIR
Axel Hochkirch
Trier University, Germany

CO-CHAIR
Kate Umbers
Western Sydney University, Australia

RED LIST AUTHORITY COORDINATOR
Baudewijn Odé
Stichting Floron, Amsterdam, The Netherlands

NUMBER OF MEMBERS
130

Mission statement

The mission of our group is to foster the conservation of orthopteroid insects (grasshoppers, katydids, crickets, mantids, stick insects) and their habitats around the world. We assess their conservation status, raise awareness and engage in practical conservation of this amazing and highly diverse group of insects.

Projected impact 2021–2025

Improving the status of threatened Orthoptera by implementing conservation action based upon sound knowledge, Red List assessments and conservation planning.

Targets 2021–2025

ASSESS

T-002 Complete Red List assessments of 200 Tanzanian Orthoptera species.

T-003 Complete Red List assessments of 80 Mediterranean mantises.

T-004 Complete Red List assessments of Razor-backed Bush-hoppers (Xyronotidae).

T-005 Complete Red List assessments of Tanoceridae grasshoppers.

T-006 Complete Red List assessments of 100 Malagasy grasshoppers.

T-007 Complete Sampled Red List Index for Orthoptera.

T-008 Develop monitoring standards for Orthoptera in Europe.

T-009 Complete Red List assessments of Socotran endemic Orthoptera.

T-010 Complete Red List assessments of Dichoroplini grasshoppers from South America.

T-011 Complete Red List assessments of grasshoppers from the Western Ghats (India).

T-016 Complete Red List assessments of Orthoptera species from Pakistan.

T-017 Complete Red List assessments of North American mantises.

T-019 Complete Red List assessments of Anatolian Saga species.

T-020 Examine the effects of land use changes in dry karst regions on threatened Orthoptera.

T-021 Examine the effects of wildfires on the Madeiran Green Bush-cricket (*Psalmatophanes barretoi*).

T-022 Examine the effects of wildfires on Australian Orthoptera.

T-023 Complete Red List assessments of Cameroon endemic Orthoptera species.

T-030 Complete Red List assessments of Vietnamese Mantodea.

PLAN

T-018 Develop a conservation strategy for Bei-Bienko's Plump Bush-cricket (*Isophya beybienkoi*) in Slovakia.

T-025 Update the conservation strategy for Crau Plain Grasshopper (*Prionotropis rhodanica*).

ACT

T-012 Implement the conservation action plan for Adriatic Marbled Bush-cricket (*Zeuneriana marmorata*) in Italy.

T-013 Implement the conservation action plan for Adriatic Marbled Bush-cricket (*Zeuneriana marmorata*) in Slovenia.

T-014 Conduct population monitoring for the Atlantic Beach-cricket (*Pseudomogoplistes vicentae*) in the British Isles.

T-024 Implement guidelines for the protection of the Giant-cricket (*Brachytrupes megacephalus*)

T-026 Implement the conservation strategy for Crau Plain Grasshopper (*Prionotropis rhodanica*).

T-027 Translocate the Common Field-cricket (*Gryllus campestris*) in Cologne.

T-028 Develop and implement habitat management for the Common Saw Bush-cricket (*Barbitistes serricauda*).

T-032 Implement the conservation strategy for the Cika Mountain Grasshopper *(Peripodisma ceraunii*).



The Speckled Buzzing Grasshopper (*Bryodemella tuberculata*) is listed as Vulnerable on the European Red List
Photo: Axel Hochkirch

NETWORK

T-001 Organise the Third European Congress on Orthoptera Conservation.

T-033 Hold virtual meetings of the Grasshopper Specialist Group.

T-034 Expand the membership of the group by adding more phasmid experts.

T-036 Organise a symposium on *Prionotropis* conservation.

COMMUNICATE

T-015 Organise a performance of the Locust Opera at the World Conservation Congress in Marseille.

T-029 Publish the next volume of the *Newshopper*.

Activities and results 2021

ASSESS

Red List

T-003 (KSR 6)

Number of new global Red List assessments completed: 0

Result description: As it was difficult to obtain data on mantises from North Africa, the mantis experts in the Grasshopper Specialist Group decided to move their activities to North American and Vietnamese mantises.

T-004 (KSR 6)

Number of new global Red List assessments completed: 0

Result description: Ricardo Mariño-Pérez has successfully raised funds to assess all Xyronotidae species.

T-005 (KSR 6)

Number of new global Red List assessments completed: 0

Result description: Ricardo Mariño-Pérez has successfully raised funds to assess all Tanoceridae species.

T-007 (KSR 6)

Number of new global Red List assessments completed: 20

Result description: Twenty new global Red List assessments have been completed.

T-010 (KSR 6)

Number of new global Red List assessments completed: 26

Result description: A total of 26 Red List assessments of South American Dichoroplini have been completed. The remaining species will be assessed in the coming years.

T-011 (KSR 6)

Number of new global Red List assessments completed: 0

Result description: Field work has been carried out by Dhaneesh Bhaskar to obtain the necessary data for Red List assessments.

T-016 (KSR 6)

Number of new global Red List assessments completed: 0

Result description: A list of 28 species for inclusion in the IUCN Species Information Service (SIS) has been compiled by Ahmed Ali Samejo and sent to the Red List Unit in October 2021.

Research activities

T-021 (KSR 5)

Number of research projects completed or supported by SSC members per taxonomic group and region: 0

Result description: Howon Rhee has conducted some intensive field surveys to assess the impact of wildfires on the Madeiran Green Bush-cricket (*P. barretoi*). The first data are currently being analysed and will hopefully be published in 2022.

T-022 (KSR 5)

Number of research projects completed or supported by SSC members per taxonomic group and region: 1

Result description: Kate Umbers has helped to assess the Red List status of several endemic Orthoptera species from Australia to assess the effects of the large wildfires in 2019–2020.



Cika Mountain Grasshopper (*Peripodisma ceraunii*), male
Photo: Michèle Lemonnier-Darcemont

T-023 (KSR 6)

Number of new global Red List assessments completed: 1

Result description: A Red List assessment for *Gemeneta opilionides* has been drafted and will be completed in 2022.

PLAN

Planning

T-018 (KSR 8)

Number of conservation plans/strategies developed: 0

Result description: Our European Regional Vice-Chair, Soňa Nuhlíčková, has successfully raised funding from the Mohamed bin Zayed Species Conservation Fund to develop the conservation strategy.

T-025 (KSR 8)

Number of conservation plans/strategies updated: 0

Result description: The revision of the strategy has been postponed due to the COVID-19 pandemic. However, our member Lisbeth Zechner was able to secure LIFE funding for the project, so that an updated strategy will be completed during the next 1–2 years (depending on COVID-19).

ACT

Conservation actions

T-012 (KSR 10)

Number of conservation translocations conducted: 1

Result description: A translocation of Adriatic Marbled Bush-cricket (*Zeuneriana marmorata*) to an unoccupied habitat was conducted in 2021.

Number of threatened species benefiting from *in situ* conservation action: 1

Result description: As a result of the implementation of the conservation action plan, Adriatic Marbled Bush-cricket (*Zeuneriana marmorata*) benefits from *in situ* conservation action.

Number of areas under management for the species or group of species: 1

Result description: Conservation management in the Isonzo delta has been adapted to benefit the species.

T-013 (KSR 10)

Number of species with increased or prevented decrease in population or range size, as a result of conservation actions: 1

Result description: A translocation of Adriatic Marbled Bush-cricket (*Zeuneriana marmorata*) to a suitable habitat was carried out in 2021.

Number of threatened species benefiting from *in situ* conservation action: 1

Result description: The implementation of the conservation action plan for Adriatic Marbled Bush-cricket (*Zeuneriana marmorata*) has led to improved habitat management in the Ljubljana marshes.

T-014 (KSR 10)

Number of monitoring years: 1

Result description: Monitoring of the Atlantic Beach-cricket (*P. vicentae*) has started on the British Isles. This revealed that while the population is still present at Marloes Sands (and a small population at Dale), loss of suitable habitat has continued at Marloes Sands, contracting the population to a very small area of the beach. The site in Branscombe, Devon was surveyed by Karim Vahed in August 2021 using baited pitfall traps. The numbers trapped were lower than previous years, but individuals were still present across the site. The site at Chesil Beach requires another survey. A new population between the Branscombe (Devon) site and the Chesil Beach (Dorset) site was discovered by Clive Huggins in summer 2021.

T-026 (KSR 10)

Number of conservation translocations conducted: 0

Result description: A translocation strategy for Crau Plain Grasshopper (*Prionotropis rhodanica*) will be compiled during the coming years. LIFE funding has been secured for the implementation.

Number of species with increased or prevented decrease in population or range size, as a result of conservation actions: 1

Result description: The conservation management, particularly fencing the Peau de Meau population of the Crau Plain Grasshopper, has led to a population increase on the site.

Number of threatened species benefiting from *in situ* conservation action: 1

Result description: The Crau Plain Grasshopper benefits from conservation action in the Crau, including a captive breeding project and adaptive conservation management.

T-027 (KSR 10)

Number of conservation translocations conducted: 1

Result description: The Common Field-cricket was translocated to Cologne in summer 2021. During the coming years we will monitor the success of the translocation.

Number of species with increased or prevented decrease in population or range size, as a result of conservation actions: 1

Result description: The translocation of the Common Field-cricket to Cologne has led to an increase in range size by crossing the Rhine River.

Number of threatened species benefiting from *in situ* conservation action: 1

Result description: The conservation management of the release site has been adapted to benefit the translocated Common Field-cricket population in Cologne.

Number of areas under management for the species or group of species: 1

Result description: The release area in Cologne is now under enhanced conservation management, securing the survival of the translocated population.

T-028 (KSR 10)

Number of technical consultations provided to support conservation actions: 1

Result description: In 2021, a project for the protection of the Common Saw Bush-cricket (*Barbitistes serricauda*) was started in Germany. Data on its distribution was collected, showing a decrease of ca. 20% of occupied sites since the 1990s. A Zoom meeting with stakeholders was conducted in October 2021 to plan the next steps of this project. More information (in German) is found here: https://www.uni-trier.de/universitaet/fachbereiche-faecher/fachbereich-vi/faecher/biogeographie/elsa

T-032 (KSR 10)

Number of threatened species benefiting from *in situ* conservation action: 1

Result description: During a stakeholder workshop in May 2021, a conservation strategy for Cika Mountain Grasshopper *(Peripodisma ceraunii*) was compiled. Data on abundance of populations has been collected and contacts with herders and protected area managers will help to improve conservation management in the area.

Number of areas under management for the species or group of species: 1

Result description: More information about the Cika Mountain Grasshopper project can be found here: https://www.species-conservation.org/case-studies-projects/cika-mountain-grasshopper/23517.

NETWORK

Capacity building

T-033 (KSR 2)

Number of people trained in other fields: 2

Result description: The Grasshopper Specialist Group had two virtual meetings in 2021 (25 February and 19 April).

Membership

T-001 (KSR 2)

Congress completed: qualitative result

Result description: The congress was initially planned for 2020 but was postponed twice due to the COVID-19 pandemic. It is now scheduled for April 2022.

T-034 (KSR 2)

Number of SSC members recruited: 16

Result description: In 2021, 16 Phasmid experts became members of the IUCN SSC Grasshopper Specialist Group.

T-036 (KSR 3)

Number of symposium attendees: 50

Result description: An international symposium on the conservation of stone grasshoppers (genus *Prionotropis*) was held by Zoom on 3 December 2021. An important outcome of the meeting was the conclusion that all species of the genus face very similar threats that are largely affected by changes in land use (particularly abandonment, but also overgrazing). We plan to instigate an international conservation project for *Prionotropis* species.

COMMUNICATE

Communication

T-029 (KSR 13)

Number of digital communication outputs developed in relation to specific taxonomic groups: 0

Result description: Publication of our next newsletter is planned for 2022.

Acknowledgements

We are grateful to the SSC Chairs' Office for constant support, including SSC internal grants. We also want to thank Sergio Henriques (Global Center for Species Survival) for his help. Finally, we are grateful to the Mohamed bin Zayed Species Conservation Fund.

Summary of achievements

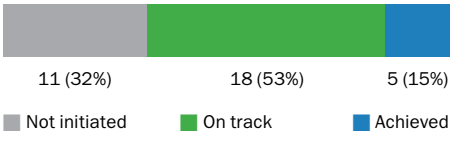
Total number of targets 2021–2025: 34

Geographic regions: 6 Global, 3 Africa, 5 Asia, 4 America, 15 Europe, 1 Oceania

Actions during 2021:

Assess:	10 (KSR 5, 6)
Plan:	2 (KSR 8)
Act:	16 (KSR 10)
Network:	4 (KSR 2, 3)
Communicate:	1 (KSR 13)

Overall achievement 2021–2025:



IUCN SSC Horseshoe Crab Specialist Group





CO-CHAIR
Mark L. Botton
Department of Natural Sciences, Fordham University, New York, New York, US

CO-CHAIR
Paul K.S. Shin
Department of Biology and Chemistry, City University of Hong Kong, Kowloon, Hong Kong, China

RED LIST AUTHORITY COORDINATOR
Billy K.Y. Kwan
College of Marine Sciences, Beibu Gulf University, Qinzhou, Guangxi, China

NUMBER OF MEMBERS
89

SOCIAL MEDIA AND WEBSITE
Facebook: Horseshoe Crabs Group, Asian Horseshoe Crab Group

Mission statement

The four extant species of horseshoe crabs are imperilled because of overfishing for use as food, bait, the production of biomedical products derived from their blood, and because of habitat loss or alteration due to shoreline development and armouring against coastal erosion. The group aims to protect horseshoe crabs in the world through collaborative effort in conservation of their populations and habitats, and in raising public awareness of their importance in evolutionary history, marine coastal ecology and biomedical uses.

Projected impact 2021–2025

Two species of horseshoe crabs in Southeast Asia, the Mangrove Horseshoe Crab (*Carcinoscorpius rotundicauda*) and Coastal Horseshoe Crab (*Tachypleus gigas*), are currently Data Deficient. Our group is currently working on updating their Red List status based on information being provided by our members residing in the range states of both species. The assessment of the Green Status of Species has been completed for the Vulnerable American Horseshoe Crab (*Limulus polyphemus*) and is being prepared for the Endangered Tri-spine Horseshoe Crab (*Tachypleus tridentatus*). Collectively, these activities should be completed during this quadrennium and lead to greater protection for all four species of horseshoe crabs.

Targets 2021–2025

ASSESS

T-003 Complete the Green Status of Species assessment for the Tri-spine Horseshoe Crab (*Tachypleus tridentatus*).

T-004 Complete the Red List assessment for the two species of Asian horseshoe crabs, the Mangrove Horseshoe Crab (*Carcinoscorpius rotundicauda*) and the Coastal Horseshoe Crab (*Tachypleus gigas*).

PLAN

T-005 Conduct regional conservation planning for the American Horseshoe Crab (*Limulus polyphemus*) to identify local and regional actions.

T-006 Develop a conservation plan for the Tri-spine Horseshoe Crab (*Tachypleus tridentatus*) through the Conservation Planning Specialist Group's (CPSG) species conservation process.

T-007 Plan worldwide outreach/education events concerning the conservation of horseshoe crabs and their coastal habitats for the annual International Horseshoe Crab Day on 20 June using social media.

ACT

T-008 Explore the feasibility of naming horseshoe crabs as a World Heritage Species through UNESCO.

NETWORK

T-001 Develop best practices for adult and juvenile horseshoe crab population assessments for capacity building among members of the Specialist Group.

T-002 Establish an Asian Horseshoe Crab Observation Network programme in partnership with government agencies, NGOs and/or conservation organisations.

T-009 Conduct two online training sessions/seminars on juvenile horseshoe crab survey protocols through the Asian Horseshoe Crab Working Group to support participants joining the Asian Horseshoe Crab Observation Network.

COMMUNICATE

T-010 Publish a book based on papers presented at the 3rd and 4th International Workshops on the Science and Conservation of Horseshoe Crabs in 2015 and 2019.

T-011 Publish an overview on the threats and conservation of horseshoe crabs for *Imperiled: The Encyclopedia of Conservation*.

T-012 Organise/coordinate at least three meetings or workshops on the science and conservation of horseshoe crabs for various stakeholders.



Survey for juvenile horseshoe crabs in China, as part of the Asian Horseshoe Crab Monitoring Network
Photo: Billy Kwan

Activities and results 2021

ASSESS

Red List

T-004 (KSR 6)

Number of species that have been assessed through the different tools: 0

Result description: Data and information were collected for the Red List assessment of the Mangrove Horseshoe Crab (*Carcinoscorpius rotundicaudata*) across its geographical range in Asia and the Red List assessment document is being prepared.

PLAN

Planning

T-007 (KSR 9)

Participation in outreach/education events on International Horseshoe Crab Day: 25

Result description: Beginning in 2020, each 20 June we celebrate International Horseshoe Crab Day with a range of events including talks and educational activities in the field. Because of COVID-19, the majority of the activities held in 2020 and 2021 were done online. Examples of some of these activities can be seen in a series of YouTube videos: https://www.youtube.com/playlist?list=PLdrZ71BTGCwwZpDoS-1nBNeiu6GM95eiUY.

In 2021, a total of 25 activities were undertaken worldwide in celebration of the Second International Horseshoe Crab Day, including 13 public awareness programmes, five workshops and conferences, four school talks and sharing sessions, two art design competitions, and one photograph exhibition. All these public participation activities were organised in Mainland China, Hong Kong and Taiwan regions, Japan, Malaysia, India, Bangladesh, USA and Mexico.

NETWORK

Capacity building

T-001 (KSR 2)

Documentation of standardised survey protocols: Achieved.

Result description: With the establishment of the Asian Horseshoe Crab Observation Network in 2021, a locally-adapted standard for collecting and reporting juvenile population data has been developed in China, together with on-site training and technical support. A total of 23 datasets of juvenile population surveys in China were collected. Such data will be used to further develop the assessment protocol for juvenile horseshoe crabs in Asia.

T-009 (KSR 2)

Number of training sessions/seminars offered: 4

Result description: Three on-site training sessions were conducted in the provinces of Fujian (May 2021), Hainan (June 2021) and Guangxi (July 2021) in mainland China, and one online workshop was organised in June 2021 for participants from Hong Kong.

Synergy

T-002 (KSR 2)

Collection of standardised Asian horseshoe crab population data across their geographical range: Ongoing.

Result description: The programme has started in China with plans to expand to other countries in Asia in the future. A description of the project was published in the 15 April 2021 issue of the *SSC Newsletter* (https://www.iucn.org/news/species-survival-commission/202104/a-program-implementing-effective-regional-conservation-actions-asian-horseshoe-crabs). Since the publication of this newsletter, a total of 18 universities, NGOs, research institutes and management agencies for Marine Protection Areas (MPAs) have joined the monitoring network, with 25 monitoring stations established along the Chinese coast.

COMMUNICATE

Communication

T-010 (KSR 12)

Number of publications: 1

Result description: The book, entitled *International Horseshoe Crab Conservation and Research Efforts: 2007- 2020. Conservation of Horseshoe Crabs Species Globally* and published by Springer Nature, will be available in printed form in early 2022 (https://link.springer.com/book/9783030823146).

T-011 (KSR 12)

Number of publications: 1

Result description: This publication summarises the major threats to all four species of horseshoe crabs and describes conservation strategies recommended by the Horseshoe Crab Specialist Group.

T-012 (KSR 12)

Number of meetings/workshops: 3

Result description: Three events have been organised to date: (1) International Symposium on Horseshoe Crab Conservation 2021 (virtual, held 20 June 2021; https://www.youtube.com/watch?v=Be_eeY-BUbuA&t=1179s; (2) Special Session, '50 Years of Horseshoe Crab Research Around the Globe' (virtual, held 4–5 November 2021), as part of the Coastal and Estuarine Research Federation Meetings; (3) 2021 International Conference of Asian Horseshoe Crab Science and Conservation (on-site in Xiamen, China and virtual, held 4–5 December 2021), with 160 participants from 12 countries/regions, and 32 oral and 21 poster presentations. Planning has begun for the 5th International Workshop on the Science and Conservation of Horseshoe Crabs, tentative date Summer 2024.

Acknowledgements

We would like to thank the assistance and participation of our Specialist Group members and other government agencies, NGOs and conservation organisations in hosting various activities to promote International Horseshoe Crab Day. Our appreciation is also extended to Dr Akbar John of International Islamic University Malaysia, Malaysia, and Dr Lizhi Cai of Xiamen University, China, for leading the organisation of the two international meetings on the science and conservation of horseshoe crabs.

Summary of achievements

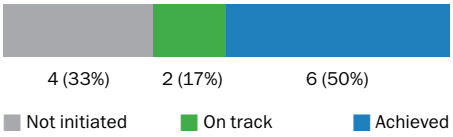
Total number of targets 2021–2025: 12

Geographic regions: 4 Global, 3 America, 7 Asia

Actions during 2021:

Assess:	1 (KSR 6)
Plan:	1 (KSR 9)
Network:	3 (KSR 2)
Communicate:	3 (KSR 12)

Overall achievement 2021–2025:



2021 Report

IUCN SSC Hoverfly Specialist Group





CO-CHAIR
Ante Vujić
Faculty of Sciences (FOS), University of Novi Sad, Serbia

CO-CHAIR
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School of Life Sciences, University Park, University of Nottingham, UK

RED LIST AUTHORITY COORDINATOR
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HAN University of Applied Sciences, Ruitenberglaan 31, Arnhem, The Netherlands

NUMBER OF MEMBERS
23

SOCIAL MEDIA AND WEBSITE
Facebook: @IUCNHoverfly
Instagram: iucnhoverflysg
Website: https://iucn-hsg.pmf.uns.ac.rs/

Mission statement

The Hoverfly Specialist Group aims to assess the threat of extinction to hoverflies through Red Listing, to generate and disseminate scientific knowledge, to engage in conservation actions for hoverflies and to build public awareness about their significance.

Projected impact 2021–2025

We expect the completion of both the Red Listing of all Europe's hoverflies in late 2022 and the Assessment-to-Plan document to have significant impact in the conservation of hoverflies, identifying critical sets of species on which Europe-wide conservation efforts can be targeted, and promoting the inclusion of hoverflies in pollinator conservation planning and education.

Targets 2021–2025

ASSESS

T-002 Assess a selection of 650 European hoverfly species.

T-004 Assess globally all species currently listed on existing national or regional Red Lists.

T-005 Identify new Key Biodiversity Areas (KBAs) according to IUCN standards.

PLAN

T-003 Develop guidelines for the conservation management of Syrphidae habitats.

T-007 Develop conservation strategies for threatened Syrphidae.

ACT

T-006 Stimulate research on the distribution of particular species and the threats affecting them.

NETWORK

T-008 Develop a network of institutions and individuals dealing with hoverflies.

COMMUNICATE

T-001 Promote awareness about hoverflies through specialised and general social media.

Activities and results 2021

ASSESS

Red List

T-002 (KSR 6)

Number of species that have been assessed through the different tools: 890

Result description: Assessment of all European hoverflies has been achieved; the European Red List of Hoverflies will be published in October 2022.

PLAN

Planning

T-003 (KSR 8)

Number of Assess to Plan (A2P) species assessments completed: achieved

Result description: Guidelines for the conservation management of Syrphidae habitats were developed.

COMMUNICATE

Communication

T-001 (KSR 13)

Number of digital communication outputs developed in relation to specific taxonomic groups: ongoing

Result description: The HSG promoted awareness about hoverflies through specialised and general social media.

Red List, example *Merodon luteomaculatus*
Photo: Jelena Ačanski





Instagram communication
Photo: Jelena Ačanski

Common Dronefly *(Eristalis tenax)*
Photo: Tamara Toth





Dasysyrphus tricinctus
Photo: Tamara Toth

Summary of achievements

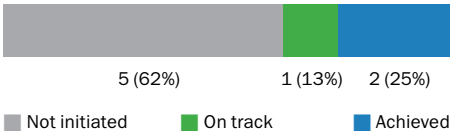
Total number of targets 2021–2025: 8

Geographic regions: 8 Europe

Actions during 2021:

Assess: 1 (KSR 6)
Plan: 1 (KSR 8)
Communicate: 1 (KSR 13)

Overall achievement 2021–2025:



IUCN SSC Mayfly, Stonefly and Caddisfly Specialist Group





CO-CHAIR
Craig Macadam
Buglife – The Invertebrate Conservation Trust, Stirling, UK

CO-CHAIR
Astrid Schmidt-Kloiber
BOKU – University of Natural Resources & Life Sciences, Vienna, Austria

RED LIST AUTHORITY COORDINATOR
Lyndall Pereira da Conceicoa
Natural History Museum, London, UK

NUMBER OF MEMBERS
18

SOCIAL MEDIA AND WEBSITE
Twitter: @IUCN_riverflies
Website: https://www.iucn.org/commissions/ssc-groups/invertebrates/mayfly-stonefly-and-caddisfly

Mission statement

The mission of our group is to promote the conservation of Mayfly, Stonefly and Caddisfly species and their habitats around the world. Our goal is to raise awareness of these small but important insect orders and undertake Red List assessments to inform practical conservation activities.

Projected impact 2021–2025

The conservation status of Mayfly, Stonefly and Caddisfly species and the threats to their populations will be better understood and initial plans for conservation action will be identified.

Targets 2021–2025

ASSESS

T-005 Conduct European comprehensive assessment of 1,600 Trichoptera species.

T-006 Digitise and collate details from ca. 90,000 Ephemeroptera, Plecoptera and Trichoptera specimens contained in museum collections, with a focus on Africa.

T-007 Collate other datasets on African Mayflies, Stoneflies and Caddisflies.

T-008 Prepare for South African comprehensive assessment of Ephemeroptera: Baetidae in 2025.

T-009 Prepare for South African comprehensive assessment of Trichoptera: Leptoceridae.

T-010 Collate data for sampled global assessment of 1,500 species of Ephemeroptera.

PLAN

T-011 Undertake training in conservation planning to allow development of conservation plans for species once they have been assessed.

NETWORK

T-001 Continue to grow membership on a geographical basis as we undertake regional assessments.

T-002 Host Ephemeroptera/Plecoptera Session at the 2021 Symposium for European Freshwater Sciences (SEFS21).

T-003 Deliver session at Trichoptera conference.

T-004 Deliver session at Ephemeroptera/Plecoptera symposium.

COMMUNICATE

T-012 Develop a series of outreach seminars to raise awareness of Mayfly, Stonefly and Caddisfly species and their conservation needs.

T-013 Develop our online presence (on social media and Specialist Group web pages).

T-014 Organise an awareness raising campaign in connection with World Rivers Day annually.



Adult of *Chimarra marginata*
Photo: Wolfram Graf/Astrid Schmidt-Kloiber



Adult of *Chaetopteryx rugulosa*
Photo: Wolfram Graf/Astrid Schmidt-Kloiber



Adult female of the Mount Donna Buang Wingless Stonefly (*Riekoperla darlingtoni*)
Photo: Eddie Tsyrlin

Activities and results 2021

ASSESS

Research activities

T-006 (KSR 5)

Number of specimens digitised: ongoing

Result description: Digitisation of collections at Natural History Museum, London; Museum für Naturkunde, Berlin; and Africa Museum, Brussels is nearing completion.

NETWORK

Membership

T-001 (KSR 2)

Number of SSC members recruited: 18

Result description: The Co-Chairs have re-engaged with experts to ensure their ongoing membership of the group. We will engage with other experts on a geographical basis when undertaking Red Listing activities.

Synergy

T-002 (KSR 1)

Number of 'in kind' partnerships established and maintained: 1

Result description: A session on Ephemeroptera and Plecoptera was held at SEFS21 in July 2021. Unfortunately, only three speakers offered talks, so these were combined with a session on 'Freshwater invertebrate biodiversity - threats, assessments, knowledge needs and conservation challenges'. Ultimately, this meant that the Ephemeroptera and Plecoptera papers were delivered to a much wider audience than expected.

COMMUNICATE

Communication

T-013 (KSR 13)

Number of digital communication outputs developed in relation to specific taxonomic groups: 2

Result description: Specialist Group web pages are now available on the IUCN website at: https://www.iucn.org/commissions/ssc-groups/invertebrates/mayfly-stonefly-and-caddisfly. Our Twitter account is active with 360 followers.

Acknowledgements

Thanks are due to BOKU, Buglife and Natural History Museum, London, for supporting the Co-Chairs and Red List Authority Coordinator. In addition, the Co-Chairs would like to thank the staff of the SSC for their ongoing assistance and encouragement.

Summary of achievements

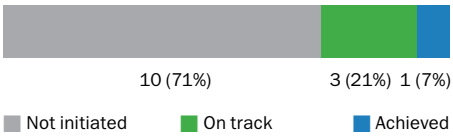
Total number of targets 2021–2025: 14

Geographic regions: 9 Global, 3 Africa, 2 Europe

Actions during 2021:

Assess: 1 (KSR 5)
Network: 2 (KSR 1, 2)
Communicate: 1 (KSR 13)

Overall achievement 2021–2025:



IUCN SSC Mid-Atlantic Islands Invertebrate Specialist Group





SOCIAL MEDIA AND WEBSITE
Website: https://www.maiisg.com

CO-CHAIR
Vicky Wilkins
Species Recovery Trust, UK

CO-CHAIR
Paulo A.V. Borges
cE3c – Centre for Ecology, Evolution and Environmental Changes/Azorean Biodiversity Group and University of the Azores, Azores, Portugal

RED LIST AUTHORITY COORDINATOR
Dinarte Teixeira
Conservação da Natureza e Bio(Geo) Diversidade, Instituto das Florestas e Conservação da Natureza, IP-RAM, Madeira, Portugal

NUMBER OF MEMBERS
55

Mission statement

To increase the evidence and action for invertebrate conservation on the islands of: Gough, Tristan, St Helena, Ascension, Cabo Verde, Canaries, Madeira, Azores, and São Tomé and Príncipe.

Projected impact 2021–2025

Increased awareness of the Mid-Atlantic Islands endemic invertebrate importance and threat status, plus progress on species recovery, through increased research and recording, new and updated Red List assessments, evidence-based planning exercises, and targeted and coordinated conservation action.

Targets 2021–2025

ASSESS

T-004 Assess 20 endemics for Ascension Island.

T-008 In Tristan and Gough, compile historic records of invertebrates and conduct conservation needs assessment.

T-011 Carry out ongoing monitoring of *Pieris cheiranthi* and other endemic butterflies in the Canary Islands.

T-013 Assess existing knowledge of invertebrates on Cabo Verde.

T-014 Reassess *Archachatina bicarinata*.

T-015 Reassess six Canary Islands land snails.

T-025 Reassess 111 endemic land mollusc species from Madeira archipelago.

T-028 Search for ghost endemic land mollusc species from Madeira Island.

T-032 Conduct citizen science project directed toward Endangered Madeiran land mollusc species.

T-037 On São Tomé and Príncipe, list the land snails *Aporachis dohrnii*, *Rhysotina hepatizon*, *Pseudoveronicella forcarti* and *Columna columna*.

PLAN

T-002 Update the St Helena Spiky Yellow Woodlouse (*Pseudolaureola atlantica*) Plan.

T-016 Complete conservation planning for seven threatened Canary land snails: *Xerotricha garachicoensis*, *Plutonia reticulata*, *Napaeus teobaldoi*, *Hemicycla mascaensis*, *Hemicycla plicaria*, *Atlantica engonata* and *Hemicycla modesta*.

T-019 Elaborate a species management and conservation plan directed toward Critically Endangered Desertas land mollusc species.

T-020 Update the St Helena Invertebrate Strategy.

T-022 Complete the St Helena invertebrate guide.

T-026 Carry out conservation planning for the Endangered land mollusc *Geomitra moniziana*.

T-031 Complete the Desertas land snails guide.

ACT

T-001 Initiate the Ascension project on endemic invertebrate conservation.

T-009 Establish a conservation project for the Madeiran threatened butterflies Madeiran Brimstone (*Gonepteryx maderensis*), Madeiran Speckled Wood (*Pararge xiphia*) and Madeiran Large White (*Pieris wollastoni*).

T-010 Establish a conservation project for *Pieris cheiranthi* on the Canary Islands.

T-012 Implement the plan for *Archachatina bicarinata* on São Tomé and Príncipe; increase understanding of ecology, population, genetics and threats; support



Pisaura acoreensis
Photo: Paulo A. V. Borges

legal mechanisms to address threats and ensure protection; and implement environmental awareness and public involvement strategies.

T-017 Rescue two Critically Endangered land mollusc species from Desertas from the wild to prevent their extinction.

T-018 Implement a captive breeding programme to prevent the extinction of the Desertas Critically Endangered land mollusc species.

T-021 Reduce the impact of invasive invertebrates on endemic invertebrates on St Helena.

T-024 Implement a captive breeding programme targeting the Endangered Madeiran land snail *Geomitra moniziana*.

T-027 Translocate two Critically Endangered land mollusc species to prevent their extinction.

T-034 Implement monitoring, a management plan and action for the Ironclad Beetle (*Tarphius floresensis*) on Flores Island (Azores) within project LIFE-Beetles.

T-035 Implement monitoring and a management plan for the Laurocho *(Pseudanchomenus aptinoides*) from Pico Island (Azores) within project LIFE-Beetles.

T-036 Implement monitoring and a management plan for *Trechus terrabravensis* from Terceira Island (Azores) within project LIFE-Beetles.

T-038 On São Tomé and Príncipe, carry out endemic invertebrate species conservation projects focused on beetles, butterflies, aquatic invertebrates and snails.

T-039 On the Canary Islands, implement conservation actions and raise awareness for *Pieris cheiranthi*.

T-040 On Santa Maria in the Azores, initiate an endemic land snail project (LIFE-Snails).

T-041 On the Canary Island, initiate planning and project actions on top priority endemic pollinator species.

network

T-023 Increase partnerships with potential funders.

T-029 Organise yearly Red List Training webinars.

communicate

T-030 Disseminate the group newsletter.

T-033 Organise a public awareness campaign addressing the Endangered Madeiran land mollusc species.

Activities and results 2021

ASSESS

Red List

T-004 (KSR 6)

Number of new global Red List assessments completed: 0

Result description: A project has been initiated to start collecting some data to facilitate this work in future years; no listing has started yet. We also aim to secure funding for the endemic genus of scaly cricket to facilitate their listing.

T-014 (KSR 6)

Number of global Red List reassessments completed: 1

Result description: The reassessment of *Archachatina bicarinata* is drafted and just needs reviewing.

T-015 (KSR 6)

Number of global Red List reassessments completed: 0

Result description: Field work to support the reassessment of and planning for six Canary Islands land snails is due in early 2022.

T-025 (KSR 6)

Number of global Red List reassessments completed: 0

Trigoniophthalmus borgesi
Photo: Javier Torrent- Azorean Biodiversity Group



Result description: Reassessment of endemic land molluscs species from Madeira archipelago started with EU funding and is being led by Dinarte with a number of other Mid-Atlantic Islands Invertebrate Specialist Group (MAIISG) members.

Research activities

T-011 (KSR 5)

Number of publications produced in internal journals of SSC groups: 2

Result description: Monitoring of *Pieris cheiranthi* and other endemic butterflies in the Canary Islands continues to be carried out by the ZERYNTHIA association; Yeray Monasterio León, its director, is a member of MAIISG. This is also supported by a new Canarian Pollinator Plan. Two publications: (1) Costa, R. & Borges, P.A.V. 2021. SLAM Project - Long term ecological study of the impacts of climate change in the natural forest of Azores: I - the spiders from native forests of Terceira and Pico Islands (2012-2019). *Biodiversity Data Journal* 9: e69924. DOI:10.3897/BDJ.9.e69924; (2) Borges, P.A.V., et al. 2022. SLAM Project - Long Term Ecological Study of the Impacts of Climate Change in the Natural Forest of Azores: II - A survey of exotic arthropods in disturbed forest habitats. *Biodiversity Data Journal* 10: e81410. HYPERLINK "https://doi.org/10.3897/BDJ.10.e81410"DOI:10.3897/BDJ.10.e81410

Synergy

T-028 (KSR 6)

Number of new range states engaged in determining species distribution range coverage: 0

Result description: Searching for ghost endemic land molluscs species from Madeira Island started on 1 October 2021. Since then, eight molluscs experts have conducted more than 20 direct surveys within coastal and forest habitats, having identified more than 100 species so far. However, no record has been made so far regarding the nine target species. The public awareness programme is already in place, with regular visits to schools. The species illustrations to be used in the give-away products are completed. The project website in under construction, as well as the citizen science side project.



Invasive invertebrate control fieldwork on St Helena to reduce impacts on endemic invertebrates
Photo: St Helena National Trust

PLAN

Planning

T-002 (KSR 8)

Number of policies where SSC members provided technical input: 1

Result description: The St Helena Spiky Yellow (*Pseudolaureola atlantica*) Plan has been updated; it needs to be made available online and a link will be added when ready.

T-016 (KSR 8)

Number of conservation plans/strategies developed: 0

Result description: The field work to enable conservation planning for seven threatened Canary Island snails is due to take place and funds for it are being secured.

T-019 (KSR 8)

Number of conservation plans/strategies developed: 0

Result description: Field work to support species management and a conservation plan for Critically Endangered Desertas land mollusc species has taken place, along with meetings to start a discussion on the process.

T-020 (KSR 8)

Number of conservation plans/strategies updated: 0

Result description: A workshop to update the St Helena Invertebrate Strategy took place and the draft plan is now being prepared for comments.

T-022 (KSR 8)

Number of technical documents to support the development of conservation plans/strategies: 1

Result description: The St Helena invertebrate guide is completed and available to purchase here: https://www.nhbs.com/terrestrial-freshwater-invertebrates-of-st-helena-book. Most importantly, free copies are on the island and being used to support research and conservation work.

ACT

Conservation actions

T-001 (KSR 10)

Number of actions addressing major drivers/emerging threats of species or population loss: 0

Result description: Funding is secured and an officer recruited for the Ascension project on endemic invertebrate conservation; surveys are currently being planned.

T-009 (KSR 10)

Number of species with increased or prevented decrease in population or range size, as a result of conservation actions: 0

Result description: European BEST Initiative funding is secured, and the project is being implemented by Martin Wiemers and Sérgio Teixeira.

T-010 (KSR 10)

Number of threatened species benefiting from *in situ* conservation action: 0

Result description: *Pieris cheiranthi* is now covered in the Canarian Pollinator Plan, which will help to drive and steer its conservation.

T-012 (KSR 10)

Number of actions addressing major drivers/emerging threats of species or population loss: 1

Result description: Implementation of the plan for *Archachatina bicarinata* on São Tomé and Príncipe is underway, with funding from Mossy Earth.

T-017 (KSR 10)

Number of conservation translocations conducted: 2

Result description: *Discula lyelliana* and *Geomitra grabhami* have both been successfully bred in UK zoos.

T-018 (KSR 10)

Number of actions addressing major drivers/emerging threats of species or population loss: 2

Result description: *Discula lyelliana* and *Geomitra grabhami* have both been successfully bred in UK zoos.

T-021 (KSR 10)

Number of actions addressing major drivers/emerging threats of species or population loss: 1

Result description: Trials of control of *Pheidola megacephala* are currently underway and trials of *Vespula vulgare* are planned.

T-027 (KSR 10)

Number of conservation translocations conducted: 2

Result description: Translocation was achieved for two species, *Discula lyelliana* and *Geomitra grabhami*, now with two *ex situ* populations in Chester and Bristol Zoo.

T-034 (KSR 10)

Number of actions addressing major drivers/emerging threats of species or population loss: 1

Result description: Monitoring, a management plan and action for the Ironclad Beetle *(Tarphius floresensis)* on Flores Island is being covered by the EU LIFE Beetles project.

T-035 (KSR 10)

Number of actions addressing major drivers/emerging threats of species or population loss: 1

Result description: Monitoring and a management plan for Laurocho (*Pseudanchomenus aptinoides*) from Pico Island is being covered by the EU LIFE Beetles project.

T-036 (KSR 10)

Number of actions addressing major drivers/emerging threats of species or population loss: 1

Result description: Field work has taken place to monitor *Trechus terrabravensis* and its habitat.

T-039 (KSR 10)

Number of threatened species benefiting from *in situ* conservation action: 0

Result description: The Canarian Pollinator Plan has made a start on conservation actions and awareness for *Pieris cheiranthi*.

T-040 (KSR 10)

Number of threatened species benefiting from *in situ* conservation action: 0

Result description: EU LIFE funding was secured to initiate an endemic land snail project on Santa Maria in the Azores; the project is getting started.

T-041 (KSR 10)

Number of threatened species benefiting from *in situ* conservation action: 0

Result description: The Canarian Pollinator Plan has started actions on top priority endemic pollinator species, but it is limited to pollinators.

NETWORK

Synergy

T-023 (KSR 1)

Number of 'funding' partners established and maintained: 1

Result description: The relationship built with Mossy Earth has resulted in funding for Obo snail conservation on São Tomé and Príncipe.

COMMUNICATE

Communication

T-030 (KSR 12)

Number of newsletters produced: 3

Result description: Three newsletters were circulated to the membership in April, September and December 2021.

Acknowledgements

The Mid-Atlantic Islands Invertebrate Specialist Group would like to thank all its members and partners for their hard work and endless enthusiasm in 2021 and look forward to future work in 2022.

Summary of achievements

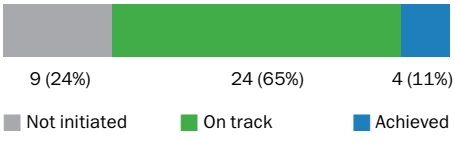
Total number of targets 2021–2025: 37

Geographic regions: 12 Africa, 26 Europe

Actions during 2021:

Assess:	6 (KSR 5, 6)
Plan:	5 (KSR 8, 9)
Act:	14 (KSR 10)
Network:	1 (KSR 1)
Communicate:	1 (KSR 12)

Overall achievement 2021–2025:



IUCN SSC Mite Specialist Group



CHAIR
Sebahat Ozman-Sullivan
Faculty of Agriculture, Ondokuz Mayis University, Turkey

RED LIST AUTHORITY COORDINATOR
Agnieszka Napierala
Adam Mickiewicz University, Poland

NUMBER OF MEMBERS
72

Mission statement

The mission of the Mite Specialist Group (MSG) is to increase knowledge of the taxonomic, ecological and conservation status of mites and to promote their conservation and protect their habitats globally.

Projected impact 2021–2025

Increased profile and action in mite conservation in association with all invertebrates.

Targets 2021–2025

ASSESS

T-001 Conduct global Red List assessment of 10 species.

NETWORK

T-002 Have two Red List assessment coordinators.

T-003 Grow membership to 100 members.

T-004 Maintain regular contact with the Wet Tropics Management Authority.

T-005 Establish a partnership with Saving Nature to restore habitat in a tropical environment.

T-006 Educate the public about the importance of invertebrate communities.

T-007 Contact five new organisations outside the SSC to seek their cooperation in pursuing specific conservation and/or educational outcomes.

T-008 Request that the five advisory groups develop and implement at least one programme that generates specific education and/or conservation outcomes.

T-009 Gain a second conservation organisation as an advisory group and project partner.

COMMUNICATE

T-010 Deliver ten presentations on Mite Specialist Group activities.

T-011 Establish social media accounts.

T-012 Produce four publications on threatened species of mites.

T-013 Continue to provide advice to MarineBio.

Activities and results 2021

ASSESS

Red List

T-001 (KSR 6)

Number of new global Red List assessments completed: 0

Result description: We compiled a list of 100 threatened host-specific species, including ticks, and then selected five species for Red List assessment.

NETWORK

Capacity building

T-002 (KSR 2)

Number of people trained in assessment tools: 1

Result description: One person was trained as a Red List assessment coordinator.

Membership

T-003 (KSR 1)

Number of SSC members recruited: 65

Result description: We recruited 65 members in 37 countries on all continents.

Synergy

T-004 (KSR 1)

Number of in kind partnerships established and maintained: 1

Result description: We contacted the Wet Tropics Management Authority (WTMA) (https://www.wettropics.gov.au/) in Australia about working with them to promote and protect mite and other invertebrate diversity and act in an advisory capacity.

T-005 (KSR 1)

Number of in kind partnerships established and maintained: 1

Result description: We contacted the Chair of the conservation charity Saving Nature (https://savingnature.com/our-board-of-directors/) who agreed to be a member of the group.

T-006 (KSR 2)

Member institutional affiliation distribution: 1









Mites from wild, edible mushrooms, Kastamonu Province, Turkey
Photos: Onur Ozyurek



Nature School for Children, Samsun, Turkey
Photo: Merve Kaya

Result description: We gained a high profile television nature programme presenter in Turkey as a group member.

T-007 (KSR 2)

Member expertise distribution: 1

Result description: We appointed a Conservation Initiatives Coordinator.

T-008 (KSR 1)

Number of in kind partnerships established and maintained: 5

Result description: We gained five acarology societies as advisory groups.

T-009 (KSR 3)

Non-IUCN bodies with which the SSC group collaborates to advance targets: 1

Result description: We gained one conservation organisation as an advisory group (and vice versa).

COMMUNICATE

Communication

T-010 (KSR 13)

Number of SSC members' presentations developed in relation to specific taxonomic groups: 1

Result description: A nature school programme was delivered in Samsun, Turkey, with a mite education component.

T-011 (KSR 13)

Number of digital communication outputs developed in relation to specific taxonomic groups: 1

Result description: We compiled the information for the MSG landing page on the SSC website (**https://iucn.org/our-union/commissions/group/iucn-ssc-mite-specialist-group**).

T-012 (KSR 12)

Number of Species e-bulletin, Save Our Species newsletter, SSC Groups' newsletter editions produced: 1

Result description: One paper was published on the establishment of the MSG and mentioning the SSC: Ozman-Sullivan, S.K. and Sullivan, G.T. 2021. The newly formed Mite Specialist Group of the IUCN's Species Survival Commission and the conservation of global mite diversity. *Acarological Studies* 3(2):51–55. **https://doi.org/10.47121/acarolstud.973015.**

T-013 (KSR 13)

Number of digital communication outputs developed in relation to specific taxonomic groups: 1

Result description: We provided advice to the MarineBio Conservation Society on marine mites and contribution to the website.

Acknowledgements

The MSG would like to thank MarineBio Conservation Society (https://www.marinebio.org/); Anna Walker from the New Mexico BioPark Society (https://www.bioparksociety.org/main/); Sergio Henriques of the Global Center for Species Survival, Indianapolis Zoo; and Axel Hochkirch of the IUCN SSC Invertebrate Conservation Committee.

Summary of achievements

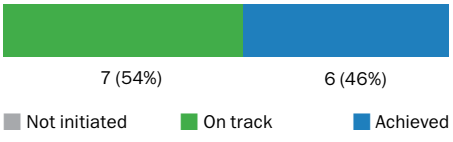
Total number of targets 2021–2025: 13

Geographic regions: 4 Global, 1 America, 6 Asia, 2 Europe

Actions during 2021:

Assess: 1 (KSR 6)
Network: 8 (KSR 1, 2, 3)
Communicate: 4 (KSR 12, 13)

Overall achievement 2021–2025:



2021 Report

IUCN SSC Mollusc Specialist Group



SOCIAL MEDIA AND WEBSITE
Twitter: @SSC_Mollusc_sg

CHAIR
Mary Seddon
UK

RED LIST AUTHORITY COORDINATORS
Monika Bohm (SRLI Freshwater Mollusc)
Global Center for Species Survival, Indianapolis Zoo, Indianapolis, US

Manuel Lopes-Lima (Freshwater Bivalve)
Interdisciplinary Centre of Marine and Environmental Research (CIIMAR), University of Porto, Portugal

Eike Neubert (European Landsnails)
Natural History Museum of Bern, Bern, Switzerland

Howard Peters (Global Abalone)
The University of York, York, UK

Julia Sigwart and Elin Thomas (Hydrothermal Vent)
Queen's University Belfast, UK

Frank Kohler (Australian Landsnails)
Australian Museum, New South Wales, Australia

Zoltán Fehér (European Molluscs)
Hungarian Natural History Museum, Budapest, Hungary

Maxim Vinaski (Freshwater Gastropods)
Saint Petersburg State University, Saint Petersburg, Russia

NUMBER OF MEMBERS
99

Mission statement

To provide information to IUCN on mollusc biodiversity conservation, the inherent value of species, their role in ecosystem health and functioning, the provision of ecosystem services, and their support to human livelihoods.

Projected impact 2021–2025

Not stated.

Targets 2021–2025

ASSESS

T-001 Conduct Red List assessment of assorted groups of land snails.

T-002 Conduct regional reassessments of Red List of European land snails.

T-003 Conduct regional reassessments of Red List of European freshwater molluscs.

T-005 Complete reassessment of the freshwater mollusc Sampled Red List Index (SRLI).

T-006 Complete global Cephalopod and Abalone assessments.

T-007 Reassess *Conus* for the Red List.

T-008 Produce summary reports of global assessment processes (e.g. abalone, cephalopods, hydrothermal vents).

T-009 Improve Red Listing for marine molluscs: publish hydrothermal vent assessment method.

T-012 Support the Key Biodiversity Area (KBA) identification process in Canada.

T-015 Engage in the development of novel methods for mollusc monitoring.

T-016 Study and conduct long-term monitoring of freshwater bivalves in Morocco.

T-017 Carry out surveys for threatened species to support species conservation planning.

T-020 Assess Range Restricted Spring Snail species in Morocco.

ACT

T-013 Reintroduce *Partula* in French Polynesia.

T-014 Reintroduce Bermuda landsnails.

NETWORK

T-019 Continue active engagement in relevant SSC Conservation Committees (Invertebrate, Marine and Freshwater).

COMMUNICATE

T-010 Publish the annual Mollusc Specialist Group newsletter, *Tentacle*.

T-011 Present regularly on Specialist Group work at relevant conferences on mollusc conservation.

T-018 Support Freshwater Conservation Committee communications highlighting freshwater species at risk and threats to freshwater systems.



Hanleyella henrici, assessed in 2020 for the Vent Red List published in 2021
Photo: Julia Sigwart & CHong Chen

Activities and results 2021

ASSESS

Red List

T-002 (KSR 6)

Number of national Red List reassessments published: 0

Result description: The main work to date involves adding newly described species of European land snails from 2009 to 2021 in the IUCN Species Information Service (SIS) ready for the planned start to reassessments in 2022 and updating the higher taxonomy and current taxonomy to reflect changes since 2009.

T-003 (KSR 6)

Number of national Red List reassessments published: 0

Result description: The main work to date involves adding newly described species of European freshwater molluscs from 2009 to 2021 in SIS ready for the planned start to reassessments in 2022 and updating the higher taxonomy and current taxonomy to reflect changes since 2009.

Research activities

T-008 (KSR 5)

Number of scientific publications about species research that acknowledge SSC affiliation: 1

Result description: The results of the Vent Red List project were published in December: Thomas, E.A., et al. (2021). 'A Global Red List for Hydrothermal Vent Molluscs'. *Frontiers in Marine Science* 8:713022. https://doi.org/10.3389/fmars.2021.713022. This showed that of the 184 species assessed, 62% are listed as threatened (39 as Critically Endangered, 32 Endangered, 43 Vulnerable). In contrast, the 25 species that are fully protected from deep-sea mining by local conservation measures are assessed as Least Concern, and a further 45 species are listed as Near Threatened.

T-009 (KSR 5)

Number of scientific publications about species research that acknowledge SSC affiliation: 1

Result description: We published the method for assessing hydrothermal vent molluscs (how to assess threat, define location, etc.), led by researchers at Queen's University Belfast and Senckenberg, in *Conservation Biology* in October: Thomas, E.A., et al. (2022). 'Assessing the extinction risk of insular, understudied marine species'. *Conservation Biology* 36:e13854. https://doi.org/10.1111/cobi.13854.

NETWORK

Synergy

T-019 (KSR 3)

Number of people trained in conservation planning: ongoing

Result description: The Mollusc Specialist Group has representation on both the Invertebrate Conservation Committee and Freshwater Conservation Committee. In 2021, the group particularly engaged with the Freshwater Conservation Committee on their report to highlight fifty threatened freshwater species (to be released in 2022), by contributing species nominations for inclusion as well as engaging imagery and species information.

COMMUNICATE

Communication

T-010 (KSR 12)

Number of Species e-bulletin, Save Our Species newsletter, SSC Groups' newsletter editions produced: 1

Result description: The 2021 edition of *Tentacle* (issue 29) was published in March 2021, leading with a tribute to the late Dr Trevor Coote.

T-018 (KSR 12)

Contribute to and disseminate communications from Freshwater Conservation Committee's Species at risk report (in partnership with Shoal) within and outside SSC: ongoing

Result description: In October/November 2021, the Mollusc Specialist Group membership contributed more than 20 species nominations to the mix of species considered for the report. The group is now working with the Freshwater Conservation Committee and Shoal on species profiles for the five selected species that will be featured in the report.

Summary of achievements

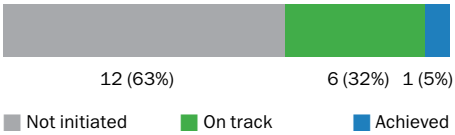
Total number of targets 2021–2025: 19

Geographic regions: 13 Global, 2 Africa, 2 America, 2 Europe

Actions during 2021:

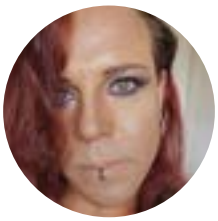
Assess: 4 (KSR 5, 6)
Network: 1 (KSR 3)
Communicate: 2 (KSR 12)

Overall achievement 2021–2025:



IUCN SSC Spider and Scorpion Specialist Group





SOCIAL MEDIA AND WEBSITE
Facebook: @IUCNSpiders
Instagram: @iucnspidersg
Twitter: @IUCNSpiderSG
Website: https://www.iucn.org/commissions/ssc-groups/invertebrates/spider-and-scorpion

CO-CHAIR
Sergio Henriques
Global Center for Species Survival, Indianapolis Zoo, Indianapolis, US

CO-CHAIR
Melissa Bushell
Bristol Zoo, UK

RED LIST AUTHORITY COORDINATOR
Sergio Henriques
Global Center for Species Survival, Indianapolis Zoo, Indianapolis, US

NUMBER OF MEMBERS:
36

Mission statement

The main objectives of the Spider and Scorpion Specialist Group (SSSG) are to assess the extinction risk of a representative sample of arachnid species globally; assist on international law and agreements (e.g. Habitats Directive, Convention on International Trade in Endangered Species – CITES); contribute towards national and regional legislation protecting threatened species; develop scientifically sound species conservation strategies in cooperation with relevant authorities; and promote the public knowledge of arachnids.

Projected impact 2021–2025

Improving the status of threatened arachnids by implementing conservation action based upon sound knowledge, Red List assessments and conservation planning.

Targets 2021–2025

ASSESS

T-001 Assess the extinction risk of *Hypochilus bernardino* and monitor the impact of wildfires on its habitat suitability.

T-008 Publish a new assessment of the conservation status of New Zealand Spiders.

T-012 Assess arachnid species impacted by trade in Asia.

T-013 Assess arachnid species impacted by trade in South America.

T-016 Understand how/what/when scorpions impact park rangers in Malawi and adjacent countries.

T-017 Assess the extinction risk of the Batu Caves Trap-door Spider (*Liphistius batuensis*).

T-018 Assess the extinction risk of Malay trap-door spiders (Liphistiidae).

T-019 Assess the extinction risk of segmented trap-door spiders (Liphistiidae) outside of Malaysia.

T-020 Assess the extinction risk of monogeneric families of spiders.

ACT

T-009 Measure the impacts of habitat restoration of a Nature Reserve, by replacing exotic for native vegetation.

T-014 Implement captive rearing of the Deserta Grande Wolf Spider (*Hogna ingens*).

NETWORK

T-007 Participate in an umbrella meeting of regional or habitat-specific Specialist Groups.

T-010 Develop strategic partnerships with cross taxa Specialist Groups.

T-015 Engage with the Cactus and Succulent Plants Specialist Group to communicate with Mexican Nopal farmers on the importance of spiders as pest control for their crop.

T-022 Engage with local stakeholders on the remaining habitat of *Nemesia berlandi* and the best approaches to protect it.

T-023 Support funding application for young SSSG member in the global south.

COMMUNICATE

T-003 Engage with local stake holders on the remaining habitat of *Hypochilus bernardino* and the best approaches to protect it.

T-004 Engage local school children at sites of particular conservation interest.

T-006 Promote spider conservation action on national television.

T-021 Find a 'lost species' of Portuguese trap-door spider.

Activities and results 2021

ASSESS

Red List

T-017 (KSR 6)

Number of global Red List reassessments completed: 0

Result description: Funding was secured to assess the extinction risk of the Batu Caves Trap-door Spider, data was collated, and a conservation profile draft was initiated.



Habitus of *Haplocosmia nepalensis* in its natural habitat
Photo: Kiran Thapa Magar



Interviews about human wildlife interactions with local inhabitants
Photo: Kiran Thapa Magar

T-018 (KSR 6)

Number of new global Red List assessments completed: 0

Result description: Funding was secured to assess the extinction risk of Malay trap-door spiders (Liphistiidae), data was collated, and a conservation profile draft was initiated.

T-019 (KSR 6)

Number of new global Red List assessments completed: 0

Result description: Funding was secured to assess the extinction risk of segmented trap-door spiders (Liphistiidae) outside of Malaysia, data was collated, and a conservation profile draft was initiated.

Research activities

T-008 (KSR 5)

Number of research projects completed or supported by SSC members per taxonomic group and region: 1

Result description: A new assessment of the conservation status of New Zealand Spiders was completed, published and is now freely available online at: https://www.doc.govt.nz/globalassets/documents/science-and-technical/nztcs34entire.pdf.

T-013 (KSR 5)

Number of research projects completed or supported by SSC members per taxonomic group and region: 0

Result description: Several meetings were held and data analysis was initiated. No research project was completed, but membership was increased, with two new members from underrepresented regions, with underrepresented skills.

ACT

Conservation actions

T-009 (KSR 10)

Number of species with increased or prevented decrease in population or range size, as a result of conservation actions: 0

Result description: Still on track.

T-014 (KSR 10)

Number of species with increased or prevented decrease in population or range size, as a result of conservation actions: 0

Result description: Progress was made regarding captive rearing of the Deserta Grande Wolf Spider; discussions continue about when it might be best for the translocation to take place.

NETWORK

Proposal development and funding

T-023 (KSR 1)

Number of grants and awards received by SSSG: 5

Result description: Two grant applications for the Mohamed bin Zayed Species Conservation Fund were supported. We also supported applications to a re:wild Lost Species Grant and an SSC EDGE Grant, as well as a recommendation letter for a Tony Whitten Conservation Award 2021. All were successful.

Synergy

T-022 (KSR 3)

Successful engagement with all or most landowners in the area: ongoing

Result description: We engaged with several landowners in informal settings; they were very supportive and we received 100% positive responses towards our goals, but much is yet to be done.

COMMUNICATE

Communication

T-021 (KSR 13)

Number of digital communication outputs developed in relation to specific taxonomic groups: 2

Result description: A YouTube video on finding a 'lost species' of Portuguese trap-door spider was produced and there was widespread communication on Twitter.

Acknowledgements

We would like to acknowledge the Mohamed bin Zayed Species Conservation Fund for supporting the work of two of our members in Nepal and in Malaysia. We are also grateful to the Shuttleworth Foundation for awarding a flash grant for the study of tarantula tracking, and we would like to thank re:wild for including a spider species in their Lost Species programme and supporting several members of our Specialist Group to find it. Finally, we would like to thank the SSC for all their support of our group's work, for an Internal SSC grant to detect the impact of California's wildfires on endemic spiders, and via the EDGE SSC Grant for supporting conservation assessments of a remarkable basal group of Asian spiders.

Summary of achievements

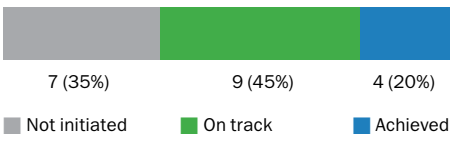
Total number of targets 2021–2025: 20

Geographic regions: 5 Global, 1 Africa, 6 America, 5 Asia, 4 Europe, 1 Oceania

Actions during 2021:

Assess:	5 (KSR 5, 6)
Act:	2 (KSR 10)
Network:	2 (KSR 1, 3)
Communicate:	1 (KSR 13)

Overall achievement 2021–2025:



IUCN SSC African Elephant Specialist Group





CO-CHAIR
Benson Okita-Ouma
Wyss Academy for Nature, Nanyuki & Nairobi, Kenya

CO-CHAIR
Rob Slotow
University of KwaZulu-Natal, KwaZulu-Natal, South Africa

RED LIST AUTHORITY COORDINATOR
Kathleen Gobush
Vulcan Inc./University of Washington, US

NUMBER OF MEMBERS
95

SOCIAL MEDIA AND WEBSITE
Twitter: @IUCN_AfESG

Mission statement

The mission of the African Elephant Specialist Group (AfESG) is to promote the long-term conservation of Africa's elephants throughout their range.

Projected impact 2021–2025

To promote the long-term conservation of African elephants throughout their range.

Targets 2021–2025

ASSESS

T-001 Compile, review and synthesise information on African elephant numbers and distribution across all range states, with a special emphasis on forest populations, within the African Elephant Database.

T-002 Participate in the Monitoring the Illegal Killing of Elephants (MIKE)-Elephant Trade Information System (ETIS)-Technical Advisory Group (TAG) processes.

T-003 Publish the Red List assessments for African Forest Elephant (*Loxodonta cyclotis*) and African Savanna Elephant (*Loxodonta africana*) in 2021

T-004 Conduct Green Status assessments for both elephant species in priority regions.

T-005 Update AfESG's position statement on the removal of African elephants from the wild for captive use out of their natural range.

T-006 Revise the *IUCN/SSC AfESG Guidelines for the in situ Translocation of the African Elephant for Conservation Purposes* in line with the broader IUCN conservation translocation guidelines.

T-007 Develop guidelines/criteria for prioritising sites for survey support.

T-008 Continue to determine the genetic identity of taxonomically undefined elephant populations.

T-009 Fulfil the AfESG's obligations to CITES.

T-032 Update guidelines on population survey methods by incorporating newly emerging techniques for savanna and forest elephants.

T-036 Provide a better understanding of the context and conceptualisation of sustainable use of African elephants through the consumptive and the non-consumptive uses continuum.

PLAN

T-012 Enhance the functionality and capacity of the African Elephant Database and form a consortium for its technical and financial support.

T-013 Re-invigorate the African Elephant Library, build the capacity to curate historical survey information and investigate gaps.

T-015 Continue with the provision of technical input into the revision of the African Elephant Action Plan when called upon by the range states.

T-016 Support strategic and action planning processes at national, regional and continental levels, including assisting with the production of National Elephant Action Plans.

T-017 Develop updated AfESG guidelines on human-elephant co-existence (HEC), innovative new approaches based on landscape-level spatial planning, known elephant behaviours and community-based conservation approaches.

ACT

T-025 Release a statement on the AfESG's position on the two species issue.

T-030 Provide technical guidance for management of elephants as requested.

T-031 Advise on the conservation and management of elephant range and critical habitats.

NETWORK

T-026 Promote and, where appropriate, establish collaborations with relevant IUCN SSC Specialist Groups.

T-027 Establish relevant working groups to engage with key issues that have been identified.

T-028 Respond to emerging issues and changing priorities.

Aerial view of Langoué Bai, Ivindo National Park. African Forest Elephants frequently visit this site making it particularly vulnerable to poaching
Photo: WCS Gabon





Observers keeping track of all animals visiting Langoué Bai and looking for unique characteristics used to identify individual elephants
Photo: WCS Gabon



Rare sighting of African Forest Elephants mating (Langoué Bai, Gabon)
Photo: WCS Gabon

T-029 Hold AfESG members meeting sessions in 2022 and in 2024/2025 and, where appropriate or necessary, also hold brief inter-session online meetings.

T-033 Fundraise for the running of the AfESG secretariat and for AfESG activities.

T-034 Develop a community of practitioners through the HEC Working Group, exchanging information on best practice and successes and failures of appropriate tools in different contexts in Africa and in Asia.

T-035 Create a community of young innovative local people to participate in elephant management and conservation issues.

COMMUNICATE

T-021 Enhance communication within and outside of the AfESG membership on key issues about African elephants, through the establishment of a task force on communication.

T-022 Publish in 2023/2024 an update of the 2016 African Elephant Status Report (AESR) and publish a numbers and range only AESR in 2024.

T-023 Promote the creation and maintenance of linkages/connectivity between elephant habitats.

T-024 Promote the *Pachyderm* biannual international peer-reviewed journal on elephants and rhinos.

Activities and results 2021

ASSESS

Red List

T-003 (KSR 6)

Number of global Red List reassessments completed: 2

Result description: The Red List assessments for African Forest and African Savanna Elephants were published in 2021.

Research activities

T-001 (KSR 5)

Number of scientific publications about species research that acknowledge SSC affiliation: 1

Result description: Collection of data on population, input zones and range is ongoing for West and Central Africa, which comprises the largest Forest Elephant distribution in Africa. A review and update is underway on programmes to generate tables and maps that will separate the two species for use in the two publications; these are being tested and verified by the special task force for the report and the Data Review Working Group. The production of maps and tables is due by mid-April 2022.

T-002 (KSR 5)

Number of scientific publications about species research that acknowledge SSC affiliation: 1

Result description: AfESG Co-Chair Ben Okita participated in the 17th meeting of the Technical Advisory Group (TAG), held virtually on 28–29 June 2021, which was convened by CITES MIKE at the UNEP

offices in Nairobi. Participants were drawn from TAG sub-regional representatives, TAG Global members and Co-Opted members of IUCN AfESG and IUCN Asian Elephant Specialist Group (AsESG), TRAFFIC – ETIS, CITES Secretariat – Science Unit, MIKE Central Coordination Unit (CCU), and Sub-regional support Unit representatives – Asia. The AfESG Co-Chair provided an update on the activities implemented by the IUCN SSC African Elephant Specialist Group. This included activities related to estimating African elephant population size and the integration of the African Elephant Database and MIKE trend analysis, by providing names of experts who could compile current methodologies used by range states to estimate population sizes in forested areas and to determine whether the current MIKE dung survey standards (https://cites.org/sites/default/files/common/prog/mike/survey/dung_standards.pdf) required an update, and to help document alternative elephant survey techniques in gallery forests/canopy forests. We also provided the names of experts who could advise on the integration of the African Elephant Database (AED) and MIKE (Proportion of Illegally Killed Elephants (PIKE) trend analysis), including estimates to be used, means to address uncertainties in estimates and interpolation between estimates. Importantly, AfESG contributed information on the population status of the African elephants to CITES Standing Committee 74 as required of the Specialist Group as per CITES Res. Conf. 10.10 (Rev. CoP18) in operative paragraph 12(b). The report can be found in paragraphs 66 to 87 in the following link: https://cites.org/sites/default/files/eng/com/sc/74/E-SC74-68.pdf. Rob Slotow will replace Ben Okita in representing the AfESG in subsequent meetings for three years as provided for in TAG's modus operandi where Co-chairs rotate every three years as co-opted TAG members.

T-005 (KSR 5)

Number of publications produced in internal journals of SSC groups: Ongoing.

Result description: Dialogue between AfESG, SSC and Zoo Associations took place through a Zoom meeting held on 27 September 2021. Contact with the AfESG Co-Chairs was initiated by Zoo Associations at the 18th meeting of the Conference of the Parties to CITES (CITES CoP18). The Zoom meeting was chaired by the SSC leadership, with the intention to start a conversation to identify possible joint activities. The SSC hopes that this engagement will build trust between African Elephant conservationists (AfESG) and the zoo industry (Association of Zoos & Aquariums (AZA), European Association of Zoos and Aquaria (EAZA), World Association of Zoos and Aquariums (WAZA)). The AfESG emphasises the importance of promoting and enhancing the long-term conservation of *in situ* populations of elephants throughout their range, as captured within the African Elephant Action Plan. The AfESG *in situ* to *ex situ* Task Force has met several times to discuss the issues related to *ex situ* translocation of the African Elephant. In the meeting held on 27 September 2021, it was put forward that the AfESG should initiate a process to review all evidence regarding any potential contributions of *ex situ* facilities to *in situ* conservation. The Task Force recommended developing the evidence base for *in situ* to *ex situ* in order to improve its capacity for responding to requests for movement into *ex situ*, in terms of whether a proposed destination is appropriate and acceptable, and if there are exceptional circumstances (based on *in situ* conservation, and the evidence base), and building a robust process of reviewing the existing Position Statements. The AfESG was not consulted by the CITES secretariat or National Scientific Authorities on any proposed movements *in situ ex situ* during 2021.

T-006 (KSR 5)

Number of publications produced in internal journals of SSC groups: Ongoing.

Result description: The AfESG *in situ* to *ex situ* Task Force has agreed to undertake a review of the IUCN/SSC AfESG Guidelines for the *in situ* Translocation of the African Elephant for Conservation Purposes once the Status Reports have been published, as that is currently a key task of the AfESG. Funding has been received to support a consultant in this regard.

T-007 (KSR 5)

Number of publications produced in internal journals of SSC groups: Ongoing.

Result description: The AfESG Data Review Working Group is identifying populations/input zones that have not been surveyed since the previous status report, and, once the status reports are complete, will bring to the attention of range states key populations that should be prioritised for surveys.

T-008 (KSR 6)

Number of species that have been assessed through the different tools: 0

Result description: AfESG supports molecular species assessment of African elephant populations in West Africa. Given the recent formal recognition of two African elephant species by the IUCN AfESG and the differing extinction risk of each according to their most recent Red List assessments, several range states have expressed a need to understand and confirm the composition of elephant populations in their countries at a site level. Priorities and guidelines to undertake these studies are given in Kim and Wasser 2019. Initial candidate sites for sampling will include those with a minimum number of elephants found within the borders of the thirteen West African MoU Signatory Parties, and engagement with these range states is being facilitated through the CMS Secretariat. In order to advance the appropriate conservation and management of elephants in the region, AfESG submitted two priority projects for consideration that can be initiated with limited funding, and which will make a strong and immediate contribution to elephant conservation within these range states. These projects are also suitable to leverage additional funds: (1) proof of concept for implementation of molecular assessment of the species identity of African Elephants in select sites in West Africa, and (2) preliminary assessment of the primary elephant corridors in West Africa to identify priority areas for conservation intervention projects that will have high feasibility of success and return on investment. A number of recent discussions, engagements and publications inform this submission, including the IUCN African Elephant Specialist Group (AfESG) engagement with the Convention on Migratory Species (CMS); signatory countries to the MoU of the West African elephant range states (meeting held in November–December 2021; UNEP/CMS/WAE/MOS3/Doc.5); internal discussions with the various AfESG Task Forces; and a past assessment of status information on West African transboundary elephant projects. These projects are also prioritised given the recent decision by the AfESG to treat African Forest (*Loxodonta cyclotis*) and Savanna Elephants (*Loxodonta africana*) as separate species; the recently published IUCN Red List assessment of both elephants; and a recognition that species identity and corridors have not yet been definitively established in some sites in West Africa. The proposed projects both address the key objectives of the African Elephant Action Plan (AEAP). They each seek to: (1) strengthen range states' knowledge on African elephant management, and (2) maintain elephant habitats and restore connectivity, by providing fundamental



Translocation operation when Save The Elephants were asked by KWS to fit a collar on a 'problem' bull elephant that was being moved from Tsavo West to Tsavo East. In the photo, Lydia Tiller, member of the AfESG, is taking biometrics of the elephant
Photo: Lydia Tiller

knowledge about the identity and movement patterns of elephant populations in the region that is currently not available. This knowledge, in turn, is essential to inform conservation and management decisions concerning the future of these animals in West Africa.

T-032 (KSR 5)

Number of publications produced in internal journals of SSC groups: Ongoing.

Result description: The AfESG Data Review Working Group is incorporating new methods in its next generation of reports. There is a need for AfESG to support range countries' training in the collection of data using new techniques such as DNA sampling and further improve the collection of elephant population data consistently. Discussion within the Taxonomic Task Force and Data Review Working Group is ongoing on how to support range countries and partners to collect such information. This will entail writing joint proposals for both data collection and training in the analysis.

T-036 (KSR 5)

Number of publications produced in internal journals of SSC groups: Ongoing.

Result description: AfESG identified a person to lead this Task Force and is discussing the concept note of what it will entail to meet this target. This concept will be taken to the AfESG in 2022 for implementation. Funding was raised in 2021 to support this task through 2024.

Synergy

T-009 (KSR 5)

Number of global Red List reassessments completed: 1

Result description: Despite the overall declining trend of both African elephant species, the assessments also highlighted the impact of successful conservation efforts. Anti-poaching measures on the ground, together with more supportive legislation and land use planning, which seek to foster human-wildlife coexistence, were identified as critical to successful elephant conservation. As a result, some Forest Elephants have stabilised in well-managed conservation areas in Gabon and the Democratic Republic of the Congo. Savanna Elephant numbers have also been stable or growing for decades, especially in the Kavango-Zambezi Transfrontier Conservation Area, which harbours the largest number of this species on the continent. Status of elephant populations, levels of illegal killing and trade in ivory were submitted to the MIKE CCU in November 2021 for compilation into a joint report with the MIKE and ETIS reports for CITES Standing Committee 74. Among the important decisions is to treat African Forest (*Loxodonta africana cyclotis*) and Savanna Elephants (*Loxodonta africana africana*) as separate species, the result of the consensus that had emerged among experts and following new research into the genetics of elephant populations. Accumulating genetic, ecological and demographic evidence indicates a separation between these two subspecies. The AfESG, through its *in situ ex situ* Task Force, remains ready to advise the CITES Secretariat and National Scientific Authorities on movement of elephants *ex situ* in terms of Conf-11.20 (Rev. CoP18) and definition of the term 'appropriate and acceptable' destinations. For contributions of the AfESG on MIKE-ETIS-TAG processes, see results reported for T-002. For contributions of the AfESG on AED, see results reported for T-012.

PLAN

Planning

T-012 (KSR 9)

Proportion of partners onboard to support information system: Ongoing.

Result description: AfESG sought the support of a software engineer through Vulcan Inc. and the Paul G. Allen Family Foundation (PGAFF) funding to automate



Ivory items carved from illegally acquired African ivory continue to be openly displayed for sale in Chinese shops for Chinese customers on Myanmar's border town of Mong La beside China, as seen here in January 2020
Foto: Lucy Vigne

the data integrity, classification of surveys and elephant population, production of tables and range maps. In October 2021, AfESG contracted a software engineer (Scott Reis) and has been working with the AED Officer and AfESG Data Review Working Group (DRWG) in reviewing and updating the automation of the analysis, updating the dropdown menu for data entry to include classifying the elephant type (based on phenotype). This work is still ongoing as the DRWG and Taxonomic groups of AfESG are refining the inputs and what is expected in the reports (output). Between June 2021 and December 2021, DRWG held four technical meetings. As indicated in the last report, various procedures and management decision processes were needed for members of DRWG and other AfESG members to contribute to and participate in the development and maintenance of the AED. For knowledge-based management, a draft training manual for data review was developed; for standards development, a draft checklist for quality assessment of surveys was developed; for project management, an issue tracking and resolution process was implemented on the Slack platform and a Gantt chart for AESR production was developed in Google Sheets. These instruments have been used to assess data gaps, enhance data quality and create a workflow for the timely production of the elephant status reports as of 2021–2022. The Forest Elephant Editing Group and AESR Group now meet every other week to ensure AED and AESR to address matters are dealt with by both teams and interns' workings are synchronised for the two processes. This has increased efficiency of work, strengthened the governance and reduced the time required to address issues. European Union through CITES-MIKE Project continued its support of ensuring the continuation of the AED in collecting, compiling, and presenting contemporary elephant data from all range States. The DRWG has worked on improving the reporting of surveys. Many of the surveys did not report additional information such as standard errors or confidence limits, which are important requirements in not downgrading the information to guesses. Efforts are being made to gather this information from reports and contact the people leading these surveys to provide this information. AfESG is currently building an AED consortium of partners that would commit financial, technical and in-kind support for the sustainability and resilience of the AED. The consortium will provide support for the requirements of a revamped AED, such as data collection, data storage and analytical outputs, methodological and analytical improvements, survey designs or strategic advice. Collaborative working in such a consortium, where the member's strengths, capabilities, and resources are harnessed and shared, will facilitate for example the development of innovative technical solutions to challenges facing AED. It would also create a deep understanding and appreciation for the AED and engage stakeholders on an ongoing basis, rather than only occasionally. A consortium will also help to combine different sources of sustainable funding for AED and AESR. This process received financial and technical support from Paul G. Allen Family Foundation and is ongoing.

T-016 (KSR 8)

Number of conservation plans/strategies updated: 2

Result description: Technical support was provided to the Masai Mara Ecosystem Plan.

Co-Chairs, Mrs Salimata Kone and Prof. Emmanuel Hema, provided initial input about elephants to an Environmental and Social Impact Assessment conducted by the Winning Consortium Simandou Rail (WCSR) for the development of the Simandou Railway Project in Guinea. The railway will transport iron ore from the Simandou iron ore mine in the east of the country to a port on the west coast of Guinea for export to international markets

T-017 (KSR 8)

Number of technical documents to support the development of conservation plans/ strategies: 1

Result description: The vision for the Human-Wildlife Coexistence (HEC) Task Force is to become the most relevant independent scientific body to advise on HEC issues in Africa. The specific goals are partitioned into three areas: (1) Advise on existing and proposed HEC interventions across Africa, assist with funding and analysis/publications for the results of specific projects; (2) Develop a range of Standard Operating Procedures that are endorsed by the AfESG Task Force members; (3) Improve our external communications through working with the Communications Task Force on a new website. This new site will be made up of 'toolboxes' of products developed over the past 20 years by members of the group. Examine the potential for a continental database of research – current and past for all ranges; (4) Re-do the AfESG website HEC section with new publications to make it as up to date as possible. Link to the IUCN online Human-Wildlife Conflict (HWC) library; (5) Produce a special edition of *Pachyderm* focusing on HEC; (6) Support evidence-based research on HEC and facilitate the publication in *Pachyderm*; (7) Provide Mitigation Tools and Guidelines (link to new offerings from Save the Elephants and update others from the HEC web page); (8) Develop a Webinar Series for AfESG members to listen in and contribute to, starting with 4–5 speakers presenting their fencing designs and what is working and what is not working in their field sites and then open for discussion. Suggestion for a first webinar on Carbon Credits, including how it works and what areas might be eligible; (9) Engage a consultant to do a formal review of fencing designs which could lead to a fresh policy brief for governments; (10) Collate a database on location of HEC projects across Africa, who is doing them, what field trials they are doing, and log any publications or reports into a central info database. This will also help identify hotspot sites and areas that need more capacity and funding support; (11) Assess the IUCN HWC Policy Brief when it comes out and write an addendum for AfESG on how it is applicable to elephants; (12) Examine how we can be relevant to and make recommendations for governments who are tasked with managing HEC and other developments that affect elephants.

Policy

T-015 (KSR 9)

Number of documents provided to support/ guide policy making: 0

Result description: We supported the African Elephant Action Plan (AEAP). The AEAP outlines the actions that must be taken in order to effectively conserve elephants in Africa across their range; it was adopted in March 2010 at the 15th meeting of the Conference of the Parties to CITES in Doha, Qatar. AfESG provided technical input in 2019 to the review process of the AEAP and is keen for continued involvement in providing technical support. AfESG has established a task force for continued engagement with the review and implementation process of AEAP.

ACT

Conservation actions

T-030 (KSR 10)

Number of technical documents provided to support conservation actions: 4

Result description: AfESG, through Dr Mohammed Yayha, the Senior Programme Officer, was involved in assisting in the development of the Kenya Masai Mara Ecosystem Plan. The Plan is undergoing review and will soon be presented to communities and the public for further inputs before it is legislated as a plan for the period 2021–2031. Some members of the AfESG have also been involved in developing National Elephant Action Plans (NEAP). Elephant Protection Initiative (EPI) has been leading the exercise and in Ethiopia, Gabon, Chad, Sierra Leone, Angola, Liberia and Malawi the plans have been finalised. The exercise of developing plans is ongoing in Nigeria, Côte d'Ivoire, Benin, South Africa and in Kenya. Kenya Wildlife Research and Training Institute (WRTI) in August 2021 requested the AfESG's advice on translocation of 13 elephants from the United Kingdom to Kenya. The AfESG *in situ* to *ex situ* Task Force will provide advice to WRTI based on international guidelines (*IUCN/SSC AfESG Guidelines for the in situ Translocation of the African Elephant for Conservation Purposes* and IUCN *Guidelines for Reintroductions and Other Conservation Translocations*) and also personal experiences and knowledge that will be needed for a successful translocation and rewilding. The Task Force developed a checklist that might guide this translocation if it takes place.

T-031 (KSR 10)

Number of technical documents provided to support conservation actions: 2

Result description: Decision 13.99 of the 13th meeting of the Conference of the Parties to CMS (COP13) encourages the Signatories to the West African Elephant MoU to consider replacing their Work Programme with the African Elephant Action Plan (AEAP) and to implement the MoU through the AEAP and the African Elephant Fund (AEF) structure. Furthermore, COP13 encourages the Signatories to meet and decide on the future of the MoU. AfESG was invited by the Convention on Migratory Species (CMS) to the Third Meeting of the Signatories to the Memorandum of Understanding Concerning Conservation Measures for the West African Populations of the African Elephant (*Loxodonta Africana*), held virtually 30 November–1 December 2021. The meeting was chaired by Ghana and deputised by Senegal. The AfESG secretariat met with the CMS secretariat and the West African elephant range states, and made a presentation on the status of West African elephants, the implications of the two species recognition, and recent Red List reassessment ('African forest and savanna elephants treated as separate species: Implications'). The signatories agreed to amend the MoU to align its contents with AEAP, but maintain the original purpose of the MoU, which is to conserve and protect transboundary elephant populations and their habitats in West Africa. The Red List assessments provide species-specific lists of range states, based on the best current information. Legislative nomenclature varies by country. The two-species listing will assist range states in harmonisation of nomenclature in national legislation, and focus attention on the differing management and conservation issues faced by the two species.

Policy

T-025 (KSR 10)

Number of position statements addressing major drivers/emerging threats of species or population loss: 1

Result description: A statement on the AfESG's position on the two species issue was released.

NETWORK

Capacity building

T-027 (KSR 2)

Number of task forces and working groups established: 8

Result description: AfESG is planning to have its 9th members meeting in September 2022. This four-day technical meeting will provide a platform for its members and invited stakeholders and partners to promote the long-term conservation of Africa's

elephants throughout their range. The meeting aims to: (1) share knowledge on the status and threats to the two African elephant species with an emphasis on the Critically Endangered Forest Elephants (*L. cyclotis*); (2) discuss and initiate practical solutions to address emerging conservation challenges, particularly on human elephant co-existence and potential impacts of climate change; (3) review current methods/practices and consider new ones to monitor, manage and conserve elephants; and (4) seek stakeholders' views and input into AfESG work for future consideration. The AfESG Taxonomic Task Force is to develop supporting documentation for the economic, political and conservation implications of the two-species listing of the African Elephant. It will further recommend support for range states in addressing the implications identified. The proposed enhancement of the African Elephant Database (AED) should support such future plans in terms of providing current information on elephant population, elephant types (Forest, Savannah or hybrid) and range. It is envisaged that this information will be accessible in terms of downloading the tables and maps. The AfESG has a total of 90 members for the 2021–2025 quadrennium (50 approved and 40 pending) and eight Task Forces: Human–Elephant Coexistence, African Elephant Taxonomy, Sustainable Use, Movement of elephants from *in situ* to *ex situ*, African Elephant Action Plan (AEAP), African Elephant Library (AEL), Communication, African Elephant Database (AED), and Data Review Working Group.

T-034 (KSR 2)

Number of people trained in conservation action: Ongoing.

Result description: The HEC working group has started developing ideas for revising the website and adding a section on HEC, writing a proposal for a post doc to review the literature and data on HEC and also support the processes of developing alternative solutions such as providing technical expertise and guidance on landscape and national land use plans.

Membership

T-029 (KSR 2)

Number of members meetings held: Ongoing.

Result description: Discussions on the 2022 AfESG members meeting have started and are planned to take place after the CITES meeting in 2022. Proposed dates: 12–16 September 2022. Theme: Forest and Savannah Elephant conservation and emerging challenges. Time: a maximum of 3–4 hours per day is suggested and the times should be optimal for participation of all members in Africa and for those on other continents. The meetings will have both plenary and group sessions.

Synergy

T-028 (KSR 4)

Number of emerging and relevant issues addressed: Ongoing.

Result description: The AfESG secretariat has been evaluating the Terms of Reference of the task forces and also developing a priority list based on emerging issues. Various meetings have been held with chairs and members of the task forces. The annual meeting to be held in September 2022 will prioritise the issues and build up programmes to address these issues.

T-033 (KSR 1)

Number of funding partners established and maintained: 8

Result description: AfESG has extended activities to fundraise by extending its network. The Co-Chair of AfESG, Dr Ben Okita, visited the United States in September 2021 and met senior officials of the World Wide Fund for Nature (WWF-US), International Fund for Animal Welfare (IFAW), Wildlife Conservation Society (WCS), US-Fish and Wildlife Service and the White Oak Conservation. Various pledges have been made by the various organisations. AfESG is in the process of signing agreements with some of these organisations including holding a series of meetings with the US-Fish and Wildlife Service for a structured engagement going forward. Locally, AfESG has consulted with both African Wildlife Foundation (AWF) and WWF-International. Discussions are ongoing with Save the Elephants (STE) on the continued support. IFAW has committed to US$ 50,000 every year. AWF made a commitment to incorporate some of our needs into their annual budgeting starting this year. WWF-US committed to a one-off donation of US$ 25,000, to which WWF International added US$ 10,000. More potential donors will be approached to form a funders circle for AfESG. Vulcan Inc/ Paul G. Allen Family Foundation is supporting AfESG with a total of US$ 571,000 until 2024 to revamp the African Elephant Database (AED), African Elephant Status Report (AESR), and governance of the AED. We leveraged on PGAFF support to reallocate some of the CITES-MIKES US$ 75,000 per year support towards AfESG's CITES mandate to hire a part-time Senior Programme Officer (SPO), Dr Mohammed Yahya, with effect from 1 October 2021.

COMMUNICATE

Communication

T-021 (KSR 13)

Number of print communications materials distributed in relation to specific taxonomic groups: Ongoing.

Result description: A summary of the Red Listing of the two species and what it means for conservation and management at the local and national levels will be translated into French, Portuguese and Swahili (the number of Swahili speakers, be they native or second-language speakers, is estimated to be approximately 200 million) to reach a large population of people living with elephants.

T-021 (KSR 13)

Number of digital communication outputs developed in relation to specific taxonomic groups: 2

Result description: The AfESG has established a Communication Task Force that is led by Dr. Lucy Vigne, which aims to promote communication and networking within AfESG and between AfESG and other entities. Two webinars were organised during this reporting period. The first, on 5 August 2021, was about the 2021 IUCN Red List assessments for African elephants, and the second, on 9 December 2021, was about the history and recent background to the two-species decision. The AfESG also has a Twitter account. The Task Force is also embarking on developing an independent AfESG website. The Communication Task Force is working in collaboration with the Human-Wildlife Conflict Task Force to lay out the structure before presenting to all the other task forces. The Red List reassessment team lead by Dr Kathleen Gobush presented the reassessment results and processes through a webinar to the AfESG members on 5 August 2021 and provided a communiqué to the members on how they dealt with questions from the participants. A petition was however filed with the IUCN SSC Standards and Petitions Committee challenging the new listing of the Savanna Elephants. The team started engaging the petitioners in October 2021 as per the formal petition process, which may last for up to fifteen months.

T-022 (KSR 13)

Number of print communications materials distributed in relation to specific taxonomic groups: Ongoing.

Result description: For knowledge-based management, a draft training manual for data review was developed; for standards development, a draft checklist for quality assessment of surveys was developed;



L-R: Azzedine Downes, President and CEO of the International Fund for Animal Welfare (IFAW); Vivek Menon, Chair IUCN/SSC-AsESG; Ali Kaka, IUCN Council; Ben Okita, Co-Chair IUCN/SSC-AfESG on a collegiality meeting and thank you to IFAW for their recent commitment to support some of the AfESG's activities
Photo: AfESG archives

for project management, an issue tracking and resolution process was implemented on the Slack platform and a Gantt chart for AESR production was developed in Google Sheets. These instruments have been used to assess data gaps, enhance data quality and create a workflow for the timely production of the elephant status reports as of 2021–2022. The Forest Elephant Editing Group and AESR Group now meet every other week to ensure AED and AESR to address matters are dealt with by both teams and inner workings are synchronised for the two processes. This has increased efficiency of work, strengthened the governance and reduced time required to address issues. The AfESG Co-Chairs and DRWG agreed to structure the AESR as two separate reports for forest and savannah. This decision was based on earlier work of AfESG teams biologically reassessing the risk of extinction of the two African elephant species using much available data and according to the IUCN Red List Guidelines, and also based on the recognition that the African Elephant is mainly made up of Forest, Savanna and hybrid populations as well as unknown. Both the AfESG DRWG and Taxonomic group have been working closely on including the separation of species in the database, developing criteria for categorising these species for each input zone, range and also designing new tables for accounting for these two species at country, regional and continental levels. The AfESG plans to publish three reports, a Forest, Savanna, and synthesis report. The Forest and Savanna reports will target the technical and scientific group and the synthesis will target decision and policy makers. The Forest report launch is planned for September 2022 and the Savanna and synthesis reports in 2023. Where possible, the launch of these reports will be planned to coincide with global conservation occasions or meetings.

T-023 (KSR 13)

Number of digital communication outputs developed in relation to specific taxonomic groups: 1

Result description: Regarding assessment of primary elephant corridors in West Africa, IUCN AfESG convened a workshop in 2006 which led to the development of action plans for the management of the following historical elephant corridors in the West African region: Sahel Burkina-Gourma Mali (at the border between Burkina Faso and Mali); Nazinga-Parc National Kaboré Tambi-Red Volta Ecosystem (between Burkina Faso and Ghana); Bia-Goasso-Djamakourou Forest Reserve (between Ghana and Côte d'Ivoire); Taï-Sapo National Parks (between Côte d'Ivoire and Liberia); Ziama-Wenegesi Forest Reserve (between Guinea and Liberia); Parc W-Pendjari National Parks (primarily between Burkina Faso and Benin). Under the supervision and the technical assistance of the IUCN AfESG, these actions plans were implemented with relative success in some corridors. A number of transborder frameworks for the management of these corridors were put in place. A range of field activities were carried out jointly by the concerned countries with the support of a large number of partners including local and international NGOs in the region and local communities. The goal of this assessment is to carry out a rapid study to understand the status of the international corridors used by elephants to move across these transboundary landscapes as relevant for meeting their biological need to access forage and water for survival and population persistence. IUCN AfESG capacity and resource limitations to date have prevented a robust evaluation of the status of each action plan and its implementation. At this time, a rapid assessment that evaluates action plan implementation, progress, obstacles and challenges would be ideal to take stock and help shape recommendations or decisions about future work, its prioritisation and communication.

T-024 (KSR 13)

Number of print communications materials distributed in relation to specific taxonomic groups: Achieved.

Result description: The *Pachyderm* biannual international peer-reviewed journal on elephants and rhinos was promoted.

Acknowledgements

The European Union, through the CITES MIKE project, WWF International, WWF-US, Save the Elephants and International Fund for Animal Welfare are thanked for their financial support during this reporting period. We also thank Vulcan Inc./the Paul G. Allen Family Foundation for their systematic and continued financial and technical support for AED and African Elephant Status Reporting. We thank IUCN Eastern and Southern Africa Regional Offices for managing finances, technical reporting and contracts. The IUCN Global Species Programme, especially Richard Jenkins, Ackbar Joolia and Jafet Nassar, are thanked for their continued support and strategic advice. Rose Mayienda and Mohammed Yahya of AfESG secretariat are thanked for tirelessly supporting the running of AfESG. All the AfESG members are thanked for their continued support, commitment and contribution to the Group's mission. We hope to achieve more success in the 2021–2025 quadrennium.

Summary of achievements

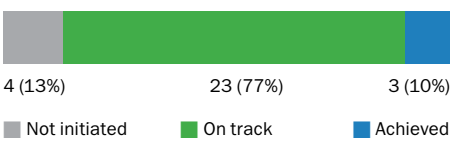
Total number of targets 2021–2025: 30

Geographic regions: 15 Global, 15 Africa

Actions during 2021:

Assess:	10 (KSR 5, 6)
Plan:	4 (KSR 8, 9)
Act:	3 (KSR 10)
Network:	5 (KSR 1, 2, 4)
Communicate:	5 (KSR 13)

Overall achievement 2021–2025:



2021 Report

IUCN SSC Afrotheria Specialist Group



SOCIAL MEDIA AND WEBSITE
Twitter: @Tweeting_Tenrec
Website: www.afrotheria.net

CHAIR
Andrew Taylor
The Endangered Wildlife Trust, Glen Austin AH, Midrand, South Africa

RED LIST AUTHORITY COORDINATOR
Matthew Child
South African National Biodiversity Institute (SANBI), Kirstenbosch National Botanical Garden, Newlands Cape Town, South Africa

NUMBER OF MEMBERS
17

Mission statement

The IUCN SSC Afrotheria Specialist Group (ASG) facilitates the conservation of hyraxes, the Aardvark, elephant-shrews or sengis, golden moles, tenrecs, and their habitats by: (1) providing sound scientific advice and guidance to conservationists, governments, and other interested groups; (2) raising public awareness; and (3) developing research and conservation programmes.

Projected impact 2021–2025

If the ASG achieved all its targets, it would be able to deliver more accurate, data-driven Red List assessments for more Afrotherian species and, therefore, be in a better position to move to conservation planning, especially for priority species.

Targets 2021–2025

ASSESS

T-002 Reassess Red List categories for at least 50% of ASG species.

T-003 Conduct surveys to determine distribution and abundance of five hyrax species.

T-004 Revise taxonomy of five hyrax species.

T-005 Complete up to four reassessments of taxonomy of golden moles in species where this is necessary (e.g., *Amblysomus* and *Neamblysomus* species).

T-006 Develop a new non-invasive sampling method for golden moles, which would facilitate larger sample sizes and eventually lead to a better understanding of species distributions.

T-007 Collect basic data for three golden mole species, including geographic distributions and natural history data.

T-008 Integrate the monitoring of tenrecs in the management of key protected areas with threatened species in order to track their status and threats and identify key conservation concerns.

T-009 Conduct genomic and phenomic studies to clarify the taxonomy and species diversity within the genera *Microgale* and *Nesogale*.

T-010 Develop and assess field trials for standardised camera trapping methods to determine population estimates for giant sengis.

T-011 Conduct surveys to assess distribution, abundance, threats and taxonomic status of the Data Deficient sengi species (Somali Sengi, *Galegeeska revoilii*; Dusky Sengi, *Elephantulus fuscus*; Dusky-footed Sengi, *E. fuscipes*; Karoo Rock Sengi, *E. pilicaudus*).

T-012 Assess trade of genera *Rhynchocyon* (giant sengis) and *Petrodromus* (Four-toed Sengi) in East Africa.

T-013 Develop a survey method to estimate Aardvark (*Orycteropus afer*) population densities and sizes.

T-014 Survey Aardvark populations to determine abundance, distribution and trends.

T-015 Conduct taxonomic studies to determine the systematics of Aardvarks, with a focus on contrasting Aardvarks from central African forests with southern African savanna Aardvarks.

COMMUNICATE

T-001 Update and maintain the Afrotheria.net website.

T-016 Produce one Afrotheria Specialist Group newsletter every year.

Activities and results 2021

ASSESS

Research activities

T-005 (KSR 5)

Number of taxonomic evaluations completed: 0

Somali Sengi (*Galegeeksa revoilii*) at a new locality in the Ali Sabieh Region of Djibouti, near the Djalelo Wildlife Protected Area
Photo: Houssein Rayaleh of Association Djibouti Nature



Grant's Golden Mole, Lambert's Bay Area, west coast of South Africa
Photo: Esther Matthew, Drylands Conservation Programme, Endangered Wildlife Trust



Microgale taiva, Parc Nacional de Midongy Sud, Madagascar
Photo: L.E. Olson



Result description: Bayesian phylogenetics and phylogeography (BPP) analysis provided support for nine *Amblysomus* species: *A. h. meesteri* (P = 1.000); *A. marleyi* (P = 0.999); *A. corriae* (P = 0.998); *A. h. hottentotus* (P = 0.999); *A. h. pondoliae* (P = 0.999); *A. h. longiceps* + Ermelo Dam (P = 0.999); *A. hottentotus* (Umtata) (P = 0.998); *A. h. iris* + samples from Durban coastal regions (P = 0.967); *A. septentrionalis* + *A. robustus* + Ngome Forest + Ermelo Dam (P = 0.964). This work should be published in 2022.

T-006 (KSR 5)

Non-invasive technique demonstrated to work: 1

Result description: eDNA extraction from soil has proven to be an extremely useful technique for sampling golden moles and assessing species distributions. All samples from Lambertsbay were identified as Grant's Golden Mole (*Eremitalpa granti*), and since this site falls within the known distribution of this species, its distribution will not be updated. eDNA samples were also collected from numerous sites in the Eastern Cape and along the west coast, and have provided insight on species distributions, extending the known distribution ranges for some species. The work on west coast species will be published early in 2022, and the work on Eastern Cape species shortly thereafter.

T-007 (KSR 5)

Number of species for which basic species information is increased: 1

Result description: We have found evidence of the Critically Endangered De Winton's Golden Mole (*Cryptochloris wintoni*) on the west coast, in and around Port Nolloth, but failed to find evidence of the Endangered Giant Golden Mole (*Chrysospalax trevelyani*) in the Eastern Cape. However, we still believe it exists there, and will conduct further study in this area in 2022. The elusive Hottentot Golden Mole (*Amblysomus hottentotus*) lineage was found at the only site it is known to occur (Umtata) as well as additional sites. The distribution of this lineage will be updated once the taxonomy is resolved.

T-009 (KSR 5)

Number of published taxonomic descriptions and/or revisions: 0

Result description: Genomic and phenomic studies to clarify the taxonomy and species diversity within the genera *Microgale* and *Nesogale* are ongoing, but no new results are reported during 2021.

T-010 (KSR 5)

Field trials conducted: 0

Result description: Dr Markéta Antonínová of Friends of Arabuko-Sokoke Forest (Kenya) reported to the ASG that their team is trying to use camera traps and other methods to try to assess Golden-rumped Sengi *(Rhynchocyon chrysopygus*) population trends. Initial contact was in October 2020, but we have no recent communication from them. Otherwise, the most recent camera trap study of giant sengis was published in late 2020 (Amin, R., et al. 2021. Habitat use of the Endangered Golden-rumped Sengi, *Rhynchocyon chrysopygus*. *African Journal of Ecology* 59:108–116. doi.org/10.1111/aje.12804) but was focused on habitat use, not population numbers. So, there are no deliverables for this target yet.

T-011 (KSR 5)

Number of surveys conducted: 0

Result description: There is nothing substantial for this target yet. There is a little new data concerning additional localities of occurrence for Somali Sengi (*G. revoilii*) in Djibouti – see ASG newsletter for December 2021. We also saw a publication in early 2021 (Krásová, J., et al. 2021. The Rufous Sengi is not *Elephantulus*—Multilocus reconstruction of evolutionary history of sengis from the subfamily Macroscelidinae. *Journal of Zoological Systematics and Evolutionary Research* 59:918–932. doi.org/10.1111/jzs.12460) that seems to have sampled three Dusky Sengi (*E. fuscus*) specimens, but these are unvouchered occurrences and would tell us little other than a locality and that the species is still abundant enough to wander into a trap. Prior to this, the last work with *E. fuscus* was reported in the ASG newsletter in September 2018.

Planning

T-008 (KSR 5)

Number of protected areas where monitoring is integrated into management plans: 0

Result description: This work is ongoing, but no new results are available.

COMMUNICATE

Communication

T-001 (KSR 13)

Number of taxonomic group web pages updated: 1

Result description: Updating and maintenance of the Afrotheria.net website is an ongoing process and was initiated during 2020 with funding from Global Wildlife Conservation. More work still needs to be done, however, so it is not completed yet.

T-016 (KSR 13)

Number of newsletters published: 1

Result description: The newsletter for 2021 was released in December 2021.

Acknowledgements

We thank our Afrotheria Specialist Group members, all of whom are volunteers, who contributed towards ongoing work on our species and to those who contributed towards the annual newsletter. In particular, we are grateful to our section coordinators, Samantha Mynardt, Lee Koren, Thomas Lehmann, Voahangy Soarimalala, Link Olson and Steven Heritage, as well as our newsletter editor P.J. Stephenson. We also thank Avian Designs for supporting our website at discounted rates.

Summary of achievements

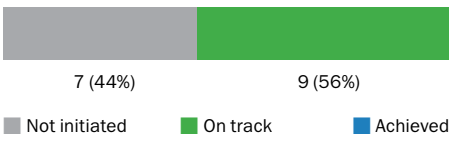
Total number of targets 2021–2025: 16

Geographic regions: 1 Global, 15 Africa

Actions during 2021:

Assess: 7 (KSR 5)
Communicate: 2 (KSR 13)

Overall achievement 2021–2025:



IUCN SSC Anteater, Sloth and Armadillo Specialist Group



SOCIAL MEDIA AND WEBSITE
Facebook: **@xenarthrans**
Instagram: @asasg_2021
Websites: xenarthrans.org; pygmysloth.org; perezosopigmeo.org

CHAIR
Mariella Superina
IMBECU — CCT CONICET
Mendoza, Mendoza, Argentina

RED LIST AUTHORITY COORDINATOR
Agustin Manuel Abba
CEPAVE — CCT CONICET
La Plata, La Plata, Argentina

NUMBER OF MEMBERS
31

Mission statement

The mission of the IUCN SSC Anteater, Sloth and Armadillo Specialist Group is to promote the long-term conservation of the extant species of xenarthrans (anteaters, sloths and armadillos) and their habitats.

Projected impact 2021-2025

By the end of 2025, we envision we will have achieved increased protection for our priority species. We aim to reach this goal by reviewing and endorsing existing national or regional action plans as well as supporting the development and implementation of comprehensive action plans for xenarthrans. Capacity building through training courses will allow us to increase the number of researchers dedicated to conservation-relevant research on armadillos, sloths and anteaters. We predict that our awareness campaigns will increase the knowledge about our species and their conservation problems among the general public, especially the impact of illegal trade and the use of xenarthrans as exotic pets.

Targets 2021-2025

ASSESS

T-001 Complete global Red List assessments of recently described Xenarthra species by 2022.

T-002 Complete global Red List reassessments of all Xenarthra species by 2022.

T-004 Facilitate assessments of other taxa for the IUCN Red List.

PLAN

T-006 Develop an Action Plan for Pygmy Sloths (*Bradypus pygmaeus*) by 2022.

ACT

T-011 Review and endorse existing national or regional action plans for Xenarthra.

NETWORK

T-003 Establish one new formal partnership that will provide financial and institutional support to the Specialist Group by 2025.

T-005 Recruit new members from underrepresented range countries by 2023.

T-010 Build capacity through courses on the biology and conservation of Xenarthra in range countries.

COMMUNICATE

T-007 Publish four annual issues of our newsletter and journal, *Edentata*.

T-008 Raise awareness about illegal trade of Xenarthra.

T-009 Strengthen our Specialist Group's outreach and education strategies.

T-013 Issue a position paper about the use of xenarthrans as pets.

Activities and results 2021

ASSESS

Red List

T-001 (KSR 6)

Number of new global Red List assessments completed: 0

Result description: we will initiate this target once our Taxonomy Subcommittee has defined the criteria for acceptance of taxonomic changes and evaluated those that have been proposed in the past few years.

T-002 (KSR 6)

Number of global Red List reassessments completed: 6

Result description: prior to initiating the reassessment process, we set up a taxonomy subcommittee to define the criteria to accept or reject proposed taxonomic changes. We then initiated the reassessment process of the sloths, as this group



Least Concern Southern Tamandua,
Tamandua tetradactyla, Parnaíba, Piauí, Brazil
Photo: Karina Theodoro Molina, Instituto Tamanduá



Least Concern Screaming Hairy Armadillo,
Chaetophractus vellerosus, Chile
Photo: Armadillos de Chile

currently does not have pending taxonomic changes. We will continue with the other groups (anteaters and armadillos) in 2022.

T-004 (KSR 6)

Number of workshops facilitated: 7

Result description: our Specialist Group Chair and Red List Authority have facilitated seven online workshops to assess the conservation status of the mammals of Colombia.

PLAN

Planning

T-006 (KSR 8)

Number of conservation plans/strategies developed: 0

Result description: the Pygmy Sloth Conservation Project held a workshop called 'Key Contributions for the Pygmy Sloth Conservation Plan'. It was attended by authorities from the Ministry of Environment, members of the communities near Escudo de Veraguas Island, authorities from the Ngäbe-Buglé region, representatives of non-profit organisations, and governmental institutions. The overall objective of the workshop was to highlight the importance of Pygmy Sloth conservation and develop alternatives for the integrated management of Escudo de Veraguas Island through a participatory dynamic and based on information provided by key stakeholders in previous workshops. The threats faced by the Pygmy Sloth were identified and prioritised, alternatives to mitigate these threats were discussed, and key actors were identified to carry out short- and long-term actions. The information generated in this workshop is the first step in the consensual validation process of the Pygmy Sloth Conservation Plan, which consists of including the perception and contributions of the Ngäbe community, the main users of Escudo de Veraguas Island and guarantors of its conservation.

NETWORK

Capacity building

T-003 (KSR 3)

Number of courses taught: 1

Result description: the courses had to be postponed due to the pandemic. We did, however, teach a short virtual course for researchers, members of the local communities, and government representatives from Guyana.

Membership

T-005 (KSR 2)

Number of SSC members recruited: 7

Result description: we have recruited seven new members from Xenarthra range countries that were not yet represented in our Specialist Group. Our Specialist Group now has 31 members from 19 countries and a wide variety of backgrounds.

Synergy

T-003 (KSR 1)

Number of 'in-kind' partnerships established and maintained: 1

Result description: we have entered a partnership with Foundation for International Aid to Animals (FIAA). We will work together in educational and awareness programmes, as well as other actions that support the conservation of the Xenarthra in the Americas, including their rescue and rehabilitation.

COMMUNICATE

Communication

T-007 (KSR 12)

Number of Species e-bulletin, Save Our Species newsletter, SSC Groups' newsletter editions produced: 1

Result description: in December, we published issue 22 of our newsletter and journal *Edentata*.

T-009 (KSR 13)

Number of digital communication outputs developed in relation to specific taxonomic groups: 3

Result description: we initiated an Education Subcommittee that is focusing on enhancing our outreach and education strategies. Among other activities, we set up an Instagram account (@asasg_2021) and have been regularly posting news about Xenarthra and their conservation both on Instagram and Facebook. We currently have around 5,200 followers on Facebook and 255 on Instagram. To increase visibility of our most threatened species, the Critically Endangered Pygmy Sloth, we have set up a website about the Pygmy Sloth Conservation Project. It is available in English and Spanish (https://pygmysloth.org; https://perezosopigmeo.org). We are grateful for the financial support of our partner institution Nurtured by Nature, which made it possible to design and set up such a beautiful website.

Acknowledgements

We are grateful for the sustained support by our partner institutions Nurtured by Nature and Foundation for International Aid to Animals.

Summary of achievements

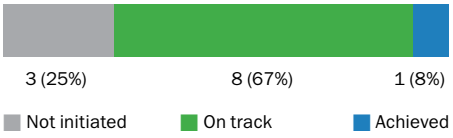
Total number of targets 2021-2025: 12

Geographic regions: 1 Global, 11 America

Actions during 2021:

Assess: 3 (KSR 6)
Plan: 1 (KSR 8)
Network: 3 (KSR 1, 2)
Communicate: 2 (KSR 12, 13)

Overall achievement 2021-2025:



IUCN SSC Antelope Specialist Group





SOCIAL MEDIA AND WEBSITE
Facebook: IUCN SSC Antelope Specialist group
Twitter: @AntelopeSG, #AntelopeSG

CO-CHAIR
Philippe Chardonnet
Independent consultant, France

CO-CHAIR
David Mallon
Division of Biology and Conservation Ecology, Manchester Metropolitan University, UK

RED LIST AUTHORITY COORDINATOR
David Mallon
Division of Biology and Conservation Ecology, Manchester Metropolitan University, UK

NUMBER OF MEMBERS
90

Mission statement

The mission of the Antelope Specialist Group (ASG) is to promote the conservation of the world's antelope diversity and to contribute to the mission of SSC.

Projected impact 2021–2025

The status of antelopes is improved, declines are halted, and extinctions prevented.

Targets 2021–2025

ASSESS

T-002 Maintain status updates on all antelope taxa.

T-003 Complete all Red List reassessments for antelopes, as required.

T-004 Complete Green Status assessments for threatened species.

PLAN

T-005 Develop the Global Antelope Strategy.

T-006 Develop and support action plans for key species.

T-007 Enhance the link between Red List assessments and planning.

T-008 Revise the Intensive Genetic Manipulation Policy.

T-009 Produce policy statements as appropriate.

ACT

T-016 Support the preparation of grant proposals.

T-018 Liaise with the UN Food and Agriculture Organization (FAO) and World Organisation for Animal Health (OIE) for the PPR GEP (Global Eradication Campaign of "Peste des Petits Ruminants").

T-019 Support governments and others on field action for antelopes.

NETWORK

T-010 Liaise annually with CITES and the Convention on the Conservation of Migratory Species of Wild Animals (CMS).

T-011 Provide advice to the SSC Chair and IUCN.

T-014 Renew the Memorandum of Understanding (MoU) with Royal Zoological Society of Scotland (RZSS) on genetics and planning.

T-015 Increase the regional and gender diversity of ASG members.

COMMUNICATE

T-001 Publish at least eight newsletters (two per year) and special issues.

T-012 Relaunch website.

T-013 Maintain Facebook and Twitter accounts.

T-017 Produce book on African Buffalo.

Activities and results 2021

ASSESS

Red List

T-002 (KSR 6)

Number of technical documents provided to support Red List assessments/reassessments: 21

Result description: Twenty-one (21) data sheets were updated: Addax (*Addax nasomaculatus*), Scimitar-horned Oryx (*Oryx dammah*), Dama Gazelle (*Nanger dama*), Beisa Oryx (*Oryx beisa*), Silver Dikdik (*Madoqua piacentinii*), Dibatag (*Ammodorcas clarkei*), Lesser Kudu (*Tragelaphus imberbis*), Greater Kudu (*Tragelaphus strepsiceros*), Gerenuk (*Litocranius walleri*), Saiga (*Saiga tatarica*), Mongolian Saiga (*Saiga tatarica mongolica*), Peninsular Pronghorn (*Antilocapra americana peninsularis*), Sonoran Pronghorn



Critically Endangered Dama Gazelles (*Nanger dama*) in Ouadi Rime
Ouadi Achim Wildlife Reserve, Chad, December 2021
Photo: Jaime Dias - Wings for Conservation

(*Antilocapra americana sonoriensis*), White-bellied Duiker (*Cephalophus leucogaster*), Soemmerring's Gazelle (*Nanger soemmerringii*), White-eared Kob (*Kobus kob leucotis*), Mongalla Gazelle (*Eudorcas albonotata*), Heuglin's Gazelle (*Eudorcas tilonura*), Tora Hartebeest (*Alcelaphus buselaphus tora*), Puku (*Kobus vardonii*), Hirola (*Beatragus hunteri*).

T-003 (KSR 6)

Number of global Red List reassessments completed: 1

Result description: The Peninsular Pronghorn (*Antilocapra americana peninsularis*) assessment was completed and published. Five more assessments were started, and draft IUCN Species Information Service (SIS) sheets created.

PLAN

Planning

T-006 (KSR 8)

Number of conservation plans/strategies developed: 5

Result description: The Mongolian Saiga National Action Plan was completed; the process was facilitated by David Mallon, and an online planning workshop held in September 2021. The CMS Saiga MoU work plan 2021–2026 was revised and approved at the Fourth Meeting of the Signatories to the Saiga MOU (CMS MOS4), in September 2021. For the CMS Addax Roadmap, funding was received from the Government of Germany and work began on development of the roadmap (target date for completion is 31 December 2022). The process for the Tunisia Addax National Action Plan was initiated by DGF (government agency), Marwell Wildlife and ASG. For the Dama Gazelle Conservation Strategy, the 2.5-year review was facilitated by ASG.

T-007 (KSR 8)

Number of Red List assessments directly linked to planning: 0

Result description: Work continued to finalise the methodologies to be used for linking assessments to planning.

ACT

Conservation actions

T-016 (KSR 10)

Number of technical documents provided to support conservation actions: 3

Result description: Support letters were sent to National Geographic for Hirola. Follow up took place in 2021 for projects launched thanks to support letters sent in 2020 for Addax in Morocco and Korrigum (*Damaliscus lunatus korrigum*) in W-Arly-Pendjari Complex (WAP complex).

T-019 (KSR 10)

Number of documents, consultations, advice provided in support of antelope conservation action: 10

Result description: We liaised with the Government of Niger on Addax conservation; liaised with the Government of Morocco on Addax conservation; carried out a consultation with African parks on translocations of antelopes in West and Central Africa; liaised with Mount Kenya Game Conservancy on Mountain Bongo (*Tragelaphus eurycerus isaaci*) reintroduction; supported the West African Sitatunga Working Group; worked with Sahara Conservation Fund (SCF), Environment Agency – Abu Dhabi (EAD), Smithsonian Conservation Biology Institute (SCBI), African Parks, Edinburgh University and CIRAD (French Agricultural Research Centre for International Development) on reintroductions of Oryx and Addax to Chad; facilitated a working group on captive breeding strategy for Dama Gazelle in Chad

(with EAD, RZSS, SCF, Zoological Society of London, Fossil Rim); liaised with Israel National Parks Authority on the genetics and status of Acacia Gazelle (regarded by some as a separate subspecies of the Arabian Gazelle, *Gazella arabica*); carried out a consultation with Northern Rangelands Trust on Beisa Oryx project; and worked with the FAO locust aerial survey in Horn of Africa on sightings and records of rare antelopes.

Technical advice

T-018 (KSR 10)

Number of technical consultations provided to support conservation actions: 1

Result description: As member of the Wildlife Working Group of the PPR GREN, Phillipe Chardonnet attended the virtual 4th meeting of the Peste des Petits Ruminants Global Research and Expertise Network (PPR-GREN IV) organised by OIE and FAO (December 2021).

NETWORK

Agreements

T-014 (KSR 3)

MoU signed: 1

Result description: Text revised and agreed by both parties.



Vulnerable Eastern Giant Eland (*Tragelaphus derbianus gigas*), adult male, Northern Cameroon
Photo: Faro Lobeke Conservation Cameroon

Blackbuck (*Antilope cervicapra*) at Blackbuck National Park, Velavadar, India
Photo: David Mallon



Membership

T-015 (KSR 2)

Number of SSC members recruited: 7

Result description: We invited new members to ASG, including women (3) and regional members (4), and we are working to add more in early 2022.

Synergy

T-010 (KSR 3)

Number of collaborations and cooperation: 3

Result description: David Mallon attended the virtual 4th Meeting of Range States, CMS Saiga MoU (September 2021). David Mallon and Phillipe Chardonnet collaborated on several occasions with CMS Secretariat on Sahelo-Saharan Megafauna Concerted Action and worked with CMS Secretariat on a major funding proposal for conservation of Addax (*Addax nasomaculatus*).

T-011 (KSR 3)

Provide technical advice as required: ongoing

Result description: Phillipe Chardonnet attended in person the IUCN World Conservation Congress 2020 in Marseille, developed and got accepted Motion 102 on biodiversity and livestock expansion, and organised an event to promote Motion 102.

COMMUNICATE

Communication

T-001 (KSR 12)

Number of Species e-bulletin, Save Our Species newsletter, SSC Groups' newsletter editions produced: 2

Result description: *Gnusletter* vol. 38: 1 and 2 published.

T-013 (KSR 13)

Number of digital communication outputs developed in relation to specific taxonomic groups: 8

Result description: Twitter posts and reposts were made.

T-017 (KSR 12)

Number of Species e-bulletin, Save Our Species newsletter, SSC Groups' newsletter editions produced: 0

Result description: Three quarters of the book on African Buffalo (*Syncerus caffer*) are completed with publication expected end of 2022.

Acknowledgements

We are grateful to the following: Marwell Wildlife for supporting the ASG Programme Office; RZSS for advice on genetic issues; staff in the SSC Chair's Office and Global Species Programme for their support and advice; and all members and others who responded to requests for information or contributed to *Gnusletter*. We also extend our thanks to all those who supported IUCN World Conservation Congress Resolution 102.

Summary of achievements

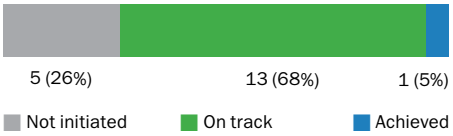
Total number of targets 2021–2025: 19

Geographic regions: 17 Global, 2 Africa

Actions during 2021:

Assess:	2 (KSR 6)
Plan:	2 (KSR 8)
Act:	3 (KSR 10)
Network:	4 (KSR 2, 3)
Communicate:	3 (KSR 12, 13)

Overall achievement 2021–2025:



IUCN SSC Asian Elephant Specialist Group



SOCIAL MEDIA AND WEBSITE
Website: https://www.asesg.org

CHAIR
Vivek Menon
Wildlife Trust of India
F-13, Noida 201301,
India

RED LIST AUTHORITY COORDINATOR
A. Christy Williams
WWF-International c/o WWF Myanmar, Dagon Township, Yangon, Myanmar

NUMBER OF MEMBERS
104

Mission statement

The Asian Elephant Specialist Group (AsESG) does not have a mission statement but has developed a mandate for the Group: (1) AsESG shall provide best available scientifically grounded evidence as to the abundance, distributions and demographic status of Asian Elephant (*Elephas maximus*) populations in all 13 range states. It shall also set forth advisory guidelines for range states and assist in capacity building in performing their own assessments; (2) AsESG shall analyse threats to wild populations and raise awareness of these by communicating both within and outside the scientific community, and also set forth standards/guidelines for management and welfare of wild and captive elephants, including but not limited to the surveillance of disease interfaces and economic activities that impact elephant; (3) AsESG shall use its advisory mandate to guide conservation and welfare issues of Asian Elephants by governments, civil society or any other relevant stakeholder.

Projected impact 2021–2025

Conservation prospect of Asian Elephant across 13 Range States improved through collaborative efforts of range countries and AsESG members.

Targets 2021–2025

ASSESS

T-008 Support National Red List assessment of elephants in at least two countries.

T-009 Ascertain taxonomic status of Borneo elephants and their Red List assessment.

T-010 Map the distribution of elephants in all the 13 range states in Asia.

T-014 Communicate elephant conservation and research on Asian Elephants through the *GAJAH* journal (2 volumes per year).

PLAN

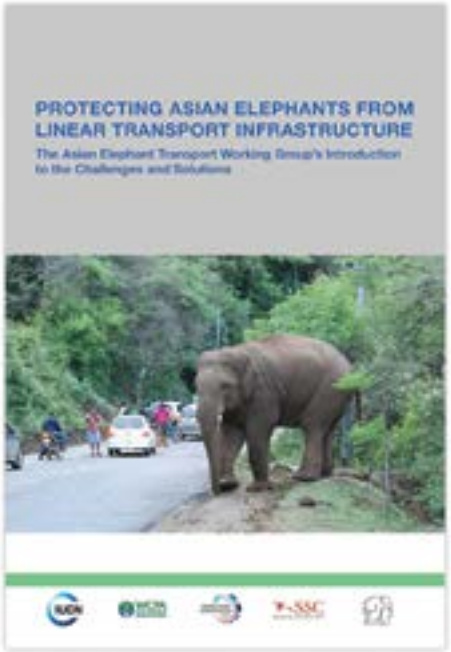
T-003 Develop National Elephant Conservation Action Plans (NECAP) on elephant conservation for all 13 range states.

T-004 Develop guidelines/protocols on select issues for the conservation of Asian Elephants in Working Groups.

T-006 Assist CITES and its Monitoring the Illegal Killing of Elephants (MIKE) programme with Asian Elephant information and report for CITES Steering Committee meetings.

ACT

T-013 Provide technical support and a plan to the Viet Nam Administration of Forestry for the recovery of the elephant population and habitat.



Linear report cover
Photo: AsESG



Elephant herd in Thailand forest
Photo: Suphisit (AekAtom) JITVIJAK

NETWORK

T-001 Renew AsESG membership for period 2021–2025 and expand it with representatives from each Range State as well as youths.

T-002 Develop proposals and generate financial resources to support AsESG conservation activities.

T-005 Along with the IUCN World Commission on Protected Areas (WCPA), develop best practices for linear infrastructures passing through elephant habitats in Asia.

T-011 Organise two meetings (11th and 12th) of the Asian Elephant Specialist Group members in 2022 and 2024.

T-012 Assist host countries in jointly hosting the 3rd Asian Elephant Range States meeting.

COMMUNICATE

T-007 Maintain an updated AsESG website for dissemination of information on the species, resources and group expertise.

Activities and results 2021

ASSESS

Red List

T-009 (KSR 6)

Number of new national Red List assessments published: 0

Result description: A Working Group has been formed to assess the taxonomic status of Borneo elephants and the Working Group had its meeting in June 2021.

Research activities

T-010 (KSR 6)

Map showing the distribution of elephants across 13 Range States in Asia: 1

Result description: The Working group had a review meeting with the Chair and is being expanded to work on the target.

T-014 (KSR 5)

Number of publications produced in internal journals of SSC groups: 1

Result description: *Gajah* 53 (2021) was published and is available online at: https://www.asesg.org/gajah53.php.

PLAN

Planning

T-003 (KSR 8)

Number of conservation plans/strategies developed: 4

Result description: Peninsular Malaysia, Lao PDR, Nepal and India are currently working to develop their National Elephant Conservation Action Plan. Bangladesh, Bhutan, Cambodia, Myanmar, Sabah Malaysia and Thailand have already published their plan. Draft plans exist for Indonesia and China. Viet Nam is also working on their plan.

T-004 (KSR 8)

Number of conservation plans/strategies developed: 5

Result description: AsESG has produced five guidelines and is working to finalise the other plans and guidelines.

Policy

T-006 (KSR 9)

Number of documents provided to support/guide policy making: 1

Result description: AsESG submitted its report to CITES on 'Asian elephants (*Elephas maximus*): Status, threat and conservation actions' for the 74th Standing Committee report on 1 December 2021.

ACT

Technical advice

T-013 (KSR 10)

Number of technical consultations provided to support conservation actions: 1

Result description: AsESG has drafted the plan. The same will be taken up with the Viet Nam Forest Department in 2022. The Chair discussed the plan with AsESG Working Group members and Viet Nam Forest officials on 24 February 2022 to finalise the plan and how to take this forward. Some comments/suggestions were received and will be incorporated into the plan.

NETWORK

Membership

T-001 (KSR 2)

Number of SSC members recruited: 104

Result description: AsESG membership for the 2017–2020 quadrennium was reviewed and renewal of membership for 2021–2025

Elephant NH-209 in BRT Tiger Reserve, India
Photo: Sandeep Kr Tiwari, AsESG





Asian Elephant Range State preparatory meeting with all 13 Range Country officials
Photo: AsESG



The Chair at WCC
Photo: AsESG

is in progress. The Chair has confirmed 104 members (96 from last quadrennium and eight new members) from 22 countries. The Chair has also constituted a Leadership Team, consisting of Ms Heidi Riddle (AsESG Vice Chair), Dr A Christy Williams, Dr Wong Ee Phin (AsESG Deputy Chair) and Dr Jennifer Pastorini.

Synergy

T-002 (KSR 1)

Number of funding partners established and maintained: 4

Result description: The AsESG has been able to submit proposals to and generate financial resources from International Fund for Animal Welfare (IFAW), International Elephant Foundation, African Lion Safari and Columbus Zoological Park.

T-005 (KSR 3)

Collaborate with WCPA on linear infrastructures in Asian Elephant habitat: ongoing

Result description: The Asian Elephant Transport Working group, formed jointly with members from IUCN SSC AsESG and IUCN WCPA Connectivity Conservation Specialist Group, has published its first report: Ament, R., et al. 2021. *Protecting Asian Elephants from Linear Transport Infrastructure: The Asian Elephant Transport Working Group's Introduction to the Challenges and Solutions*. AsETWG (Asian Elephant Transport Working Group; IUCN WCPA Connectivity Conservation Specialist Group/IUCN SSC Asian Elephant Specialist Group). https://doi.org/10.53847/VYWN4174. This can be downloaded at: https://www.asesg.org/PDFfiles/Protecting.pdf.

COMMUNICATE

Communication

T-007 (KSR 12)

Functional website: ongoing

Result description: The AsESG website is being periodically updated with news, publications (including journals) and other features.

Acknowledgements

The AsESG Secretariat would like to thank all the members for actively participating in discussion, assistance and contributing to the overall goal of the Specialist Group. We would like to thank the Working Group conveners and the members who have successfully completed their outcome documents. The Chair would like to convey his sincere thanks to range States for updating/preparing their National Action Plan for Conservation of Elephants and also actively participating in discussion. We would also like to extend our appreciation to the Government of Nepal for hosting the 3rd Asian Elephant Range State meeting in collaboration with AsESG. The Chair would like to thank Ms Heidi Riddle, Dr A Christy Williams, Dr Wong Ee Phin and Dr Jennifer Pastorini for agreeing to be part of the AsESG Leadership team and taking the lead. The Chair expresses his thanks to the AsESG Membership Advisory Committee (MAC) and proposal endorsement committee for their proactive support. Special thanks to International Fund for Animal Welfare (IFAW) for supporting the activities of AsESG and financial support. We would also like to extend our thanks and appreciation to Asian Elephant Foundation and AZA Elephant SAFE program for the financial support extended to AsESG. The AsESG Secretariat would also like to thank Prof. Jon Paul Rodríguez, SSC Chair, and his team and the IUCN Office for extending all assistance and help to AsESG.

Summary of achievements

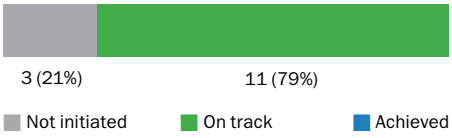
Total number of targets 2021–2025: 14

Geographic regions: 14 Asia

Actions during 2021:

Assess:	3 (KSR 5, 6)
Plan:	3 (KSR 8, 9)
Act:	1 (KSR 10)
Network:	3 (KSR 1, 2, 3)
Communicate:	1 (KSR 12)

Overall achievement 2021–2025:



IUCN SSC Asian Rhino Specialist Group



CHAIR
Bibhab Kumar Talukdar
Aaranyak, 50 Samanwoy Path (Survey), Guwahati 781 028, India

RED LIST AUTHORITY COORDINATOR
Susie Ellis Wildt
International Rhino Foundation

NUMBER OF MEMBERS
58

SOCIAL MEDIA AND WEBSITE
Facebook: @asianrhinospecialistgroup
Website: https://rhinos.org/our-work/research-and-publications/iucn-asian-rhino-specialist-group/

Mission statement

The mission of the IUCN SSC Asian Rhino Specialist Group (AsRSG) is to foster conservation and management of the three species of Asian rhinos and their habitats.

Projected impact 2021–2025

AsRSG shall assist Asian rhino range states with technical inputs to maintain viable, stable and enhance population of three species of Asian rhinos. AsRSG shall also assist Assam Government in India for range expansion of Greater One-horned Rhino within Assam, India in the current quadrennium.

Targets 2021–2025

PLAN

T-003 Complete preparation of Greater One-horned Rhino Conservation Plan.

T-004 Assist Indonesia to prepare National Plan for Javan Rhino (*Rhinoceros sondaicus*) and Sumatran Rhino (*Dicerorhinus sumatrensis*).

ACT

T-005 Assist India and Nepal with technical inputs from the AsRSG members to increase the wild population of Greater One-horned Rhinos to 4,500 by 2025.

NETWORK

T-006 Build capacity of AsRSG members on Red List and Green Status assessment.

T-007 Increase membership of AsRSG to about 100 by 2025 by including budding young professionals of diverse backgrounds with the ability to strengthen AsRSG.

COMMUNICATE

T-008 Hold the 3rd Asian Rhino Range States Meeting in Nepal in 2022.

Activities and results 2021

PLAN

Planning

T-003 (KSR 8)

Number of conservation plans/strategies developed: 0

Result description: Due to the COVID-19 pandemic, this task has been going slowly. As such, the Greater One-horned Rhino Conservation Plan is expected to be completed by the end of 2022 or by early 2023, after internal review by two range country government officials and four independent AsRSG members with expertise working for Greater One-horned Rhinos in India and Nepal.

T-004 (KSR 8)

Number of conservation plans/strategies developed: 0

Result description: Dialogue to assist Indonesia to prepare the National Plan for Javan and Sumatran Rhino initiated in 2021.

ACT

Technical advice

T-005 (KSR 10)

Number of technical consultations provided to support conservation actions: Ongoing.

Result description: AsRSG members assisted range country government agencies to assess rhino population in the rhino bearing areas and provided inputs to continue to build and strengthen rhino population and quality of rhino habitat. Invasive alien plant species have been removed through proactive leadership of the rhino bearing area's management authority with technical inputs from AsRSG members.

NETWORK

Capacity building

T-006 (KSR 2)

Number of people trained in assessment tools: 0

Result description: Discussion to gauge interest from members was initiated in 2021 with an aim to start training sessions in 2022.



Greater One-horned Rhino (*Rhinoceros unicornis*) in Pobitora WLS
Photo: Bibhab Talukdar



Greater One-horned Rhino (*Rhinoceros unicornis*) in Kaziranga for Translocation
Photo: Bibhab Talukdar

Membership

T-007 (KSR 2)

Number of SSC members recruited: 10

Result description: Ten new members were recruited for the AsRSG.

COMMUNICATE

Communication

T-008 (KSR 12)

Number of scientific events organised: 0

Result description: The Department of National Parks and Wildlife Conservation, Government of Nepal, has agreed to host the 3rd Asian Rhino Range States Meeting in the second part of 2022 (25% achieved).

Acknowledgements

International Rhino Foundation (IRF) has been supporting rhino research and conservation since its inception and is a regular supporter of AsRSG. Aaranyak has been hosting the office of the Chair of AsRSG and provides all possible secretarial support. WWF has been a regular supporter of AsRSG's activities in India.

Summary of achievements

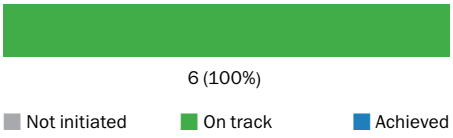
Total number of targets 2021–2025: 6

Geographic regions: 6 Asia

Actions during 2021:

Plan:	2 (KSR 8)
Act:	1 (KSR 10)
Network:	2 (KSR 2)
Communicate:	1 (KSR 12)

Overall achievement 2021–2025:



2021 Report

IUCN SSC Asian Wild Cattle Specialist Group



SOCIAL MEDIA AND WEBSITE
Facebook: IUCN Asian Wild Cattle Specialist Group
Instagram: @iucn_wildcattle
Twitter: @IUCN_WildCattle
Website: https://www.asianwildcattle.org

CHAIR
James Burton
North of England Zoological Society, Re:wild, Center for Conservation of Tropical Ungulates, UK

RED LIST AUTHORITY COORDINATOR
Thomas Gray
WWF, Cambodia

NUMBER OF MEMBERS
97

Mission statement

The mission of the Asian Wild Cattle Specialist Group (AWCSG) is to promote the long-term conservation of the Asian wild cattle species and their habitats by means of information-sharing, identification of conservation priorities and facilitation/delivery of these priority actions through collaborative conservation work.

Projected impact 2021–2025

In this quadrennium, we are working with partners in Indonesia to collect genetic and population trend data that will inform a Population and Viability Analysis for Javan Banteng (*Bos javanicus*) and Anoa (*Bubalus depressicornis* and *B. quarlesi*). The longer-term goal, in future quadrennia, is metapopulation management for these taxa to ensure they are viable. We coordinate *ex situ* partners globally to increase breeding to maintain the greatest genetic diversity for these taxa as a backup population. For Tamaraw (*Bubalus mindorensis*), we support the implementation of the Tamaraw Conservation and Management Plan by the Philippine government's Tamaraw Conservation Program that will achieve more effective conservation, as well as with partners contributing to population monitoring and protection of Tamaraw. For other Asian wild cattle species, with our partners, we strive to improve their conservation status as much as possible through direct action and raising awareness about their status.

Targets 2021–2025

ASSESS

T-004 Complete global Red List assessment for Wild Water Buffalo (*Bubalus arnee*) and review need for other species assessments.

T-005 Assess population trend of Tamaraw in Iglit-Baco Natural Park annually.

T-010 Monitor population trend of Banteng in Alas Purwo National Park over two years.

T-011 Monitor population trend of Anoa in one protected area over two years.

T-012 Coordinate Saola (*Pseudoryx nghetinhensis*) detection efforts to improve data collection and dissemination.

T-013 Publish a paper on population genetics of Anoa.

T-014 Publish a paper on patterns and trends in wildlife hunting in Sulawesi.

PLAN

T-001 Complete the 3rd Global Species Management Plan (GSMP) masterplan document for Anoa, Banteng and Babirusa.

T-007 Develop Saola Working Group partners' 1–2 year strategy.

ACT

T-009 Improve protection for Tamaraw through effective patrolling and improved protected area management.

NETWORK

T-006 Improve capacity of conservation breeding facility staff through training (to achieve improved animal welfare).

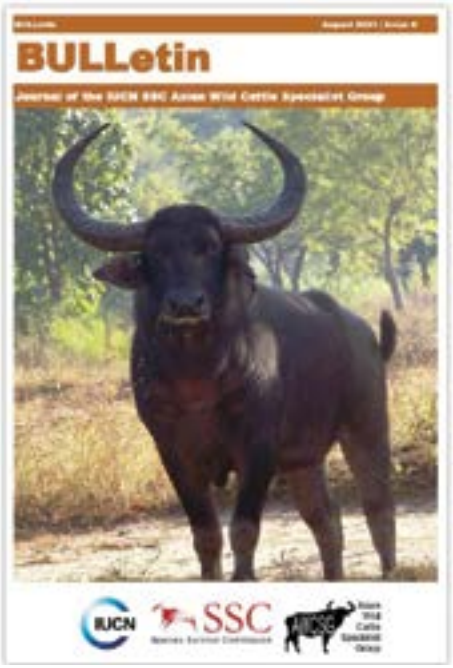
T-008 Implement the Tamaraw Conservation Management and Action Plan coordinated by Tamaraw Conservation Coordination Council (through the Philippine government).

COMMUNICATE

T-002 Publish four Action Indonesia GSMP newsletters and four annual reports.

T-003 Publish six Asian Wild Cattle Specialist Group newsletters.

BULLetin issue 6





Surabaya Zoo staff wearing anoa doll for ice breaking
Photo: Surabaya Zoo

Activities and results 2021

ASSESS

Research activities

T-005 (KSR 5)

Number of research projects completed or supported by SSC members per taxonomic group and region: 1

Result description: Population monitoring of Tamaraw was conducted in Mts Iglit-Baco Natural Park (MIBNP) in October 2021 with partners DENR Tamaraw Conservation Program, D'ABOVILLE Foundation, MIBNP staff and local volunteers.

T-010 (KSR 5)

Number of research projects completed or supported by SSC members per taxonomic group and region: 0

Result description: One season of camera trapping was completed for Banteng across Alas Purwo National Park, by Park staff, with data analysis underway.

T-012 (KSR 5)

Number of publications produced in internal journals of SSC groups: 0

Result description: Range-wide Saola Knowledge Review document drafted with input from partner organisations in Viet Nam and Laos. The review will be completed in 2022.

NETWORK

Capacity building

T-006 (KSR 2)

Number of people trained in conservation action: 6

Result description: The addition of six Indonesian zoo staff to the Action Indonesia Husbandry Working Group will greatly help design and delivery of relevant animal welfare training to many Indonesian zoos in the rest of the quadrennium.

Synergy

T-008 (KSR 4)

Number of governments supported to develop species conservation policies: 1

Result description: An interim review of the Tamaraw Conservation Management and Action Plan has been started by The Tamaraw Conservation Program, with AWCSG input. This will help identify gaps in implementation and ways to support partners with implementation.

COMMUNICATE

Communication

T-002 (KSR 12)

Number of Species e-bulletin, Save Our Species newsletter, SSC Groups' newsletter editions produced: 1

Result description: One GSMP newsletter was published in July 2021.

T-003 (KSR 12)

Number of Species e-bulletin, Save Our Species newsletter, SSC Groups' newsletter editions produced: 1

Result description: One AWCSG Bulletin Newsletter was published in Aug 2021.

Acknowledgements

We would like to thank the IUCN SSC team for their support and leadership in 2021: Jon Paul Rodriguez, Kira Mileham, Nahomy De Andrade, Orlando Salamanca and Angela Yang. We acknowledge the generosity of donors and technical partners of the AWCSG, in particular Simon Dowell, Scott Wilson, Amy Humphreys and Charlotte Smith at Chester Zoo; Barney Long of Re:wild; Jeff Holland of the Center for Conservation of Tropical Ungulates; and Curby Simerson and Steve Metzler of San Diego Zoo Wildlife Alliance. Thanks to the Species Coordinators and Red List Assessment Coordinator for all their work in 2021: Emmanuel Schultz, Rahul Kaul, Carolina Soto-Navarro, Soutchai Khamphouxay, Lee Xiong, Paul Buzzard, Simon Hedges and Tom Gray. For the Action Indonesia Global Species Management Plan partnership we thank the Indonesia Zoos & Aquariums Association and all members of the Working Groups for their collaboration. Relating to the Saola Working Group, we thank WWF Viet Nam and IUCN Lao PDR for very effectively hosting the Saola Working Group National Coordinators in 2021. We are grateful to D'ABOVILLE Foundation, the Philippine Government, and other NGOs and partners that continue to help conserve Tamaraw. Thanks also goes to all the active members of the AWCSG for their continuing hard work to conserve these species.

Summary of achievements

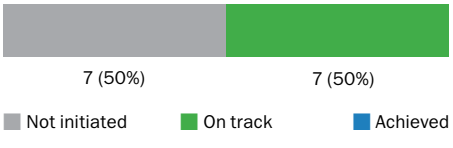
Total number of targets 2021–2025: 14

Geographic regions: 2 Global, 12 Asia

Actions during 2021:

Assess: 3 (KSR 5)
Network: 2 (KSR 2, 4)
Communicate: 2 (KSR 12)

Overall achievement 2021–2025:



IUCN SSC Australasian Marsupial and Monotreme Specialist Group





SOCIAL MEDIA AND WEBSITE
Twitter: @OzMMSSG

CO-CHAIR
Diana Fisher
University of Queensland, Brisbane, Australia

CO-CHAIR
John Woinarski
Charles Darwin University, Darwin, Australia

RED LIST AUTHORITY COORDINATOR
Christopher N. Johnson
School of Zoology, University of Tasmania, Hobart, Australia

NUMBER OF MEMBERS
13

Mission statement

To enhance the long-term conservation outlook for the marsupials and monotremes of Australia, Papua New Guinea and Indonesia.

Projected impact 2021–2025

Major focal areas in the 2021–2025 period will be: further increasing conservation efforts for marsupials and monotremes in Papua New Guinea and Indonesia, and completing conservation status assessments for species needing updated assessment, particularly species affected by extensive and severe wildfires in eastern and southern Australia in 2019–2020. The group will also contribute to recovery of fire-affected species, those at risk from other climate change-related events such as increasing heatwaves and flooding, and promote research on the status of Data Deficient species and recently described species.

Targets 2021–2025

ASSESS

T-001 Undertake new assessments for the species most affected by the catastrophic 2019–2020 Australian wildfires.

T-002 Undertake new assessments for poorly known marsupials in Papua New Guinea and Indonesia, including Peleng Cuscus (*Strigocuscus pelengensis*).

T-003 Undertake assessments of a set of taxonomically re-defined Australian marsupial species (e.g. Greater Glider, *Petauroides volans*; Sugar Glider, *Petaurus breviceps*).

T-004 Undertake new Red List assessments for high-profile Australian marsupials (Koala, *Phascolarctos cinereus*) and monotremes (Platypus, *Ornithorhynchus anatinus*), based on new information.

PLAN

T-005 Develop conservation action plan (and survey) for *Zaglossus* species.

ACT

T-007 Assist in the recovery of Australian marsupials most affected by 2019–2020 fires.

NETWORK

T-006 Enhance or expand group membership, including an annual or biennial meeting.

COMMUNICATE

T-008 Hold annual or biennial meetings of SSC members.

Activities and results 2021

ASSESS

Green Status

T-004 (KSR 6)

Number of new Green Status of Species assessments completed per species group, region, and biological realm: 1

Result description: Green Status assessment completed and published for Burrowing Bettong (*Bettongia lesueur*), in collaboration with the Green Status of Species Working Group. Red List assessments for Koala and Platypus will follow and be concordant with current national assessment through Australia's Environment Protection and Biodiversity Conservation Act (expected mid-2022).

Red List

T-001 (KSR 5)

Number of species significantly affected by the 2019–2020 Australian fires that have consequently had their Red List assessments updated: 0

Result description: Co-authored reports and papers provided estimates of proportional range burnt, and proportions of the population lost, in the 2019–2020 Australian megafires, for a large set of fire-affected Australian marsupials and monotremes. These assessments provide



Endangered Eastern Quoll (*Dasyurus viverrinus*)
Photo: Menna Jones



Stripe-faced Dunnart (*Sminthopsis macroura*), Western Australia
Photo: Diana Fisher

a robust evidence base that about five species are now eligible for listing and another five for uplisting because of the impacts of these fires (Legge, S., et al. 2021. *Estimates of the impacts of the 2019–20 fires on populations of native animal species*. Project 8.3.2 report. Brisbane, Australia: NESP Threatened Species Recovery Hub. Available at: https://www.nespthreatenedspecies.edu.au/media/bx2p40w0/8-3-2-estimates-of-the-impacts-of-the-2019-2020-fires-on-populations-of-native-animal-species-report_v10.pdf). This information has also now been published in a peer-reviewed paper: Legge, S., et al. 2022. The conservation impacts of ecological disturbance: Time-bound estimates of population loss and recovery for fauna affected by the 2019–2020 Australian megafires. *Global Ecology and Biogeography* https://doi.org/10.1111/geb.13473

T-002 (KSR 6)

Number of global Red List reassessments completed: 0

Result description: We are supporting field assessments of status and threats for Talaud Bear Cuscus (*Ailurops melanotis*) in Sulawesi (led by Sheherazade Jayadi, PROGRES Indonesia) and Gebe Cuscus (*Phalanger alexandrae*) on Gebe Island, Indonesia (led by Nurul Inayah, Perhimpunan Biologi Indonesia).

T-003 (KSR 6)

Number of new national Red List assessments published: 0

Result description: Assessments will follow from recent taxonomic reviews (e.g. Catullo, R.A., et al. (2021). 'Benchmarking taxonomic and genetic diversity after the fact: lessons learned from the catastrophic 2019–2020 Australian bushfires'. *Frontiers in Ecology and Evolution* 9:645820. https://doi.org/10.3389/fevo.2021.645820; Cremona, T., et al. (2021). 'Integrative taxonomic investigation of *Petaurus breviceps* (Marsupialia: Petauridae) reveals three distinct species'. *Zoological Journal of the Linnean Society* 191:503–527. https://doi.org/10.1093/zoolinnean/zlaa060; McGregor, D.C., et al. (2020). 'Genetic evidence supports three previously described species of greater glider, *Petauroides volans*, *P. minor*, and *P. armillatus*'. *Scientific Reports* 10:19284. https://doi.org/10.1038/s41598-020-76364-z). The Australian Mammal Taxonomy Consortium (AMTC) is an affiliated body of the Australian Mammal Society. One of its major aims is to promote stability and consensus in the use of Australasian mammal scientific names via updatable online species lists approved by AMTC members, thereby supporting more rigorous study of mammals and their biodiversity. The AMTC is providing support for taxonomic decisions (https://australianmammals.org.au/publications/amtc-species-list).

ACT

Conservation actions

T-007 (KSR 10)

Number of species with increased or prevented decrease in population or range size, as a result of conservation actions: 0

Result description: Co-authored reports and papers provided estimates of proportional range burnt, and proportions of the population lost, in the 2019–2020 Australian megafires, for a large set of fire-affected Australian marsupials and monotremes. These assessments provide a robust evidence base that about five species are now eligible for listing and another five for uplisting because of the impacts of these fires (Legge, S., et al. 2021. *Estimates of the impacts of the 2019–20 fires on populations of native animal species*. Project 8.3.2 report. Brisbane, Australia: NESP Threatened Species Recovery Hub. Available at: https://www.nespthreatenedspecies.edu.au/media/bx2p40w0/8-3-2-estimates-of-the-impacts-of-the-2019-2020-fires-on-populations-of-native-animal-species-report_v10.pdf). Co-Chair Woinarski is co-editing a book on the impacts of the 2019–2020 Australian wildfires, which also includes chapters on the management responses and recommendations to reduce comparable future risks and impacts.

NETWORK

Membership

T-006 (KSR 2)

Number of SSC members recruited: 13

Result description: Current membership is 13.

COMMUNICATE

Scientific meetings

T-008 (KSR 12)

Number of meetings held: 0

Result description: We have organised annual meetings to be held as part of the Australian Mammal Society annual conference.

Acknowledgements

We thank the Australian Mammal Society, the Wild Pig Specialist Group, Wildlife Conservation Society Indonesia, EDGE, Australasian Marsupial and Monotreme Specialist Group members who have provided photos, members who have provided information on bushfire effects on marsupials and monotremes, members who have facilitated communication with researchers and communities in Papua New Guinea and Indonesia, the IUCN Red List Unit, the Australian Committee for IUCN, Jon Paul Rodríguez and the SSC, and Angela Yang.

Summary of achievements

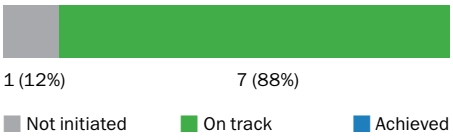
Total number of targets 2021–2025: 8

Geographic regions: 3 Asia, 8 Oceania

Actions during 2021:

Assess: 4 (KSR 5, 6)
Act: 1 (KSR 10)
Network: 1 (KSR 2)
Communicate: 1 (KSR 12)

Overall achievement 2021–2025:



IUCN SSC Bat Specialist Group





SOCIAL MEDIA AND WEBSITE
Facebook: @IUCNBatSpecialistGroup
Website: https://www.iucnbsg.org

CO-CHAIR
Tigga Kingston (Old World)
Texas Tech University, Lubbock, Texas, US

CO-CHAIR
Rodrigo Medellin (New World)
Instituto de Ecología, UNAM, Ciudad Universitaria, Mexico

RED LIST AUTHORITY COORDINATORS
Dave Waldien (Old World)
Christopher Newport University, Newport News, Virginia, US
Sergio Solari (New World)
Instituto de Biología, Universidad de Antio quia, Medellín, Colombia

NUMBER OF MEMBERS
75

Mission statement

(1) To contribute to the mission and goals of IUCN SSC.

(2) To ensure the maintenance or recovery of populations of threatened bat populations.

(3) To ensure that other bat species remain at a favourable conservation status.

Projected impact 2021–2025

By the end of 2025, we will position bat conservation for success with: (1) fully updated Red List assessments and processes for regional engagement in the assessment process; (2) an application to CITES for listing of two species that are traded as souvenirs, and awareness and experience of the data gathering and proposal process for future applications; (3) adoption by the bat research community of field hygiene practices that minimize pathogen pollution by people and the potential for bat-human transmission of bat-borne microbes; (4) increased public awareness of the conservation plight and ecological significance of bats.

Targets 2021–2025

ASSESS

T-006 Trade in Bat Species Working Group (TBS WG): gather data to support application to CITES for two distinctive 'souvenir' species.

T-009 Conduct Red List Assessments of Old World Bats.

PLAN

T-002 Human Dimensions of Bat Conservation Working Group (HDBC WG): develop strategies to manage human attitudes and behaviours towards bats in the post-COVID-19 era.

T-004 Bats and One Health Working Group (OH WG): provide advice to the research and conservation community about safe practices for bat research and the role of bats in emerging infectious disease.

ACT

T-007 Trade in Bat Species Working Group (TBS WG): work with CITES representatives to submit application for two distinctive species.

NETWORK

T-001 Establish a Human Dimensions of Bat Conservation Working Group (HDBC WG).

T-003 Establish a Bats and One Health Working Group (OH WG).

T-005 Establish a Trade in Bat Species Working Group (TBS WG).

T-008 Develop an online Red List assessment training pipeline specific to bats.

Activities and results 2021

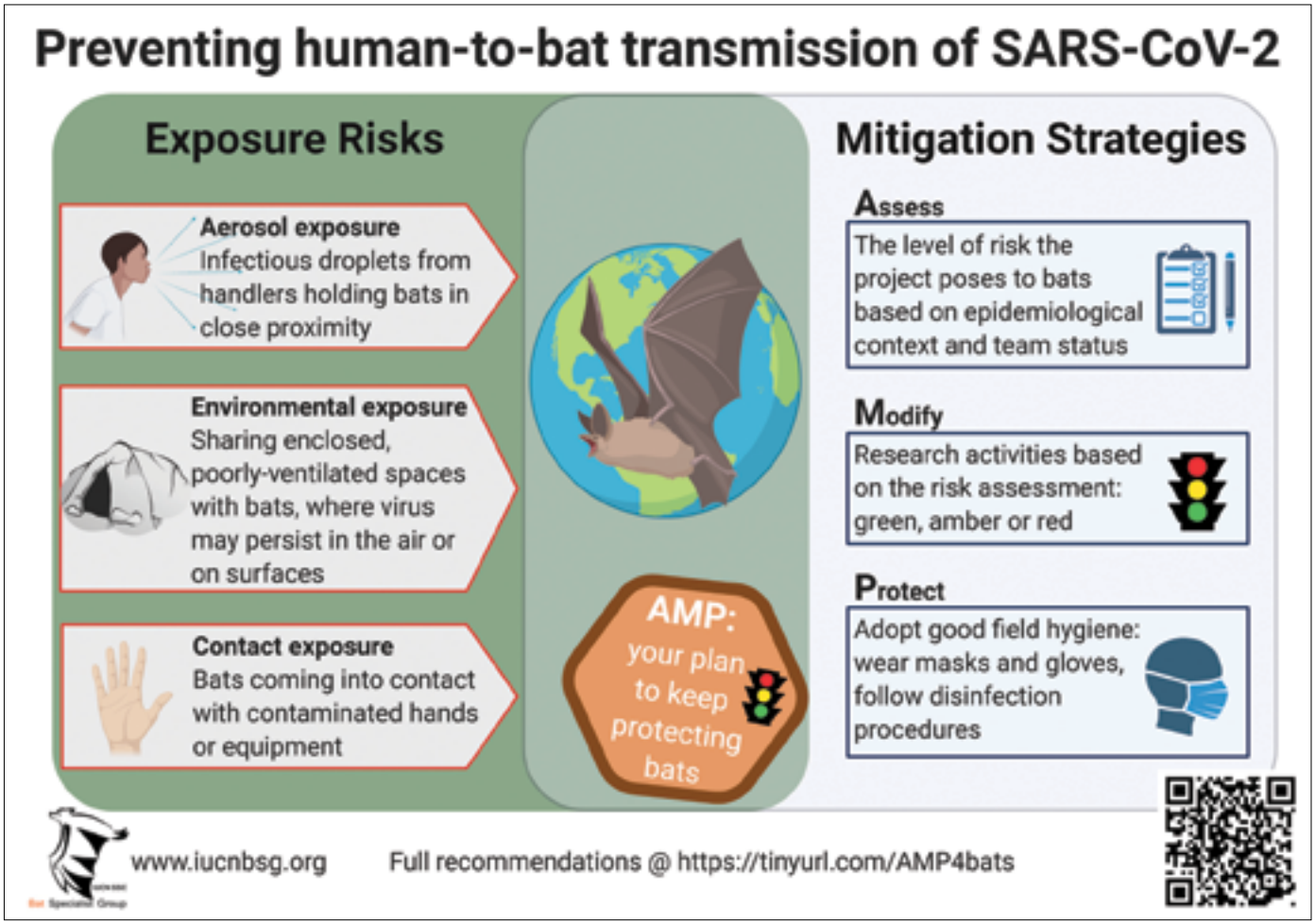
ASSESS

Planning

T-006 (KSR 5)

Number of CITES applications: 0

Result description: Materials were gathered and letters sent to countries that might support an application to the Animals Committee for the Painted Woolly Bat (*Kerivoula picta*). We were rather short on time, and none of the countries followed up on the opportunity. The TBS WG continues to pull together material documenting trade in species as souvenirs and has worked



with GBatNet to establish a Bat Exploitation Portal to gather data (https://survey123.arcgis.com/share/8e8b3a683a944a60aec1d2078d803712).

Red List

T-009 (KSR 6)

Number of global Red List reassessments completed: 167

Result description: A total of 167 assessments/reassessments of Old World Bats were published in 2021.

PLAN

Planning

T-004 (KSR 8)

Number of technical documents to support the development of conservation plans/strategies: 4

Result description: (1) The OH WG provided updated recommendations (v2.0) for minimising the risk of human-bat transmission of SARS-CoV-2 for researchers, rehabbers and cavers (https://www.iucnbsg.org/uploads/6/5/0/9/6509077/map_recommendations_for_rehabbers_30_june_2021_1_.pdf); (2) Presentations on the recommendations for working with bats and field hygiene were given at the National Geographic Society's Explorers Festival (June 2021) and to other Specialist Groups (June 2021); (3) The OH WG published a paper intended to improve communication about zoonotic diseases and minimise misperceptions arising from inappropriate use of key terms (Shapiro, J.T., et al. (2021). 'Setting the Terms for Zoonotic Diseases: Effective Communication for Research, Conservation, and Public Policy'. *Viruses* 13(7):1356. https://doi.org/10.3390/v13071356); (4) A presentation promoting the correct use of terms, based on the publication, was given by OH WG members at the 69th Wildlife Disease/14th European Wildlife Disease Association Conference (31 August–2 September 2021).

Policy

T-002 (KSR 9)

Number of documents provided to support/guide policy making: 1

Result description: (1) The HDBC WG published a paper in *Biological Conservation* intended to guide human-dimensions bat research (Straka, T.M., Coleman, J., MacDonald, E.A. and Kingston, T. (2021). 'Human dimensions of bat conservation – 10 recommendations to improve and diversify studies of human-bat interactions'. *Biological Conservation* 262:109304. https://doi.org/10.1016/j.biocon.2021.109304); (2) The WG initiated a study to understand the drivers of bat researchers' intention to adopt field hygiene practices that protect against human-bat and bat-human transmission of pathogens. The study is being conducted in a Theory of Planned Behaviour framework. Phase 1, in which we gathered data from a subset of researchers on beliefs about hygiene practices, is complete and we are now developing the full questionnaire; (3) The HDBC WG initiated and hosted a panel at the Royal Anthropological Institute's 'Anthropology and Conservation' Conference in October 2021. Three accepted papers laid the foundation for a lively panel discussion.

NETWORK

Agreements

T-001 (KSR 3)

HDBC Working Group established and meets regularly (at least 1 x per month): achieved

Result description: The HDBC Working Group was established and comprises a core of five regular members, plus several others who join meetings on an ad hoc basis. The HDBC WG is chaired by Bat Specialist Group (BSG) Co-Chair Kingston and meets weekly.

Preventing human-to-bat transmission of SARS-CoV-2

for cavers

Exposure Risks

Aerosol exposure
Infectious droplets from cavers in close proximity to bats

Environmental exposure
Sharing enclosed, poorly-ventilated spaces with bats, where virus may persist in the air

Contact exposure
Cavers coming in contact with bats



MAP your plan to prevent transmission to cave-dwelling bats!

Mitigation Strategies

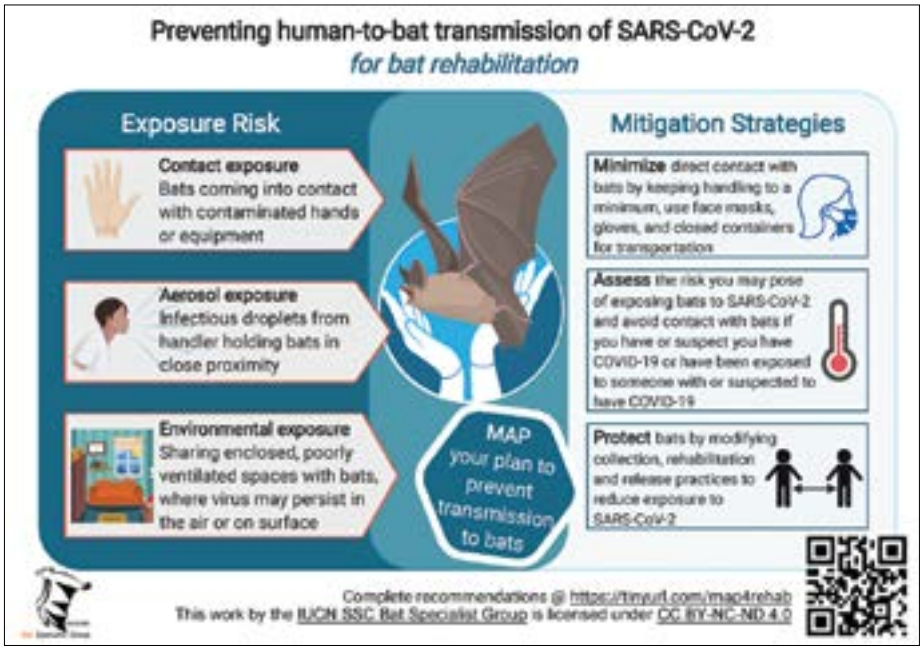
Minimize
Plan routes to avoid bat aggregations, wear mask if passing bats is unavoidable



Assess
The level of risk the trip poses to bats, avoid caving if you have been exposed or have symptoms

Protect
Adopt best caving practices, wear masks if passing bats, avoid crowding, clean and disinfect equipment

This work by the IUCN SSC Bat Specialist Group is licensed under CC BY-NC-ND 4.0.
Full recommendations version 2.0 @ https://tinyurl.com/bsg-pubs



Capacity building

T-008 (KSR 2)

Number of people trained in assessment tools: 7

Result description: In 2021, we focused on training people with the existing tools, specifically the Conservation Training on Red List Assessments (https://www.conservationtraining.org/course/index.php?categoryid=23). Seven people completed this training. This is giving insights into how we might simplify and specify the process for bats. Red List Authority Coordinator Dave Waldien conducted an initial workshop to further inform development.

Synergy

T-003 (KSR 3)

OH WG assesses and advises the bat research and conservation community about safe practices for bat research and the role of bats in emerging infectious diseases: achieved

Result description: The BSG Bats and One Health Working Group was established in 2021. It was largely drawn from the membership of the ad hoc working group assembled in 2020 to address the risk of human-bat transmission of SARS-CoV-2. The multidisciplinary Group includes virologists, ecologists, conservation biologists and disease ecologists, among others, and is chaired by BSG Co-Chair Kingston. The group meets weekly and has a stated vision and mission. The Vision: a world with science-based understanding of the connections between the health of bats, people and ecosystems. The Mission: to advance multidisciplinary integrative research and informed communication to promote bat conservation as essential to one health. See also: https://www.iucnbsg.org/bat-onehealth-working-group.html.

T-005 (KSR 3)

TBS WG established and meets at least 1 x per month: ongoing

Result description: The TBS Working Group was established in 2021, with an initial goal of collating material to support applications to the 31st Animals Committee of CITES.

Acknowledgements

Secretariat of the Pacific Regional Environment Programme (SPREP), Global Union of Bat Diversity Networks (GBatNet), Australasian Bat Society (ABS), Birdlife – Oceania, Texas Tech University, Christopher Newport University, Western Sydney University, Vanuatu Environmental Science Society, NatureFiji-MareqetiViti, Adelaide University, Taronga Conservation Society Australia, Institut Agronomique néo-Calédonien (IAC), Kainake Project, the hundreds of people that contributed to the successful Red List assessments of 233 Old World bats, Rolex Awards for Enterprise, RELCOM, National Geographic Society, CYTED Ibero-American Programme on Science and Technology for Development, and The Whitley Fund for Nature.

Summary of achievements

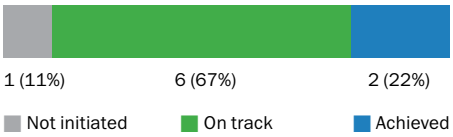
Total number of targets 2021–2025: 9

Geographic regions: 9 Global

Actions during 2021:

Assess: 2 (KSR 5, 6)
Plan: 2 (KSR 8, 9)
Network: 4 (KSR 2, 3)

Overall achievement 2021–2025:



2021 Report

IUCN SSC Bear Specialist Group





SOCIAL MEDIA AND WEBSITE
Facebook: IUCN SSC Bear Specialist Group
Website: www.globalbearconservation.org (under construction)

CO-CHAIR
Dave Garshelis
Cohasset, Minnesota, US

CO-CHAIR
Michael Proctor
Birchdale Ecological, Kaslo, BC, Canada

RED LIST AUTHORITY COORDINATORS
Bruce McLellan
Darcy, British Columbia, Canada (retired)
Karine Pigeon
British Columbia Ministry of Lands, Water & Resource Stewardship, Smithers BC, Canada

NUMBER OF MEMBERS
244

Mission statement

The Bear Specialist Group (BSG) strives to promote the conservation of bears living in their natural habitats across their worldwide distribution. We do this by gaining, synthesising and disseminating information; aiding, promoting and supporting conservation initiatives; providing technical assistance and building capacity of those involved or interested in bear conservation; and becoming directly involved in issues that reduce threats and foster the conservation of any of the seven species of terrestrial bears.

Projected impact 2021–2025

We anticipate making significant gains in implementing the Sun Bear Conservation Action Plan, creating action plans and improved range maps for other bear species, disseminating information (published articles in journals and newsletters, webinars, and presentations at conferences), and increasing the breadth of our leadership through enhanced opportunities for members to partake in higher roles.

Targets 2021–2025

ASSESS

T-001 Finish bear bile situation analysis.

T-009 Refine range map for Sloth Bears (*Melursus ursinus*).

T-012 Assess Red List status for Sun Bears (*Helarctos malayanus*) in Viet Nam.

PLAN

T-007 Develop conservation action plan for Asiatic Black Bears (*Ursus thibetanus*).

T-011 Develop conservation action plan for Sun Bears in Viet Nam.

ACT

T-005 Implement Sun Bear Action Plan.

T-006 Develop monitoring protocols for Asian bears.

NETWORK

T-004 Secure long-term viable funding base.

T-008 Create training modules to increase capacity in bear conservation.

T-010 Increase the breadth and diversity of the BSG.

COMMUNICATE

T-002 Finish website.

T-003 Ensure regular communication with the bear community.

Activities and results 2021

ASSESS

Red List

T-009 (KSR 6)

Improved range map created: 0

Result description: We designed a new system for gathering data and creating a map (based on Forest Department Ranges as sampling units) and started contacting field people to obtain presence/absence data.

Research activities

T-001 (KSR 5)

Number of scientific publications about species research that acknowledge SSC affiliation: 1

Result description: We published one paper: Hinsley, A., et al. (2021). 'Combining data from consumers and traditional medicine practitioners to provide a more complete picture of Chinese bear bile markets'. *People and Nature* 3:1064–1077. https://doi.org/10.1002/pan3.10249. In addition, there is one paper in review and one paper in draft form.



Sloth Bear (*Melursus ursinus*) with cub, Gujarat, India, site of intensive conservation program
Photo: P. Malemath



Jessore Sloth Bear Sanctuary, Gujarat, India
Photo: N. Dharaiya

ACT

Conservation actions

T-005 (KSR 10)

Number of actions addressing major drivers/emerging threats of species or population loss: 5

Result description: The Sun Bear Action Plan has five main goals, and actions are in progress for each goal: (Goal 1) eliminate illegal exploitation of Sun Bears – several papers published, much research underway in demand reduction; (Goal 2) protect and restore Sun Bear habitats and populations across the species' natural range – several papers published and research underway as to habitat essentials; (Goal 3) devise and employ methods to reliably monitor trends in Sun Bear populations – five papers in press, and an Expert Team created to deal specifically with this goal; (Goal 4) maximise the contribution of *ex situ* Sun Bear – prospectus published on priority topics for *ex situ* research, and database of relevant references in progress; (Goal 5) increase cross-sectoral support and collaboration for Sun Bear conservation populations to conservation – two books published, and BBC documentary all focused on Sun Bears.

T-006 (KSR 10)

Number of technical documents provided to support conservation actions: 5

Result description: Five papers were submitted to *Global Ecology and Conservation* in mid-November (to be published in 2022). Also, we presented these papers at the International Congress for Conservation Biology. We are in the planning stages of a final summary paper, and eventually a manual.

NETWORK

Capacity building

T-008 (KSR 2)

Number of training modules produced: 7

Result description: We held seven webinars and posted them on YouTube channel.

Membership

T-010 (KSR 2)

Number of SSC members recruited: 50

Result description: We recruited 50 new BSG members, including some un-represented range countries.

Number of Expert Teams added for North America and Asian bear monitoring: 2

Result description: We added expert teams for North American bears and Asian Bear monitoring.

Synergy

T-004 (KSR 1)

Number of 'funding' partners established and maintained: 0

Result description: We developed a partnership with an NGO where we can apply for conservation funds.

COMMUNICATE

Communication

T-002 (KSR 12)

Number of web pages developed and maintained: ongoing

Result description: We collected photos and information and are working with a company on the website.

T-003 (KSR 12)

Number of published articles per year: 20

Result description: We published 20 articles in *International Bear News*.

Acknowledgements

We thank the Taiwan Black Bear Conservation Association for support.

Summary of achievements

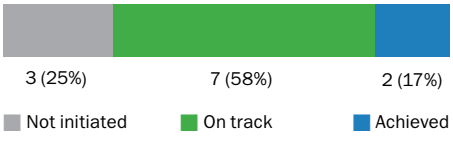
Total number of targets 2021–2025: 12

Geographic regions: 5 Global, 7 Asia

Actions during 2021:

Assess: 2 (KSR 5, 6)
Act: 2 (KSR 10)
Network: 4 (KSR 1, 2)
Communicate: 2 (KSR 12)

Overall achievement 2021–2025:



IUCN SSC Bison Specialist Group







CHAIR
Glenn Plumb
National Park Service, US (retired)

VICE CHAIR
Dustin H. Ranglack (American Bison Section)
University of Nebraska-Kearney, US

VICE CHAIR
Kajetan Perzanowski (European Bison Section)
Catholic University of Lublin, Poland (retired)

RED LIST AUTHORITY COORDINATOR
Greg Wilson (American Bison Section)
Parks Canada, Elk Island National Park, Canada

NUMBER OF MEMBERS
79

Mission statement

The Bison Specialist Group (BSG) is committed to the development of comprehensive and viable strategies and management actions to enhance conservation and ecological restoration of European Bison (*Bison bonasus*) and American Bison (*Bison bison*), including Plains Bison (*Bison bison bison*) and Wood Bison (*Bison bison athabascae*), as wildlife where feasible across their original range. The BSG operates under the authority of the Species Survival Commission of the International Union for Conservation of Nature to conduct comprehensive assessments, provide evidence-based advice and support, and communication and outreach activities in support of this mission.

Projected impact 2021–2025

The Bison Specialist Group will undertake collaborative analyses and produce collaborative publications intended to improve conservation planning and action for the American and European Bison species. Of special emphasis will be a new range-wide conservation action plan for the European Bison and continental meta population management for the American Bison.

Targets 2021–2025

ASSESS

T-001 Complete a Green Status assessment for the American Bison (*Bison bison*).

T-002 Complete a Red List assessment for the American Bison (*Bison bison*).

T-005 Reassess the historic range of the American Bison (*Bison bison*).

T-006 Complete a global census of the genus *Bison* across all stewardship sectors.

PLAN

T-003 Complete a new conservation action plan for the European Bison (*Bison bonasus*).

ACT

T-007 Advise regionally for the American Bison (*Bison bison*).

T-008 Advise regionally for the European Bison (*Bison bonasus*).

T-009 Provide knowledge support for new restoration actions for the American Bison (*Bison bison*).

T-010 Provide knowledge support for new restoration actions for the European Bison (*Bison bonasus*).

NETWORK

T-004 Convene a new BSG Indigenous/Tribal Knowledge Working Group for the American Bison (*Bison bison*).

Activities and results 2021

ASSESS

Green Status

T-001 (KSR 6)

Number of new Green Status of Species assessments completed: 1

Result description: Luke Rogers completed a species Green Status report that was submitted to IUCN for review and publication in 2022.

Red List

T-002 (KSR 6)

Number of national Red List reassessments published: 0

Result description: In fall 2021, Dr Greg Wilson, American Bison Red List Authority Coordinator, convened a trilateral team comprised of national, provincial/state and First Nation/Tribe representatives from Canada, United States and Mexico to prepare an updated Red List assessment. The team is undertaking to review all previous Red List assessment criteria and information and compile updated species status information.



American Bison (*Bison bison*) at the Henry Mountains, Utah, US
Photo: Dustin Ranglack

Research activities

T-005 (KSR 5)

Number of scientific publications about species research that acknowledge SSC affiliation: 1

Result description: A manuscript has been completed and submitted as a Data Paper to the journal *Ecology*. The project combined all validated bison location data across palaeontology, archaeology and historical ecology records for North America back to 200,000 years before present and created a new convex polygon extent of occurrence (EEO) map at the benchmark date of 1500 CE, which will be used in a new Red List assessment.

T-006 (KSR 5)

Number of research projects completed or supported by SSC members per taxonomic group and region: 1

Result description: Luke Rogers completed the first global census for the genus *Bison* across all stewardship sectors, which was published as his master's thesis by the University of Nebraska at Kearney under Dr Dustin Ranglack, BSG Vice Chair for the American Bison section.

PLAN

Planning

T-003 (KSR 8)

Number of conservation plans/strategies developed: 0

Result description: By 2021, there were ca. 6,800 European Bison (*Bison bonasus*) in 47 free-ranging subpopulations across 10 countries. The 2020 IUCN Red List assessment (Plumb, G., Kowalczyk, R. and Hernandez-Blanco, J.A. 2020. Bison bonasus. *The IUCN Red List of Threatened Species* 2020: e.T2814A45156279. https://dx.doi.org/10.2305/IUCN.UK.2020-3.RLTS.T2814A45156279.en. Accessed on 16 June 2022.) re-categorised the species from Vulnerable to Near Threatened, with ongoing threats highlighted (low genetic diversity, small population size and habitat fragmentation). Progress has been made in improving knowledge about the species and in implementing actions that have increased its abundance and distribution, yet there is a diversity of viewpoints on what future success for the species might look like. Consequently, the Bison Specialist Group, European Association of Zoos and Aquaria, European Bison Conservation Center, Rewilding Europe, WWF, Tierpark Berlin,



American Bison (*Bison bison*) calf
at Yellowstone National Park
Photo: Dustin Ranglack

European Bison (*Bison bonasus*)
Photo: Rafal Kowalcyzk



European Bison at dawn
Photo: Rafal Kowalcyzk



Humboldt University–Berlin, and Polish Academy of Sciences–Mammal Research Institute have agreed to collaborate on a European Bison Conservation Action Plan, to be published within the next 2–3 years.

ACT

Conservation actions

T-007 (KSR 10)

Number of technical documents provided to support conservation actions: 1

Result description: During 2021, the BSG informally consulted on bison restoration activities on Tribal lands in the United States.

T-008 (KSR 10)

Number of technical documents provided to support conservation actions: 1

Result description: During 2021, the BSG provided input to the Lithuanian Interior Ministry regarding European Bison Red List conservation status, and informally commented on pending restoration activities in Ukraine.

T-009 (KSR 10)

Number of species with increased or prevented decrease in population or range size, as a result of conservation actions: 1

Result description: During 2021, the BSG informally advised Mexican government agencies regarding the Red List status of the American Bison and consulted with the private sectors in Canada and United States.

T-010 (KSR 10)

Number of species with increased or prevented decrease in population or range size, as a result of conservation actions: 1

Result description: During 2021, the BSG informally consulted on pending restoration activities in Ukraine.

NETWORK

Capacity building

T-004 (KSR 2)

Number of people trained in conservation action: 0

Result description: BSG American Bison section member Dennis Jorgensen has convened a working group and is developing potential action items for 2022–2023.

Acknowledgements

The Bison Specialist Group would like to acknowledge the following individuals, institutions and organisations that significantly contributed to 2021 achievements: Dennis Jorgensen, Dr Dustin H. Ranglack, Dr Rafal Kowalczyk, Keith Aune, Tomasz Pezold Knezevic, Kathy Traylor-Holzer, Molly Grace, Jamie Copsey, Dr Jon Paul Rodriguez, Nahomy de Andrade, Luke Rogers, Noelle Guernsey, World Wildlife Fund Programmes (North America: Northern Great Plains; and Europe: Poland, Ukraine, Germany), the German Federal Agency for Nature Conservation, the Mammal Research Institute of the Polish Academy of Sciences, The Berlin Zoo, The European Aquaria and Zoo Association, Rewilding Europe, the European Bison Conservation Center, the Wildlife Conservation Society/American Bison Society, the InterTribal Buffalo Council, the National Bison Association, Parks Canada, Comisión Nacional de Áreas Naturales Protegidas, the US Department of Interior (National Park Service, US Fish and Wildlife Service, Bureau of Land Management, US Geological Survey, Bureau of Indian Affairs), Defenders of Wildlife, the National Wildlife Federation, the IUCN SSC Conservation Planning Specialist Group, and the University of Nebraska at Kearney.

Summary of achievements

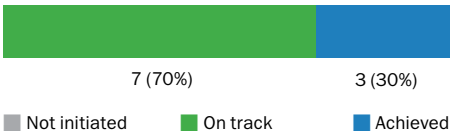
Total number of targets 2021–2025: 10

Geographic regions: 7 America, 3 Europe

Actions during 2021:

Assess: 4 (KSR 5, 6)
Plan: 1 (KSR 8)
Act: 4 (KSR 10)
Network: 1 (KSR 2)

Overall achievement 2021–2025:



IUCN SSC Canid Specialist Group





SOCIAL MEDIA AND WEBSITE
Facebook: @Canidconservation
Instagram: iucncanidsg
Twitter: @WildCanids
Website: https://www.canids.org
YouTube: Wild Canids

CHAIR
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DEPUTY CHAIR
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Wildlife Conservation Research Unit (WildCRU), Zoology Department, University of Oxford, Oxford, UK

RED LIST AUTHORITY COORDINATOR
Michael Hoffmann
Department of Conservation and Policy, Zoological Society of London, London, UK

NUMBER OF MEMBERS
124

Mission statement

Our mission is to promote the long-term conservation of all wild Canidae species throughout their ranges.

Projected impact 2021–2025

By the end of 2025, we aim to make advances in reducing the extinction risk of key threatened canid species. Our focus will be on species currently classified as Critically Endangered, Endangered, Vulnerable and Near Threatened. This aim will be achieved through the implementation of the objectives listed below:
(1) to compile, synthesise and disseminate information on the conservation and status of all canid species across their range, with particular emphasis on species which are threatened or rare; (2) to provide and improve technical information and advice on all matters concerning wild canids, including their status in the wild, the threats they face and their conservation requirements, biology and natural history to all relevant bodies (range state government agencies; non-governmental organisations, including national and international organisations and potential funding bodies; inter-governmental organisations e.g. IUCN, CITES; field projects concerned with canid conservation); (3) to promote and catalyse conservation activities benefiting wild canids, to be carried out by the above, prioritising and coordinating efforts of researchers and conservationists worldwide;
(4) to help raise funding for canid research and conservation and undertake research directly when necessary or appropriate;
(5) to improve management of the common and sometimes troublesome species;
(6) to build capacity through the exchange of ideas, information and technical expertise among the members of the Group.

Targets 2021–2025

ASSESS

T-003 Generate and maintain information on Dhole (*Cuon alpinus*) distribution and identify subpopulations and connectivity to ensure viable populations.

T-010 Conduct Red List reassessments for all threatened canids.

T-012 Carry out regional assessment of Asian wolves.

T-016 Complete Green Status assessment for two canid species.

T-018 Conduct survey of Kit Fox (*Vulpes macrotis*) and Swift Fox (*Vulpes velox*) research and conservation efforts.

T-020 Ensure more effective engagement within Maned Wolf Working Group through developing collaborative actions.

T-022 Conduct regional assessment for Dingoes (*Canis familiaris*; Australia).

T-023 Conduct regional assessment for New Guinea Singing Dog/Highland Wild Dog (*Canis familiaris*; New Guinea).

PLAN

T-001 Implement regional strategies and support new national action plans under the Range Wide Conservation Program for Cheetah and African Wild Dogs.

T-014 Contribute to the new document on guidance to species conservation of the European Commission.

T-019 Contribute to developing the national conservation action plan for Darwin's Fox (*Lycalopex fulvipes*).

ACT

T-002 Protect Ethiopian Wolves (*Canis simensis*) from disease through an integrated disease management strategy, with One Health benefits.

T-013 Rescue Ethiopian Wolves through conservation translocations.

T-017 Advance recovery of Red Wolf (*Canis rufus*) under the US Endangered Species Act.

NETWORK

T-015 Organise annual Island Fox (*Urocyon littoralis*) group meeting.





Left
Canis mesomelas
Photo: Miha Krofel

Right
Dingo
Photo: Ben Allen

T-025 Develop methods to integrate the results of the Global Integrated Collection Assessment and Planning (ICAP) Workshop for Canids and Hyaenids Report.

COMMUNICATE

T-004 Develop context-specific methods for estimating Dhole abundance, demographic and ecological requirements.

T-005 Compile Dhole publications and post on Dhole Conservation Fund website.

T-006 Develop range-wide health canid monitoring capacity and response.

T-007 Evaluate human-Dhole conflict and relevant mitigation methods for use across Dhole distribution range.

T-008 Establish Amazonian Canids listserv.

T-009 Develop Amazonian Canids section in canids.org.

T-021 Endorse and contribute to Arctic Fox (*Vulpes lagopus*) conference in Svalbard.

T-024 Create an Oceanic Canid listserv.

Activities and results 2021

ASSESS

Green Status

T-016 (KSR 6)

Number of new Green Status of Species assessments completed: 1

Result description: Data have been compiled to conduct the Green Status assessment of two canid species.

Red List

T-010 (KSR 6)

Number of national Red List reassessments published: ongoing

Result description: The co-chairs of the Amazonian Canids Working Group (ACWG) are initiating work on the Bush Dog (*Speothos venaticus*) and Short-eared Dog (*Atelocynus microtis*), with primary updates expected in the literature versus any status change.

Research activities

T-003 (KSR 5)

Number of research projects completed or supported by SSC members per taxonomic group and region: 1

Result description: A Google document was created and shared with working group members to distribute to colleagues in their respective country/network.

PLAN

Planning

T-014 (KSR 8)

Number of conservation plans/strategies developed: 1

Result description: Successful expert advice was contributed to the new document on guidance to species conservation of the European Commission. Meetings were held in Brussels, in 2019, to contribute to the new document.

COMMUNICATE

Communication

T-004 (KSR 13)

Number of digital communication outputs developed in relation to specific taxonomic groups: 1

Result description: A scientific subcommittee was formed.

T-005 (KSR 13)

Number of digital communication outputs developed in relation to specific taxonomic groups: 1

Result description: A document with all relevant publications around Dhole was compiled and is available for download in the Dhole section of the IUCN Canid Specialist Group website at: https://canids.org/dhole-working-group.

T-006 (KSR 13)

Number of communication products using innovative tools: 1

Result description: We identified veterinarians in range countries who will be available to be sources of information and to be sensitised to record incidents as they occur. Development of standardised protocols for sample collection is ongoing.

T-007 (KSR 13)

Number of communication products using innovative tools: 1

Result description: We created a database of human-Dhole conflicts in range countries which is included in the bibliography.

T-008 (KSR 13)

Number of digital communication outputs developed in relation to specific taxonomic groups: ongoing

Result description: We are working to grow the activities of the ACWG; however, we believe we have established a group that has great strength and breadth in their knowledge and interests. Some of the ideas for increased activity include regular online meetings to increase interactions and an online worksheet to promote upcoming congresses of interest.

T-009 (KSR 13)

Number of digital communication outputs developed in relation to specific taxonomic groups: ongoing

Result description: We have updated the section with new information, photos and group members. We are working to keep the information up to date, as things shift or change (e.g. literature, new projects).

T-021 (KSR 13)

Conference held: 1

Result description: The Arctic Fox Conference in Svalbard, scheduled for 2021, was endorsed.

Acknowledgements

The Canid Specialist Group is hosted by the WildCRU at the University of Oxford. The Chair is kindly sponsored by the Born Free Foundation, who funds his Bill Travers Chair for Conservation Biology at Lady Margaret Hall, University of Oxford. We are grateful to the many organisations and charities, including Born Free Foundation, Fondation Segre, IUCN Save Our Species (SoS), Wildlife Conservation Network, Wildlife Conservation Society, and many more that have supported key field activities to protect wild canids. We are grateful for to the many colleagues that assisted in Red List reassessment and attended the Dhole and canid taxonomy meetings.

Summary of achievements

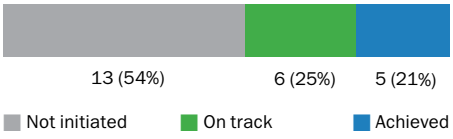
Total number of targets 2021–2025: 24

Geographic regions: 2 Global, 4 Africa, 6 Asia, 7 America, 1 Europe, 4 Oceania

Actions during 2021:

Assess: 3 (KSR 5, 6)
Plan: 1 (KSR 8)
Communicate: 7 (KSR 13)

Overall achievement 2021–2025:



IUCN SSC Caprinae Specialist Group





SOCIAL MEDIA AND WEBSITE
Facebook: @caprinaespecialistgroup
Website: iucncaprinaesg.weebly.com

CO-CHAIR
Juan Herrero
Universidad de Zaragoza, Huesca, Spain

CO-CHAIR
Yash Veer Bhatnagar
Nature Conservation Foundation, India

RED LIST AUTHORITY COORDINATOR
Stefan Michel
Nature and Biodiversity Conservation Union (NABU), Germany

NUMBER OF MEMBERS
34

Mission statement

To promote conservation of wild Caprinae and their environments, in collaboration with IUCN itself, international and local agencies, NGOs and anybody who struggles for the same objective of participating in, endorsing and helping with any initiative that helps promote the status and habitat of these species.

Projected impact 2021–2025

Advising the Government of Tajikistan on Markhor (Capra falconeri) conservation and management will improve the status of this already recovering species.

Targets 2021–2025

ASSESS

T-002 Commission a paper on robust ungulate monitoring methods.

T-004 Continue Caprinae reassessment process.

ACT

T-005 Advise on, collaborate with and endorse initiatives related to Caprinae conservation.

COMMUNICATE

T-001 Consolidate what we know about the status of Caprinae in formal publications so that the next evaluation can be more objective.

T-003 Continue editing one issue of *Caprinae News* per year.

Activities and results 2021

ACT

Synergy

T-005 (KSR 10)

Advise, collaborate and endorse: Ongoing.

Result description: Advice on, collaboration with and endorsement of initiatives related to Caprinae conservation started from 1 January 2021.

COMMUNICATE

Communication

T-001 (KSR 12)

An overall view of all Caprinae: Ongoing.

Result description: The second meeting on the Cantabrian Chamois (*Rupicapra pyrenaica parva*) and Pyrenean Chamois (*R. p. pyrenaica*) was held on 26–27 November 2021, in Benasque, Aragonese Pyrenees, Spain.

T-003 (KSR 12)

Number of Species e-bulletin, Save Our Species newsletter, SSC Groups' newsletter editions produced: 1

Result description: The bulletin *Caprinae News* 2021 was published.

Summary of achievements

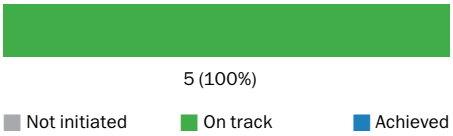
Total number of targets 2021–2025: 5

Geographic regions: 5 Global

Actions during 2021:

Act: 1 (KSR 10)
Communicate: 2 (KSR 12)

Overall achievement 2021–2025:





Caprinae Specialist Group mission to Tajikistan
to advise on markhor *Capra falconeri* conservation
Photo: Archives of the CSG

2021 Report

IUCN SSC Cat Specialist Group





SOCIAL MEDIA AND WEBSITE
Facebook: IUCN SSC Cat Specialist GroupWebsite: **www.catsg.org**

CO-CHAIR
Christine Breitenmoser
KORA, Muri b. Bern, Switzerland

CO-CHAIR
Urs Breitenmoser
FIWI/Universtiät Bern and KORA, Muri b. Bern, Switzerland

RED LIST AUTHORITY COORDINATOR
Lanz Tabea
KORA, Muri b. Bern, Switzerland

NUMBER OF MEMBERS
200

Mission statement

Cat Manifesto (**http://www.catsg.org/index.php?id=44**).

Projected impact 2021–2025

To promote the long-term conservation of all cat species across their range.

Targets 2021–2025

ASSESS

T-018 Publish at least once a year an article on new/updated Felidae Red List assessments or Red List assessment-related subjects in *Cat News* by encouraging lead assessors to write articles on published Red List assessments, also addressing problems during the assessment process.

T-019 Update the Cat Conservation Compendium (*Cat News* Special Issue 9) incorporating new in;formation and approaches such as Assess to Plan, updated IUCN Guidelines for Species Conservation Planning, Green Status assessment, etc., and publish it as a *Cat News* Special Issue.

T-020 Assess the following taxa for the first time for the IUCN Red List: African Leopard *(Panthera pardus pardus)*, Sunda Leopard Cat *(Prionailurus javanensis)* and Northeast African Cheetah (*Acinonyx jubatus soemmeringii*).

T-021 Reassess the following taxa for the IUCN Red List: Caracal (*Caracal caracal*), Pampas Cat (*Leopardus colocola*), Iberian Lynx (*Lynx pardinus*), Flat-headed Cat (*Prionailurus planiceps*), Fishing Cat (*Prionailurus viverrinus*), Persian Leopard (*Panthera pardus saxicolor/tulliana*) and Northwest African Cheetah (*Acinonyx jubatus hecki*).

T-022 Finalise, submit and get published the (re-)assessments of African Wildcat *(Felis lybica)*, Cheetah (*Acinonyx jubatus)*, Chinese Mountain Cat (*Felis bieti)*, European Wildcat (*Felis silvestris)*, Andean Cat (*Leopardus jacobita)*, Mainland Clouded Leopard (*Neofelis nebulosa)*, Tiger (*Panthera tigris)*, Mainland Leopard Cat (*Prionailurus bengalensis)*, Sumatran Clouded Leopard (*Neofelis diardi diardi)*, Bornean Clouded Leopard (*Neofelis diardi borneensis)*, Indian Leopard (*Panthera pardus fusca)* and Javan Leopard (*Panthera pardus melas)*.

T-023 Encourage assessment team members or contributors to global Red List (re-) assessments to conduct regional and national Red List assessments of the taxa globally assessed and support them with the implementation of National Red List Guidelines.

T-024 Conduct and publish the Green Status assessments of Tiger (*Panthera tigris),* Iberian Lynx *(Lynx pardinus)* and European Wildcat (*Felis silvestris)*.

T-025 Conceptualise the Guidelines for Climate Change Vulnerability for cat species and identify for which cat species a Climate Change Vulnerability Assessment should be first conducted.

T-026 Enhance the information in the Red List assessments and Green Status assessments, especially about threats and conservation of a taxon, to facilitate and benefit the development of conservation planning for the taxon as demanded by the Assess to Plan approach.

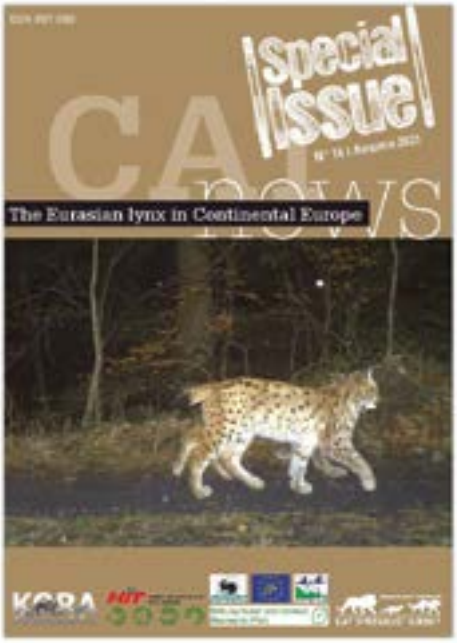
T-027 Evaluate the assessment and the status of knowledge of small cat species, identify gaps and define the most urgent conservation actions per species.

T-028 Maintain and expand the Cat Specialist Group Species Database (CSGSD).

T-029 Develop a strategy to collect camera trapping by-catch data and opportunistic species records, synchronise the exchange of records between institutions and integrate these records into the Cat Specialist Group Species Database (CSGSD, used for Red List distribution maps).

T-030 Reflect the revised taxonomy of the cat species (Kitchener, A.C., et al. 2017. A revised taxonomy of the Felidae. The final report of the Cat Classification Task Force of the IUCN/ SSC Cat Specialist Group. *Cat News Special Issue* 11:1–80.) in the Red List and Green Status assessments.







T-061 Develop guidelines for the monitoring of African Lion (*Panthera leo*) and its prey.

T-062 Certify the Cat Specialist Group Red List Authority Coordinator as an IUCN Red List Trainer.

PLAN

T-031 Develop a Regional Conservation Strategy for Persian Leopard (*Panthera pardus tulliana/saxicolor)*.

T-032 Develop a Conservation Strategy for European Wildcat (*Felis silvestris)*.

T-033 Develop a Regional Conservation Strategy for Leopard (*Panthera pardus)* in Southern Africa.

T-034 Update the *Regional Conservation Strategy for the Cheetah and African Wild Dog in Eastern Africa*.

T-035 Support the development of an updated Action Plan for the Iberian Lynx (*Lynx pardinus*).

T-036 Update the Status Survey and Conservation Action Plan for Wild Cats.

T-037 As required or requested: Comment on cat related policies.

T-038 Attend CITES and Convention on Migratory Species (CMS) meetings and comment on cat-related Resolutions and Decisions.

T-039 CITES-CMS African Carnivores Initiative (ACI): Advance initiative at global, regional and national level, attend respective meetings.

T-040 CMS Central Asian Mammals Initiative (CAMI) and related IUCN Save Our Species (SOS) programme: Review Persian Leopard (*Panthera pardus tulliana*) conservation status, develop Persian Leopard conservation strategy, advance conservation projects for other cat species (Snow Leopard, *Panthera uncia*; Asiatic Cheetah, *Acinonyx jubatus venaticus*), attend CAMI meetings.

T-041 Use the Conservation Strategy for European Wildcat (*Felis silvestris)* to promote an improved Wildcat conservation within the European Union member states (Fauna-Flora and Habitats (FFH) Directives).

T-042 Use the continental European conservation recommendation for the Eurasian Lynx (*Lynx lynx*) to lobby for a more coordinated approach with multilateral agreements (EU FFH Directives, Council of Europe's Berne Convention).

ACT

T-043 Support the implementation of the Conservation Strategy for the Pallas's Cat (*Otocolobus manul*).

T-044 Support the implementation of the LIFE Project for the recovery of the European Wildcat (*Felis silvestris*) in Scotland (Saving Wildcats Advisory Group).

T-045 Support the implementation of conservation actions for the Leopard (*Panthera pardus*) in the Caucasus, including implementation of an MoU between IUCN, Russian Ministry of Natural Resources (MNRE) and European Association of Zoos and Aquaria (EAZA).

T-046 Support the implementation of cat conservation projects under the ACI.

T-047 Support the implementation of the ACI through a coordinated implementation plan developed by the Cat Specialist Group and its members working on ACI species in Africa.

T-048 Attend CITES Non-detriment Findings (NDFs) conference and provide recommendation on NDFs for Lion (*Panthera leo*) and Leopard.

T-059 Develop mechanisms to expand the Integrated Tiger Habitat Conservation Programme (ITHCP) to incorporate Snow Leopards and Leopards.

T-063 Participate in the project 'Act Green: A near-real time integrated mapping and reporting system for re-wilding efforts: applying, extending and enhancing an application for Tigers (*Panthera tigris*) to Lions (*Panthera leo*), Jaguars (*Panthera onca*), and American Bison (*Bison bison*)' together with Wildlife Conservation Society (WCS), Panthera, WWF, a.o.

NETWORK

T-002 Develop an MoU with Foundation KORA for hosting the Cat Specialist Group.

T-003 Develop a funding strategy, both institutional and project related, and update and adapt it annually to the work programme.

T-004 Secure funding to deliver K2-13.

T-005 Strengthen the relationship with the zoo community in regard to the implementation of the Assess-Plan-Act (APA) approach in cats.

T-006 Update the membership strategy (number of members, expertise, regional distribution, affiliations, etc.), review Terms of Reference for members and re-constitute the Cat Specialist Group.

T-007 Develop a programme for and conduct periodical webinars with Cat Specialist Group members to strengthen the team



Tiger (*Panthera tigris*) in Pench National Park, India
Photo: Patrick Meier

spirit of the group, inform about news and/or issues, and provide the opportunity to ask questions to the Co-Chairs and group members.

T-008 Develop and conduct Red List assessment and Green Status assessment (online) training courses with emphasises on 'Assess to Plan' for assessors and Cat Specialist Group members.

T-009 Develop and conduct (online) training courses for Cat Specialist Group members and others in important conservation-related subjects.

T-010 Support already existing and the building of new (small) cat networks in regard to organisational questions, looking for funding, making connections, capacity building, etc.

T-011 Maintain and expand the Cat Specialist Group Library.

T-012 Within SSC: Enhance collaboration with the SSC Chair's Office, Species Office, and other Specialist Groups as possible and needed, e.g. SOS: Tiger programme, CAMI, ACI; Conservation Translocation Specialist Group: Cat Re-introduction Guidelines; Canid Specialist Group: ACI; Species Conservation Success Task Force: Green Status assessment.

T-013 Within IUCN: Inform other Commissions and Regional Offices on cat issues related to their themes or regions, respectively.

T-014 UN Conventions: Continue and deepen cooperation with CITES and CMS on cat issues, e.g. African Carnivore Initiative, Central Asian Mammal Initiative, Jaguar Decisions, NDFs, etc.

T-015 World Association of Zoos and Aquariums (WAZA), EAZA, Association of Zoos and Aquariums (AZA), a.o.: Continue and deepen cooperation with AZA and EAZA Felid Taxon Advisory Groups (TAGs) on various issues, e.g. Eurasian Lynx recommendations, Leopard reintroduction guidelines, conservation breeding recommendations, and maintain good relationship with head offices.

T-016 NGOs: Continue and deepen cooperation with specific NGOs on various cat conservation topics, e.g. WCS (Tiger), Panthera (Lion, Small Cats), WWF (Leopard, Jaguar).

T-017 Encourage cat assessors or contributors of global Red List (re-) assessments as well as Cat Specialist Group members and other stakeholders to implement Assess-Plan-Act at different locations and opportunities in cooperation with governments (e.g. through conducting national assessments).

T-049 Explore in a discussion with the whole group, and adapt if desired, the internal structure and organisation of the Cat Specialist Group, e.g. geographic subgroups, taxonomic or topical working groups, specific task forces, etc.

T-060 Update the Cat Specialist Group in the IUCN Commission System.

COMMUNICATE

T-050 Produce two regular issues of *Cat News* with peer-reviewed articles.

T-051 Promote *Cat News* and gain more Friends of the Cat Group, the sponsor group of *Cat News*.

T-052 Produce a Special Issue of *Cat News* on Jaguar Conservation need and Regional Strategy for South America.

T-053 Produce a Special Issue of *Cat News* on the status of the Eurasian Lynx including Recommendations for Continental Europe.

T-054 Produce a Special Issue of *Cat News* about the Balkan Lynx Recovery Programme.

T-055 Renew the Cat Specialist Group website addressing more the IUCN environment.

T-056 Increase the presence of the Cat Specialist Group on social media (Facebook, Instagram, Twitter).

T-057 Produce Unite for Literacy booklets on cat species.



Persian Leopard (*Panthera pardus tulliana*)
Photo: Alexander Sliwa

T-058 Establish and maintain the Wild Cat Club as a group of non-members to support the work of the Cat Specialist Group.

T-064 Keep the IUCN SSC website updated.

Activities and results 2021

ASSESS

Green Status

T-024 (KSR 6)

Number of new Green Status of Species assessments completed: 1

Result description: Monthly online meetings were held on the (re-)assessment of Tiger (*Panthera tigris)* for the Red List and the Green Status assessment. Both will be finalised in 2022.

Red List

T-020 (KSR 6)

Number of new global Red List assessments completed: 1

Result description: Support was provided to build up an assessor team for Sunda Leopard Cat *(Prionailurus javanensis*) through online meetings.

T-022 (KSR 6)

Number of new global Red List assessments completed: 4

Result description: Assessments of Mainland Leopard Cat (*Prionailurus bengalensis*), European Wildcat (*Felis silvestris*), African Wildcat *(Felis lybica*) and Indian Leopard (*Panthera pardus fusca*) were carried out. All are ready to be submitted in early 2022.

Number of global Red List reassessments completed: 2

Result description: Reassessments of Mainland Clouded Leopard (*Neofelis nebulosa*) and Javan Leopard (*Panthera pardus melas*) were finalised, submitted and published. Many online meetings took place for the reassessments of Chinese Mountain Cat (*Felis bieti*), Cheetah (*Acinonyx jubatus*) and Tiger (*Panthera tigris*), which are all ready to be submitted in early 2022.

T-027 (KSR 6)

Number of global Red List reassessments completed: 4

Result description: European Wildcat (*Felis silvestris*), African Wildcat *(Felis lybica*), Chinese Mountain Cat (*Felis bieti*) and Mainland Leopard Cat (*Prionailurus benglensis*) have been reassessed. All are ready to be submitted in early 2022.

T-030 (KSR 6)

All (re-)assessed taxa follow the revised taxonomy: ongoing

Result description: Based on the revised taxonomy, European Wildcat (*Felis silvestris*), African Wildcat *(Felis lybica*) and Mainland Leopard Cat (*Prionailurus bengalensis*) have been newly assessed.

T-061 (KSR 6)

Number of technical documents provided to support Red List assessments/reassessments: 1

Result description: The programme and list of participants were developed. Due to COVID-19 the workshop has been postponed to April 2023.

T-062 (KSR 6)

The IUCN SSC Cat SG Red List Authority Coordinator is a certified IUCN Red List trainer: 1

Result description: The Red List Authority Coordinator has successfully

complete the training and is now a certified Red List trainer.

Research activities

T-018 (KSR 5)

Number of publications produced in internal journals of SSC groups: 2

Result description: Articles on updated Red List assessments of Javan Leopard (*Panthera pardus melas*) and Mainland Clouded Leopard (*Neofelis nebulosa*) were published in *Cat News* 74.

PLAN

Planning

T-031 (KSR 8)

Number of conservation plans/strategies developed: 1



European Wildcat (*Felis silvestris*)
Photo: Alexander Sliwa

Result description: The workshop to develop the Regional Conservation Strategy has been postponed to March 2022.

Policy

T-038 (KSR 9)

Number of motions in Multilateral Environmental Agreements influenced by IUCN that are adopted: 2

Result description: We attended the 31st meeting of the CITES Animals Committee (AC31), and the CMS Fifth Meeting of the Sessional Committee of the Scientific Council (ScC-SC5), where we submitted InfDoc UNEP/CMS/ScC-SC5/Inf.8 on the conservation of Cheetah (*Acinonyx jubatus*) in Asia and Northeast Africa.

T-040 (KSR 9)

Number of policies where SSC members provided technical input: 1

Result description: In monthly online meetings, the conservation status review and the development of topical papers have been initiated and advanced.

T-042 (KSR 9)

Number of policies where SSC members provided technical input: 1

Result description: The Bonn recommendations for the conservation of the Eurasian Lynx have been adopted by the Standing Committee of the Berne Convention.

ACT

Conservation actions

T-043 (KSR 10)

Number of species with increased or prevented decrease in population or range size, as a result of conservation actions: 1

Result description: We reviewed proposals for the small grants programme of PICA (Pallas's Cat International Conservation Alliance). The programme has the aim to implement the Regional Conservation Strategy.

T-059 (KSR 10)

Number of species with increased or prevented decrease in population or range size, as a result of conservation actions: 1

Result description: Report to include Leopard and Mainland Clouded Leopard (*Neofelis nebulosa*) finalised.

Technical advice

T-044 (KSR 10)

Number of technical consultations provided to support conservation actions: 1

Result description: As part of the Advisory Group of the LIFE Project, we attended three online meetings to provide technical expertise for the project.

T-048 (KSR 11)

Number of sustainable use practices supported: 1

Result description: Due to COVID-19 the conference has been delayed.

NETWORK

Capacity building

T-010 (KSR 2)

Number of networks supported: 1

Result description: Funding proposal developed.

T-011 (KSR 2)

Number of new publications integrated and uploaded to the web per year: 215

Result description: Besides uploaded 215 new documents, we put a lot of effort into correcting mistakes in the database in 2021.

Membership

T-006 (KSR 2)

Number of SSC members recruited: 159

Result description: We invited 200 members. By the end of 2021, 159 (79.5%) had accepted the invitation in the Commission System. We are still working to get this done for the remaining invitees. The whole process was a tremendous amount of work, as the system did not always work and people did not have a lot of patience with it.

T-060 (KSR 2)

Membership in the IUCN Commission System updated: 79.5%

Result description: A lot of challenges were encountered.

Synergy

T-002 (KSR 1)

Number of 'in kind' partnerships established and maintained: 1

Result description: Draft MoU developed and will be reviewed by KORA Board members in 2022.

T-003 (KSR 1)

Number of 'funding' partners established and maintained: 1

Result description: One funding partnership has been renewed.

T-012 (KSR 3)

IUCN bodies with which the SSC group collaborates to advance targets: ongoing

Result description: We conducted several online meetings with the SSC Chair on various topics. We worked closely with the SOS ITHCP on the reassessment of the Tiger (*Panthera tigris)* on the IUCN Red List; we worked with CITES and CMS on various projects (see Target T-014).

T-014 (KSR 3)

Non-IUCN bodies with which the SSC group collaborates to advance targets: ongoing

Result description: With CMS CAMI, we started the preparation of a status assessment and topical contributions for the conservation of the Persian Leopard (*Panthera pardus tulliana/saxicolor)* in monthly online meetings. This will lead to the development of a Regional Conservation Strategy. We finalised the Programme of Work for the Joint CITES and CMS African Carnivores Initiative together with the two Secretariats after a review process by the range countries. The Programme of Work has been adopted by the respective bodies of CITES and CMS.

T-015 (KSR 3)

Non-IUCN bodies with which the SSC group collaborates to advance targets: ongoing

Result description: We attended the EAZA Felid TAG mid-year meeting and prepared an input document for the EAZA head office for the workshop to update the Regional Collection Plan (January 2022) for felids.

T-016 (KSR 3)

Non-IUCN bodies with which the SSC group collaborates to advance targets: ongoing

Result description: We participated together with several NGOs (WCS, Panthera, WWF, Fauna and Flora International, TRAFFIC) in a process to develop a vision document for the Tiger, *Securing a viable future for the tiger*, as an input document for the Tiger Summit 2022 and the new phase of the Global Tiger Recovery Programme.

COMMUNICATE

Communication

T-050 (KSR 12)

Number of Species e-bulletin, Save Our Species newsletter, SSC Groups' newsletter editions produced: 2

Result description: *Cat News* issues 73 and 74, with 34 peer-reviewed articles, were published in 2021.

T-052 (KSR 12)

Number of Species e-bulletin, Save Our Species newsletter, SSC Groups' newsletter editions produced: 1

Result description: We had a delay with the publication as the process has been hampered by the pandemic. The *Cat News* Special Issue on Jaguar Conservation will be published in 2022.

T-053 (KSR 12)

Number of Species e-bulletin, Save Our Species newsletter, SSC Groups' newsletter editions produced: 1

Result description: *Cat News* Special Issue 14 with 23 articles on the status of the Eurasian Lynx in Continental Europe, several topical papers and recommendations for the conservation of the species, has been published.

T-056 (KSR 12)

Increase in number of followers: 5%

Result description: Regular presence on Facebook continued.

T-064 (KSR 12)

The Cat SG website is updated: ongoing

Result description: Several sections have been updated: Members, cat profiles, *Cat News* and the Conservation Center.

Acknowledgements

Working very closely with the Cat Specialist Group Co-Chairs were Manuela von Arx (Digital Cat Library), Tabea Lanz (Assistant to the Chair, website, Red List Authority Coordinator), Roland Bürki (support to the Chair), Valentyna Laskova (bookkeeping) – a great thank you to all of them. We are very grateful to Foundation KORA for hosting the Cat Specialist Group. We would like to thank the many dedicated people who helped develop and run the various projects: Juan Reppucci and Maximilian Allen (associate editors *Cat News*). Alexander Sliwa, Patrick Meier and Sebastian Kennerknecht have generously made available their superb cat pictures for Cat Specialist Group purposes. Our projects would not be possible without financial support from many committed institutions and private persons. We are very grateful for the support of the Friends of the Cat Group, Zoo Leipzig, the Ayers Wild Cat Conservation Trust, KfW, IUCN SOS ITHCP, CMS Convention on Migratory Species, Stämpfli AG, and especially Patrick Meier and Peter Stämpfli.

Summary of achievements

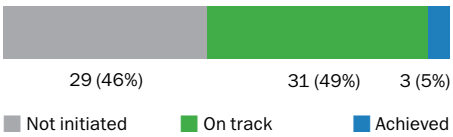
Total number of targets 2021–2025: 63

Geographic regions: 50 Global, 7 Africa, 2 America, 4 Asia, 7 Europe

Actions during 2021:

Assess:	9 (KSR 5, 6)
Plan:	4 (KSR 8, 9)
Act:	4 (KSR 10, 11)
Network:	10 (KSR 1, 2, 3)
Communicate:	5 (KSR 12)

Overall achievement 2021–2025:



IUCN SSC Cetacean Specialist Group









SOCIAL MEDIA AND WEBSITE
Facebook: @CetaceanSG
Twitter: @IUCNCetaceanSG
Website: **https://iucn-csg.org/**

CHAIR
Randall Reeves
Okapi Wildlife Associates, Hudson, Quebec, Canada

DEPUTY CO-CHAIR
Giuseppe Notarbartolo di Sciara
Tethys Research Institute, Milano, Italy

DEPUTY CO-CHAIR
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Megaptera Marine Conservation, Netherlands

DEPUTY CO-CHAIR
Gill Braulik
Sea Mammal Research Unit, University of St Andrews, Scotland

RED LIST AUTHORITY COORDINATOR
Barbara Taylor
Southwest Fisheries Science Center, National Marine Fisheries Service, NOAA, La Jolla, California, US

NUMBER OF MEMBERS
140

Mission statement

The Cetacean Specialist Group (CSG) promotes and facilitates the conservation of cetaceans worldwide. It functions as a catalyst, clearing house and facilitator for cetacean-related research and conservation action. Our guiding premise is that conservation ultimately depends upon good science, and the group's credibility and value are based on maintaining high standards of scientific rigour. The advice we provide relates mainly to the status of populations, abundance, trends, the effects of current or potential threats, and the efficacy of mitigation. Our emphasis is on the recovery of threatened species and populations, but we also recognise the importance of maintaining the full diversity of the Cetacea, which includes just over 90 species, about 50 recognised subspecies and at least hundreds of populations.

Projected impact 2021–2025

Cetaceans are nominally protected under several international conventions and by national legislation in most countries, but they are affected by many human activities in marine and freshwater environments. Most of the conservation work by CSG members is linked, directly or indirectly, to that of other bodies or groups with shared objectives, and this makes it impossible in most instances to tease apart the influence or 'impact' made 'by the CSG' per se (other than in the case of Red Listing). It also means that the targets, activities and results reported here are only a sample of the many areas of cetacean conservation work in which members are engaged, and which they are often leading or sharing the lead with others. The CSG regularly works to conserve cetaceans with bodies like the International Whaling Commission (IWC), Convention on the Conservation of Migratory Species of Wild Animals (CMS) and US Marine Mammal Commission, with national government agencies, and with NGOs interested in conserving cetaceans. Our group's traditional focus on Endangered and Critically Endangered small cetaceans, particularly those outside North America, western Europe, Australia and New Zealand, continues. Integrated Conservation Planning for Cetaceans (ICPC) is a team of experts formed to apply the IUCN One Plan Approach guidelines to selected species, subspecies and populations, prioritised according to conservation status, likelihood of catastrophic decline, and potential for effective mitigation.

Targets 2021–2025

ASSESS

T-017 Publish a scientific paper on the Red List status of cetaceans.

T-020 Ensure all freshwater cetacean species, subspecies and subpopulation assessments are up to date.

T-021 Update Hector's Dolphin *(Cephalorhynchus hectori)* and Sperm Whale (*Physeter macrocephalus)* assessments (the last two species requiring update at the global level).

T-022 Ensure that assessments of Endangered or Critically Endangered subspecies and subpopulations are up to date.

T-023 Assess Yangtze River Dolphin (also known as Baiji; *Lipotes vexillifer*) using new methods to assess extinction.

T-024 Develop transparent guidelines for the selection of subpopulations that should be assessed and include clear roles for CSG members in this process.

PLAN

T-025 Increase diversity, equity and inclusion in CSG membership and activities.

T-026 Advance recommendations from the Yangtze Finless Porpoise (*Neophocaena asiaeorientalis asiaeorientalis*) conservation symposium held in Wuhan, November 2019.



Lahille's bottlenose dolphins are a priority species for the Cetacean Specialist Group
Photo: Els Vermeulen

T-027 Support relevant government agencies, researchers, and NGOs in Atlantic Humpback Dolphin (*Sousa teuszii*) range states in conservation planning for the species as proposed in the IUCN SSC EDGE Grant proposal and terms of reference.

T-028 Advance the ICPC targets recommended at the December 2018 Nuremberg workshop and develop a method to choose other projects.

T-029 Provide expert advice on global and national conservation planning efforts for river dolphins in South America and Asia.

ACT

T-001 Continue to provide technical support for the IUCN Marine Mammal Protected Areas Task Force (https://www.marinemammalhabitat.org/).

T-002 Continue to provide support to South Korean conservationists to reduce massive bycatch of Endangered Narrow-ridged Finless Porpoises (*Neophocaena asiaeorientalis*).

T-003 Continue to support the Consortium for the Conservation of the Atlantic Humpback Dolphin (CCAHD) to improve the conservation status of Critically Endangered Atlantic Humpback Dolphins in West Africa.

T-004 Help to expand and support the Arabian Sea Whale Network (see https://iucn-csg.org/csg-special-projects/arabian-sea-humpback-whales/).

T-005 Assist efforts to prevent extinction of Taiwanese Humpback Dolphins (*Sousa chinensis taiwanensis*; see https://iucn-csg.org/csg-special-projects/eastern-taiwan-strait-humpback-dolphins/).

T-006 Continue to assist efforts to prevent extinction of the Vaquita (*Phocoena sinus*).

T-007 Continue to provide technical support to efforts to conserve the three Critically Endangered freshwater subpopulations of Irrawaddy Dolphins (*Orcaella brevirostris*) in Southeast Asia.

T-008 Provide technical support to integrated conservation planning for the Yangtze Finless Porpoise metapopulation kept within the semi-natural reserves.

T-009 In coordination with the IWC Conservation Management Plan, support collaborators in Brazil and Argentina to incorporate integrated conservation planning options into a conservation action plan for the Franciscana (*Pontoporia blainvillei*).

T-010 Provide support to existing programmes that attempt to rescue canal-entrapped Indus and Ganges River Dolphins (*Platanista minor* and *Platanista gangetica*, respectively) by training local veterinarians and scientists to conduct comprehensive health assessments.

T-030 Provide expert advice on efforts to reduce bycatch of river dolphins, and advise on and assist in efforts to reverse and prevent impacts of water development on river dolphins in South America and Asia with an emphasis on site-based and population-level initiatives.

NETWORK

T-011 Continue involvement in the work of the International Whaling Commission's Scientific and Conservation Committees, Conservation Management Plans and Small Cetacean Task Teams.

T-012 Collaborate with the Convention on Migratory Species to advance Concerted Actions for threatened cetaceans.

T-013 Respond to requests for advice and feedback (e.g. to CITES and various IUCN bodies and Specialist Groups) as requested.

T-014 Continue involvement in work of the Society for Marine Mammalogy's Conservation Committee.

T-015 Expand professional resources for integrated conservation planning.



Infographic highlighting the precarious conservation status of Atlantic humpback dolphins (*Sousa teuszii*), available in English, French and Portuguese via the website https://www.sousateuszii.org/
Photo: CCAHD

COMMUNICATE

T-016 Maintain and regularly update the Cetacean Specialist Group website: https://iucn-csg.org/.

T-018 Prepare monthly social media communications (Facebook, Twitter and website news) on the role of the CSG, CSG activities, process of Red Listing and Red List status of cetaceans.

T-019 Host a CSG Cetacean Red List webinar for the general cetacean conservation community.

Activities and results 2021

ASSESS

Red List

T-020 (KSR 6)

Number of global Red List reassessments completed: 2

Result description: To reflect the recent taxonomic split between Indus and Ganges River Dolphins, new assessments of both *Platanista* species were drafted, reviewed and submitted, but not yet published. A species expert accepted the role of updating the Red List assessments of the Mekong and Ayeyarwady River subpopulations of Irrawaddy Dolphins, and the assessments will be undertaken in 2022.

T-021 (KSR 6)

Number of global Red List reassessments completed: 0

Result description: West Island Hector's and Māui Dolphins (the two *Cephalorhynchus hectori* subspecies) and the Sperm Whale have pending assessments that require final review prior to submission to IUCN for publication.

T-022 (KSR 6)

Number of global Red List reassessments completed: 9

Result description: Ten subpopulation reassessments of Mediterranean cetaceans were published in December 2021, of which seven were assigned to a threatened category. The threatened Sperm Whale (*Physeter macrocephalus*) Mediterranean subpopulation and Common Dolphin (*Delphinus delphis*) Inner Mediterranean subpopulation assessments were updated in 2021. Assessments of another three threatened subspecies from the Black Sea are in final draft and will be submitted in 2022. Several subpopulations of Irrawaddy Dolphins are due for reassessment in the coming year. Rice's Whale (*Balaenoptera ricei*) was formerly assessed as a subpopulation (Gulf of Mexico Bryde's Whale, *Balaenoptera edeni*) and that assessment will be removed and replaced by an assessment of the newly recognized species by summer 2022.

T-023 (KSR 6)

Number of global Red List reassessments completed: 0

Result description: A working group composed of several Chinese experts, the Red List coordinator and several other experts was established to conduct a series of online meetings in 2022 to apply the new methods for assessing extinction to the Yangtze River Dolphin (Baiji).

T-024 (KSR 6)

Number of technical documents provided to support Red List assessments/reassessments: 0

Result description: Guidelines were drafted and edited by Taylor, Reeves, Minton and Braulik, but a process to integrate broader CSG input was not progressed.

Research activities

T-017 (KSR 5)

Number of scientific publications about species research that acknowledge SSC affiliation: 0

Result description: A short summary paper on the Red List status of cetaceans was submitted to the International Whaling Commission's Scientific Committee

meeting in May 2021, and this was intended as a start for the longer scientific paper. An outline of the paper, including a list of analyses to be conducted, was drafted by a core group of authors. A basic analysis was conducted, and GIS and statistical modelling were underway, to be reviewed by co-authors in early 2022.

PLAN

Planning

T-025 (KSR 8)

Clear membership policy articulated in writing, increase in membership from under-represented groups: 25%

Result description: The CSG leadership reviewed membership criteria and updated wording on the CSG website: https://iucn-csg.org/membership/. Terms of reference for Regional Coordinators were developed, including a mandate to help identify and invite new members from under-represented regions and groups. Regional Coordinators were asked to agree to these terms, and it was agreed to appoint two new Co-Coordinators, one each in Asia and South America. A number of new members from under-represented regions were invited to join the group for the new quadrennium.

T-026 (KSR 8)

Number of conservation plans/strategies developed: 0

Result description: Several of the recommendations from the symposium point to conducting a comprehensive Population Viability Analysis (PVA) for Yangtze Finless Porpoises in the wild and oxbow reserves, to determine the size of an *ex situ* metapopulation needed to meet the goals of the Chinese government's action plan. While PVAs have been used for *in situ* and *ex situ* populations of other species separately, it may be possible to conduct a PVA that synthesises the risk of extinction and loss of genetic diversity of the entire Yangtze Finless Porpoise population, by including both the *in situ* and *ex situ* populations with movement between the two. The PVA workshop report outline was drafted but put on hold due to challenges with regard to funding and travel due to the global pandemic. During the last ICPC team meeting for the year, a small group was formed to complete drafting of the 2019 symposium report and advance a hybrid virtual/in-person PVA workshop in 2022.

T-027 (KSR 8)

Number of conservation plans/strategies developed: 2

Result description: Workshops were held in three Atlantic Humpback Dolphin range countries (see report or brief summary here: https://www.sousateuszii.org/projects/government-stakeholder-engagement-meetings-in-sousa-teuszii-range-countries/) with funding from the IUCN SSC EDGE Internal Grant. Communication tools for these engagements were developed and disseminated to all Consortium for the Conservation of the Atlantic Humpback Dolphin (CCAHD) members, which include conservation stakeholders in 14 of the 19 possible range countries for the species. These tools include an infographic, which is available in three languages (English, French and Portuguese) via the CCAHD website: https://www.sousateuszii.org/wp-content/uploads/2021/06/CCAHD_h_dolph_english_infog_052521.pdf. A webinar is planned for 2022 to allow those who hosted these initial meetings to share their experiences with the wider CCAHD membership.

T-028 (KSR 8)

Number of conservation plans/strategies developed: 0

Result description: Species conservation planning is progressing for Atlantic Humpback Dolphins, Indus and Ganges River Dolphins, Franciscanas, and Lahille's Bottlenose Dolphins (*Tursiops truncatus gephyreus*). More details on these efforts are available under reporting on other targets. The current strategy is to continue to focus on the selected projects until the anticipated subpopulation prioritisation method is available to aid in selecting new projects. In February 2021, ICPC members joined the US National Oceanic and Atmospheric Administration (NOAA) capture myopathy workshop, the primary goal of which was to develop a better understanding of capture myopathy, which is an essential veterinary consideration for hands-on conservation work with small cetaceans. Risk factors, diagnostic techniques, treatment options and prevention strategies were discussed.

T-029 (KSR 8)

Participation in workshops, meetings and stakeholder engagement involved in river dolphin conservation planning actions: 3

Result description: CSG members played an integral role in the development of a website that features a wide range of resources for conservation planning for river dolphins: https://www.riverdolphins.org/. This project also included the drafting of a 'best practice report' (https://www.riverdolphins.org/wp-content/uploads/2021/07/Global-Best-Practices-in-River-dolphin-Conservation_final-version_July2021.pdf) and a report focusing on conservation needs for Ganges River dolphins (https://www.riverdolphins.org/wp-content/uploads/2021/07/Ganges-river-dolphin-Action-Plan-Gap-analysis-July2021.pdf).

ACT

Conservation actions

T-001 (KSR 10)

Number of areas under management for the species or group of species: 2

Result description: The three CSG Deputy Chairs are involved in identification of Important Marine Mammal Areas (IMMAs) and promotion of their use for conservation management and threat mitigation (note that IMMA designation alone does not mean the area is 'under management'). The CSG Chair acts as a reviewer of IMMA proposals. A virtual workshop held in March 2021 identified 14 new IMMAs in the Black Sea, Turkish Straits and Caspian Sea (https://www.marinemammalhabitat.org/on-international-black-sea-action-day-three-threatened-dolphin-and-porpoise-species-awarded-immas/). A planned workshop to identify IMMAs in the Eastern Pacific had to be delayed due to pandemic-related travel restrictions but should be held in 2022.

T-002 (KSR 10)

Number of actions addressing major drivers/emerging threats of species or population loss: 0

Result description: CSG members are in regular contact with Korean scientists involved in bycatch reduction efforts. However, recent staff changes in one of the organisations in Korea most active on this front have delayed progress.

T-003 (KSR 10)

Number of actions addressing major drivers/emerging threats of species or population loss: 2

Result description: The CSG supported three Atlantic Humpback Dolphin range country partners to conduct government engagement workshops to raise awareness among relevant agencies on the conservation status and needs of the species. This was achieved in part through an IUCN SSC EDGE grant. A short summary of the workshops can be found here: https://www.sousateuszii.org/projects/government- stakeholder-engagement-meetings-in-sousa-teuszii-range-countries/. Atlantic Humpback Dolphin conservation is

now also featured as a Focal Taxa project on the CSG website (https://iucn-csg.org/atlantic-humpback-dolphins/), and the CSG works closely with the CCAHD to support ongoing conservation work in relevant range countries. Funds have been raised to address knowledge and capacity gaps in seven range countries.

T-004 (KSR 10)

Number of actions addressing major drivers/emerging threats of species or population loss: 1

Result description: CSG members supported virtual meetings of the Arabian Sea Whale Network (ASWN) in 2021, focusing on collaboration for acoustic research and collection of data from stranding events. ASWN members presented results of their work at the International Whaling Commission's Scientific Committee meeting in May 2021. New members joined the group from Oman, Kuwait, India and Sri Lanka.

T-005 (KSR 10)

Number of actions addressing major drivers/emerging threats of species or population loss: 1

Result description: Taiwanese Humpback Dolphins are featured in the Focal Taxa section of the CSG website, thus helping to highlight their precarious conservation status and needs (see https://iucn-csg.org/csg-special-projects/eastern-taiwan-strait-humpback-dolphins/).

T-007 (KSR 10)

Number of actions addressing major drivers/emerging threats of species or population loss: 2

Result description: CSG members contributed to a WWF-hosted trinational workshop focusing on the three Critically Endangered riverine populations of Irrawaddy Dolphins (see https://www.riverdolphins.org/wp-content/uploads/2021/07/Irrawaddy-Trinational-Workshop-report-2020_Final.docx). The CSG continues to provide technical support to conservation efforts for the Mekong River population of Irrawaddy Dolphins in Cambodia.

T-009 (KSR 10)

Number of actions addressing major drivers/emerging threats of species or population loss: 1

Result description: Health assessment plans are in place for a project off the coast of Argentina in March 2022, to catch, tag, and release up to six Franciscanas to learn about movement patterns relative to coastal fisheries. A consortium of local and international experts was formed to improve existing rehabilitation protocols for Franciscanas.

Technical advice

T-006 (KSR 11)

Number of intervention letters addressing major drivers/emerging threats of species or population loss: 1

Result description: The CSG website continues to host new scientific reports including reports on the autumn 2021 Vaquita survey. A letter was drafted for the SSC Chair to send in response to the Government of Mexico's plans to formally allow gillnetting within the Zero Tolerance Area.

T-008 (KSR 10)

Number of technical consultations provided to support conservation actions: 1

Result description: CSG and ICPC members are working closely with scientists at the Institute for Hydrobiology who oversee and conduct research on Yangtze Finless Porpoises with a focus on assessing the feasibility of conducting a Population Viability Analysis (PVA), using methods developed for other species by the IUCN SSC Conservation Planning Specialist Group (CPSG).

T-010 (KSR 10)

Number of technical consultations provided to support conservation actions: 1

Result description: Collaborations with the organisations currently overseeing local river dolphin rescue operations have been established to help build infrastructure through training local river dolphin first responders and organising data collection to improve long-term conservation efforts.

T-030 (KSR 10)

Number of technical consultations provided to support conservation actions. 1

Result description: CSG members played an integral role in the development of a website that features a wide range of resources for conservation planning for river dolphins: https://www.riverdolphins.org/. This project also included the drafting of a 'best practice report' (https://www.riverdolphins.org/wp-content/uploads/2021/07/Global-Best-Practices-in-River-dolphin-Conservation_final-version_July2021.pdf) and a report focusing on conservation needs of Ganges River dolphins (https://www.riverdolphins.org/wp-content/uploads/2021/07/Ganges-river-dolphin-Action-Plan-Gap-analysis-July2021.pdf).

NETWORK

Capacity building

T-015 (KSR 2)

Number of people trained in other fields: 1

Result description: The Integrated Conservation Planning for Cetaceans (ICPC) group engaged in intra-group discussions via email and videoconferencing throughout the year.

Synergy

T-011 (KSR 3)

Number of IWC Scientific Committee Meetings attended: 1

Result description: CSG members attended the 2021 IWC Scientific Committee meeting, as well as IWC workshops on Underwater Noise and Climate Change. In addition to contributing to a range of topics and discussions addressed during meetings, CSG members submitted papers to the IWC SC highlighting and explaining both the IUCN Red Listing process for cetaceans, and ICPC.

T-012 (KSR 3)

Number of CMS Scientific Council meetings attended: 1

Result description: The CSG is represented in the CMS Scientific Advisory Group and has provided input and advice related to issues of relevance to cetaceans (bycatch, underwater noise, etc.), listing of cetacean species on CMS Appendices, and the implementation of Concerted Actions for species and populations of concern (including Arabian Sea Humpback Whales and Atlantic Humpback Dolphins, which are featured as both CSG and CMS conservation priorities).

T-013 (KSR 3)

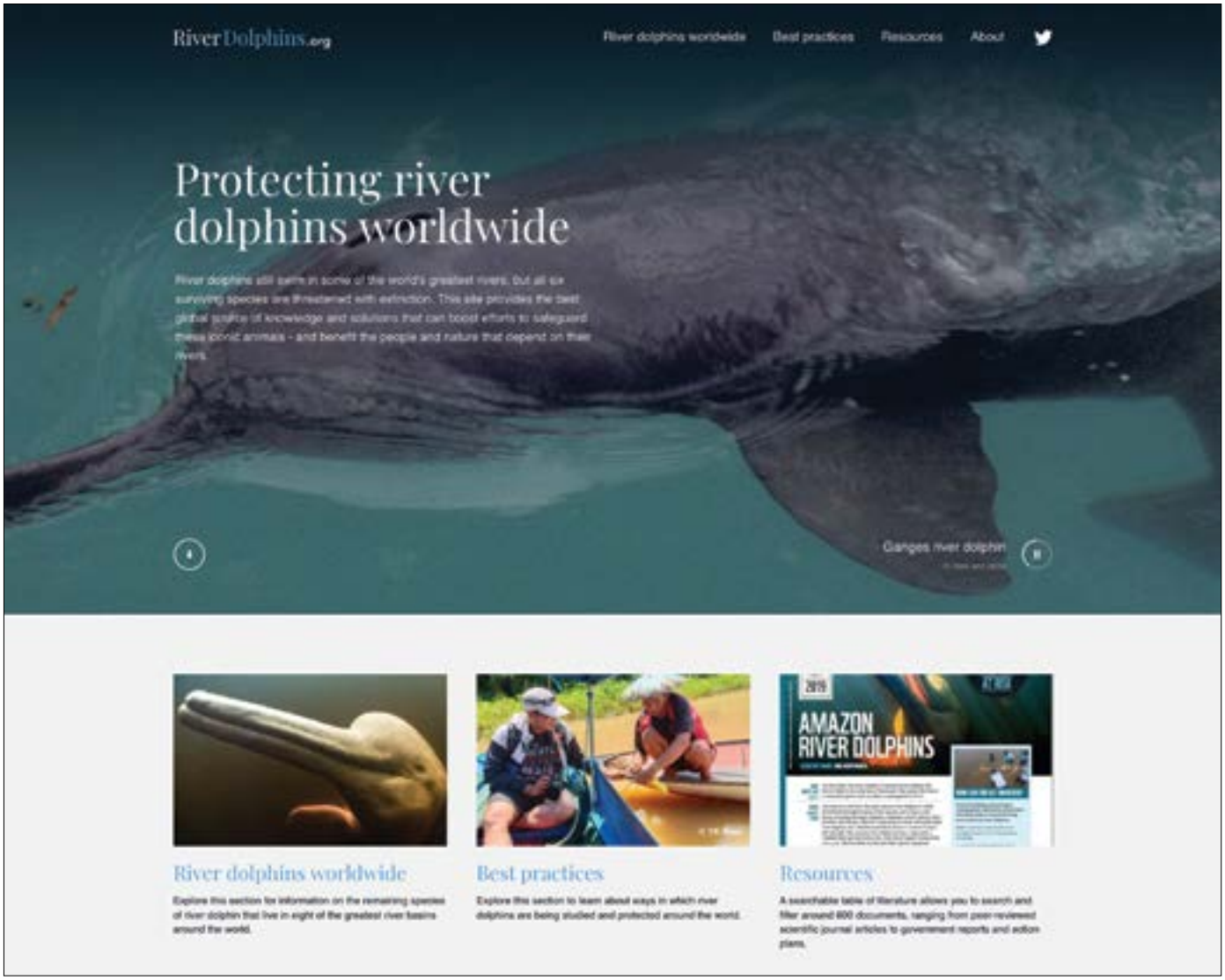
Number of requests answered: Many.

Result description: The CSG had numerous exchanges with the IUCN Global Species Programme, SSC Chair and Marine Conservation Committee (MCC) Chair regarding the Vaquita. There were numerous exchanges with the Global Species Programme to enable the Kate Sanderson grants. The CSG also provided contributions and support for various IUCN World Conservation Congress resolutions related to cetaceans and bycatch of Endangered or Threatened species, and the CSG contributed to an MCC-led cross-taxa discussion of bycatch.

T-014 (KSR 3)

Number of meetings and joint letters or consultations on cetacean conservation issues of shared concern: 1

Result description: Several CSG members continued to serve on the Society for Marine Mammalogy (SMM) Conservation



CSG members contributed to the development of the Riverdolphins.org website, that compiles a range of resources and information on conservation threats and priorities
Photo: Riverdolphins.org

Committee and participated in the review of SMM-funded conservation research proposals.

COMMUNICATE

Communication

T-016 (KSR 12)

Number of updates posted to CSG website: 7

Result description: Seven news items were posted on the CSG website in 2021 (https://iucn-csg.org/), and additional pages were added and refined with content related to Integrated Conservation Planning for Cetaceans (https://iucn-csg.org/integrated-conservation-planning-for-cetaceans-icpc/) and Focal Taxa (e.g. https://iucn-csg.org/atlantic-humpback-dolphins/).

T-018 (KSR 13)

Number of digital communication outputs developed in relation to specific taxonomic groups: 3

Result description: The CSG website and social media sites featured regular updates and news items throughout 2021 (see https://iucn-csg.org/, https://www.facebook.com/CetaceanSG and https://twitter.com/iucncetaceansg).

T-019 (KSR 13)

Number of communication products using innovative tools: 0

Result description: A short summary paper on the Red List status of cetaceans was submitted to the International Whaling Commission's Scientific Committee meeting in May 2021, and this formed a start for the longer scientific paper, which will also serve as the basis for the content of the first CSG Whole-Membership Webinar in 2022.

Acknowledgements

We acknowledge, with thanks, the support given to the Chair by the US Marine Mammal Commission for much of his CSG-related work.

Summary of achievements

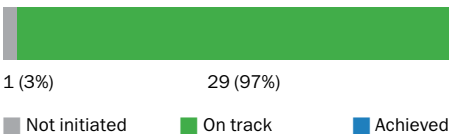
Total number of targets 2021–2025: 30

Geographic regions: 18 Global, 2 Africa, 4 America, 8 Asia

Actions during 2021:

Assess:	6 (KSR 5, 6)
Plan:	5 (KSR 8)
Act:	11 (KSR 10, 11)
Network:	5 (KSR 2, 3)
Communicate:	3 (KSR 12, 13)

Overall achievement 2021–2025:



2021 Report

IUCN SSC Deer Specialist Group





SOCIAL MEDIA AND WEBSITE
Instagram: @deerspecialistgroup
Websites: https://icneotropical.org;
https://www.**deerspecialistgroup.org**

CO-CHAIR
Susana González
Departamento de Biodiversidad y Genética, Instituto de Investigaciones Biológicas Clemente Estable, Ministerio de Educación y Cultura, Montevideo, Uruguay

CO-CHAIR
Noam Werner
The Tisch Family Zoological Gardens in Jerusalem, The Gottesman Family Israel Aquarium, Jerusalem 9126002, Israel

RED LIST AUTHORITY COORDINATOR
Mariano Gimenez Dixon (New World species)
Freelance Consultant
Anasagasti 20 64, piso 6 Buenos Aires, Argentina

NUMBER OF MEMBERS
89

Mission statement

The mission of the Deer Specialist Group (DSG) is to contribute to biodiversity conservation through improvement of the welfare and sustainability of deer populations around the world. Our challenge is to find conservation alternatives to mitigate conflict to enable rare and threatened species to survive.

Projected impact 2021–2025

The DSG has a qualified membership specialised in and researching several of these target species. To achieve our targets it will be crucial to establish collaboration and partnerships with funding agencies to support research studies and data collection.

Targets 2021–2025

ASSESS

T-001 Collect data on the existing effects and estimate possible effects of global warming on cold-climate DSG species.

T-006 Complete taxonomic studies, using molecular methods, of priority species (Indochinese Hog Deer, *Axis porcinus*; Annamite Muntjac, *Muntiacus truongsonensis*; *Mazama* spp.).

PLAN

T-004 Create protocols to mitigate human-deer conflict in various South American habitats and regions, such as the Pampas, Cerrado, open grasslands, as well as in several forested regions.

T-007 Develop and publish deer conservation translocation guidelines by the end of 2022.

NETWORK

T-002 Establish a Climate Change Working Group.

T-009 Establish DSG's visibility in social media platforms by mid-2021.

COMMUNICATE

T-003 Develop a new Deer Specialist Group website by the end of 2021.

T-008 Establish DSG's visibility in social media platforms by mid-2021.

Activities and results 2021

ASSESS

Research activities

T-006 (KSR 5)

Number of research projects completed or supported by SSC members per taxonomic group and region: 1

Result description: We continue researching, applying molecular genetics to resolve uncertain Neotropical deer taxonomy.



Pampas deer male in Uruguayan countryside
Photo: Susana González



Pampas deer in Uruguayan countryside
Photo: Susana González

At the end of 2020 and in 2021 we published several new articles: (1) Bonfim Mantellatto, A.M., González, S. and Duarte, J.M.B. 2020. Molecular identification of *Mazama* species (Cervidae: Artiodactyla) from natural history collections. *Genetics and Molecular Biology* 43(2): e20190008. https://doi.org/10.1590/1678-4685-GMB-2019-0008; (2) González, S. and Duarte, J.M.B. 2020. Speciation, evolutionary history and conservation trends of Neotropical deer. *Mastozoologia Neotropical* 27(SI): 37–47. https://doi.org/10.31687/saremMN_SI.20.27.1.05; (3) Bonfim Mantellatto, A.M., González, S. and Duarte, J.M.B. 2021. Cytochrome b sequence of the *Mazama americana jucunda* Thomas, 1913 holotype reveals *Mazama bororo* Duarte, 1996 as its junior synonym. *Genetics and Molecular Biology* 45(1):e20210093. https://doi.org/10.1590/1678-4685-GMB-2021-0093.

COMMUNICATE

Communication

T-003 (KSR 12)

Number of digital communication outputs developed in relation to specific taxonomic groups: 1

Result description: The hosting is new and the web page is almost done: **https://www.deerspecialistgroup.org**. We need to provide further photos and detail to complete it. We have obtained a small grant from SSC to support this activity and to create social media to promote and increase visibility.

T-003 (KSR 13)

Number of Species e-bulletin, Save Our Species newsletter, SSC Groups' newsletter editions produced: 1

Result description: We published Newsletter 32 in the first semester of the year.

T-008 (KSR 13)

Number of digital communication outputs developed in relation to specific taxonomic groups: 1

Result description: We opened an Instagram account (@deerspecialistgroup) to disseminate our activities, training and funding opportunities.

Acknowledgements

We thank our supporting agencies: Dirección Nacional de Servicios Ecosistémicos (DINABISE) and the Women in Science Award of the L'Oréal Foundation-UNESCO-MEC in Uruguay for Susana González's research and contribution to the advancement of scientific knowledge on Neotropical deer species. Thanks to the SSC for funding a small grant to update the website hosting and web page.

Summary of achievements

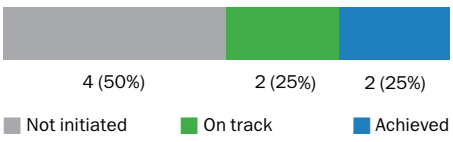
Total number of targets 2021–2025: 8

Geographic regions: 7 Global, 1 America

Actions during 2021:

Assess: 1 (KSR 5)
Communicate: 3 (KSR 12, 13)

Overall achievement 2021–2025:



IUCN SSC Equid Specialist Group





CO-CHAIR
Patricia D. Moehlman
EcoHealth Alliance, New York, New York, US; Columbia University, Adjunct Senior Research Scientist, EICES, New York, New York, US; TAWIRI, Arusha, Tanzania

CO-CHAIR
Sarah R.B. King
NREL, Warner College of Natural Resources, Colorado State University, Fort Collins, Colorado, US

RED LIST AUTHORITY COORDINATOR
Sarah R.B. King
NREL, Warner College of Natural Resources, Colorado State University, Fort Collins, Colorado, US

NUMBER OF MEMBERS
74

SOCIAL MEDIA AND WEBSITE
Facebook: IUCN/SSC Equid Specialist Group
Website: www.equids.org

Mission statement

The mission of the IUCN SSC Equid Specialist Group (ESG) is to conserve biological diversity by developing and executing programmes to study, save, restore and manage wisely wild equids and their habitats. Our greatest challenge is to improve wild equid conservation status, to sustain their ecosystems and to enhance the livelihoods of local communities.

Projected impact 2021–2025

The ESG assesses extinction risk of equid species by identifying threats and working with scientists, communities, organisations and governments to research, monitor and manage wild equid populations.

Targets 2021–2025

ASSESS

T-001 Complete Ethiopian PhD on African Wild Ass (*Equus africanus*).

T-002 Conduct taxonomic review of Equidae.

T-003 Document all known equid diseases and parasites.

T-006 Khomyn Talyn Takhi/Association TAKH (KTT/TAKH): Implement species monitoring programme that informs the trends and status of the population in Khomyn Tal National Park (KTNP).

T-008 KTT/TAKH: Develop and test hybrid Przewalski's Horse (*Equus ferus przewalskii*)/domestic detection in KTNP.

T-009 KTT/TAKH: Collaborate on a study of traditional pasture to rewilding.

T-015 Association Goviin Khulan: Research social composition and behaviour and water source use.

T-021 Grevy's Zebra (*Equus grevyi*): Complete analysis and publish results of 3rd Great Grevy's Rally.

T-024 Publish data on Serengeti Zebra causes of mortality and survival rates and reproductive rates.

T-025 Research on Asiatic Wild Ass (*Equus hemionus*) in Israel: Research association between social and genetic networks, and effect on vegetation.

T-028 Collect data on interaction between predators (lions and hyenas) and Grevy's Zebra to understand impact of predation.

T-030 African Wild Ass: Analyse data on population dynamics in relation to rainfall variability and diet.

T-032 Kiang (*Equus kiang*) and nomad livelihoods in Ladakh: Understand patterns and processes of kiang-pastoralist conflict to come up with specific mitigation measures to manage the negative interactions.

T-035 Conduct new Red List assessment of Asiatic Wild Ass based on surveys and rapid assessments 2014–2020, and information from workshop in Vilm (see Plan Component).

T-036 Based on experience of Green Status assessment of Iberian Lynx (*Lynx pardinus*), look into the potential for a Green Status assessment of the Asiatic Wild Ass.

T-044 Monitor and manage Grevy's Zebra population health.

T-045 Produce scientific publications on equid research and conservation.

PLAN

T-022 Grevy's Zebra: Organise and run 4th Great Grevy's Rally (then analyse and publish results).

T-026 Minimise the potential negative impacts of infrastructure development on Grevy's Zebra habitat and populations.



Grevy's Zebra (*Equus grevyi*) and foal
Photo: Patricia D. Moehlman

T-027 Maintain connectivity within northern Kenya for free movement of Grevy's Zebra to enhance genetic diversity.

T-031 African Wild Ass: Convene a workshop to develop a conservation action plan for African Wild Ass in Eritrea.

T-033 Kiang and nomad livelihoods in Ladakh: Engage with key stakeholders to develop customised management strategies for selected hotspots.

T-037 Conduct conservation planning and development of a Khulan Action Plan for Mongolia – WCS and partners.

T-038 Develop action plan for the Asiatic Wild Ass based on experience gained from the Khulan Conservation Strategy for Mongolia; workshop slot reserved within the Convention on Migratory Species Central Asian Mammals Initiative (CMS/CAMI) framework on the Island of Vilm, Germany.

ACT

T-005 Designate protected areas for African Wild Ass.

T-007 KTT/TAKH: Translocate four individual horses from Hustai National Park to KTNP to maintain genetic diversity of the population in KTNP.

T-016 Association Goviin Khulan: Develop curriculum about ecology and conservation for protected area rangers and community citizen scientists.

T-019 Association Goviin Khulan: Work with border troops and local community to set camera traps for Khulan (*Equus hemionus hemionus*).

T-029 Enhance recruitment rate of Grevy's Zebra (maintain 30% proportion of foals and juveniles).

T-042 Enhance inter-regional Grevy's Zebra conservation.

T-043 Enhance Grevy's Zebra conservation and habitat management.

NETWORK

T-010 KTT/TAKH: Explore becoming a member organisation of IUCN.

T-012 KTT/TAKH: Improve communication strategy towards local people in KTNP.

T-013 KTT/TAKH: Organise a post-Congress visit/workshop at Le Villaret.

T-014 KTT/TAKH: Partnerships with other reintroduction sites and twinning of National Parks.

T-018 Association Goviin Khulan: Develop ecotourism in Gobi.

T-020 Grevy's Zebra: Train all data managers to use WILDBOOK to complete a National Grevy's Zebra Database.



Przewalski's Horse
(*Equus ferus* ssp. *przewalskii*) at the
Khomyn Tal reintroduction site
Photo: Sarah King/TAKH

T-023 Grevy's Zebra: Continue support of Kenya Wildlife Service's 'Grevy's Zebra Technical Committee'.

T-034 Maintain close cooperation with partners in Central Asia via CMS/CAMI.

T-041 Develop new stakeholder partnerships and strengthen existing partnerships.

COMMUNICATE

T-004 Organise Third International Wild Equid Conference.

T-011 KTT/TAKH: Implement national and international communication strategy for Przewalski's Horses.

T-017 Association Goviin Khulan: Publish scientific articles, brochures for children and a documentary.

T-039 Contribute to CAMI news.

T-040 Produce scientific publications and presentations on equid research and conservation.

Activities and results 2021

ASSESS

Research activities

T-001 (KSR 5)

Number of research projects completed or supported by SSC members per taxonomic group and region: 1

Result description: Redwan Mohammed Yimer was awarded a doctorate from University of Addis Ababa, Ethiopia.

T-030 (KSR 5)

Number of scientific publications about species research that acknowledge SSC affiliation: 1

Result description: A scientific publication was published in *Journal of Mammalogy*.

T-044 (KSR 6)

Interventions taken to monitor/manage Grevy's Zebra health: Ongoing.

Result description: Due to extreme drought in Kenya, assessments of body condition were carried out and showed early signs of weakening. Supplementary feeding of hay at waterpoints was implemented with permission by Kenya Wildlife Services to support the most at risk subpopulations to weather the extreme conditions and to enable them to raise their foals.

PLAN

Planning

T-038 (KSR 8)

Number of conservation plans/strategies developed: 0

Result description: The CMS/CAMI workshop was planned for spring 2022, but due to the COVID-19 pandemic will have to be postponed until spring 2023. Planning is ongoing with a possible workshop location either at the Island of Vilm, Germany or in Khovd Aimag, Mongolia.

NETWORK

Synergy

T-034 (KSR 1)

Number of 'in kind' partnerships established and maintained: 1

Result description: Updating the status and distribution of Asiatic Wild Ass (*Equus hemionus*) is ongoing as is the preparation for the CMS/CAMI workshop for the global action plan. The CMS/CAMI workshop is delayed due to the pandemic, and we are discussing where to organise it in spring 2023 (rather than as planned in 2022).

COMMUNICATE

Communication

T-040 (KSR 12)

Number of presentations delivered in scientific events: 9

Result description: Nine publications focused on wild equids were published in peer-reviewed journals.

Acknowledgements

We thank the following donors that have provided funding for operations, research, training and conservation action: EcoHealth Alliance, Basel Zoo, the Government of Germany via the Secretariat of the Convention on Migratory Species (CMS), IUCN Save Our Species fund, and Little Rock Zoo. We would particularly like to thank Dr Elsa Nickel, Christiane Paulus, Oliver Schall, Clara Nobbe, Nora Marie Weyer, Remco van Merm and Anne Mugo for their contributions and support.

Summary of achievements

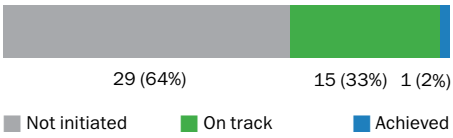
Total number of targets 2021–2025: 45

Geographic regions: 9 Global, 17 Africa, 21 Asia, 4 Europe

Actions during 2021:

Assess:	3 (KSR 5, 6)
Plan:	1 (KSR 8)
Network:	1 (KSR 1)
Communicate:	1 (KSR 12)

Overall achievement 2021–2025:



IUCN SSC Hippo Specialist Group





CO-CHAIR
Rebecca Lewison
San Diego State University, San Diego, California, US

CO-CHAIR
Jan Pluháček
Zoo Ostrava, 710 00 Ostrava, Czech Republic

NUMBER OF MEMBERS
25

SOCIAL MEDIA AND WEBSITE
Website: https://www.hipposg.org

Mission statement

We are committed to working with the global conservation network, governmental and other entities to ensure the long-term survival of the two hippo species (Common and Pygmy) and to support sustainable conservation and management of hippos across their range.

Projected impact 2021–2025

The Hippo Specialist Group (HSG) conservation actions deal with two species that face different conservation challenges. The Endangered Pygmy Hippo (*Choeropsis liberiensis*) has undergone and continues to experience declining populations due to habitat loss and human activity. The action of our group aims to stop and reverse this decline as well as to improve habitat protection. The second hippo species, Common Hippo (*Hippopotamus amphibius*), remains locally abundant in many parts of its former distribution. However, several populations, mostly in Central and West Africa, are declining and experience insufficient protection. Therefore, we aimed our conservation activities for these populations at all three aspects of the conservation cycle (assess, plan, act). We hope that our activities support the viability and survival of these populations with the potential of population recovery where needed. In addition, we are committed to strengthening cooperation and collaboration with *ex situ* stakeholders to advance conservation of both hippo species. Lastly, via our new communication platform (web pages), we provide direct information on the biology of hippo species, describe the conservation projects endorsed by HSG, as well as general information to promote conservation action of hippos.

Targets 2021–2025

ASSESS

T-005 Conduct a research project on hippos as ecosystem engineers: Habitat use, ecology and behaviour of hippos in an important waterbody of Zululand.

T-008 Reassess status and population trends of Common Hippopotamus (*Hippopotamus amphibius amphibius*) in eight West African countries.

T-011 Use innovative technologies to assess the status of key hippopotamus populations in Nigeria.

PLAN

T-010 Organise Common Hippo West African regional conservation strategy workshop.

ACT

T-003 Implement the Côte d'Ivoire Pygmy Hippo project: research and actions for the conservation of Pygmy Hippopotamus (*Choeropsis liberiensis*) in Côte d'Ivoire.

T-004 Support conservation mechanism of hippos in the Ruzizi River and Tanganyika lake in South Kivu Province, eastern Democratic Republic of the Congo.

T-006 Protect Common Hippopotamus in Luama Landscape, Democratic Republic of the Congo.

T-007 Implement the Pygmy Hippo community youth conservation volunteer programme of the Gola Rainforest National Park (GRNP), Sierra Leone.

T-009 Conduct monitoring, restauration and long term conservation of the Common Hippopotamus population in the Mbari and Chinko drainage, eastern Central African Republic.

COMMUNICATE

T-001 Establish and create new website in 2021.

T-002 Launch Facebook account.

T-012 Maintain and update the Hippo Specialist Group website.

T-013 Provide statements of Hippo Specialist Group views on current problems associated with hippos.



Common Hippo in Naivasha Lake, the place of high level of human-hippo conflict
Photo: Jan Pluháček

Activities and results 2021

ASSESS

Red List

T-011 (KSR 7)

Report: ongoing

Result description: The first part of this target was conducted from September to October 2021. At two key sites within the Benue River basin in north-eastern Nigeria (Kiri and Dadin Kowa Dam reservoirs), we conducted training programmes (capacity building); promoted education (awareness building); conducted surveys using drones to estimate hippo abundance, composition and distribution; and assessed threats to the species. We were forced to cancel survey work originally planned at one site (Kainji Dam reservoir in north-western Nigeria) due to increasing insecurity in that region. Although the research team has yet to analyse all data (which include thousands of drone images and videos), preliminary findings confirm what was suspected – that both reservoir sites are important for hippo populations in Nigeria. This is especially so for Kiri Dam reservoir, which has an estimated hippo population of about 70 individuals. This count reflects an increase over the most recent estimate of 56 individuals (Baker, L.R., et al. 2020. Common hippopotamus in Nigeria: New census data and literature review confirm the conservation importance of sites outside protected areas. *Aquatic Conservation: Marine and Freshwater Ecosystems* 30:1996–2003. https://doi.org/10.1002/aqc.3397). The observed increase was likely the result of improved survey techniques (drones), ideal survey conditions (low water levels, as the dam floodgates were open), and successful reproduction at the site. At Dadin Kowa, we estimated 35–40 hippos in the reservoir. However, water levels were notably high at the time of our study there. Locating hippos across a vast body of water and extensive flooded farmlands proved challenging. We suspect that more hippos occur in, or use, this reservoir than observed; this assertion was also supported by local reports. Observations should improve at the end of the dry season when water levels are greatly reduced; thus, a dry-season survey at this site is planned for April–May 2022. Each of the studied hippo populations reacted differently to the drone. Our tests of disturbance showed that, in general, Kiri hippos were more accustomed to noise and had limited reactions to the drone, whereas Dadin Kowa hippos appeared to react to the drone at even relatively high altitudes. Consequently, researchers should not assume that drones will similarly affect hippo populations that occur in similar habitats and under similar conditions. We recommend conducting disturbance tests for each unique population before using drones to survey hippos. In both reservoir locations, hippos are threatened by human-hippo conflict and a lack of natural grass forage, and at Kiri they are also threatened by siltation. Crop-foraging and crop destruction by hippos have led to extreme negative attitudes toward hippos, and at Kiri, hippo-caused human deaths have further exacerbated the precarious relationship between people and hippos. Land around both reservoirs (and on silted islands within the Kiri reservoir) is extensively farmed. Future conservation efforts at these sites must address crop-foraging and disruption of fishing activities by hippos and habitat degradation, as well as improve local livelihoods and promote conservation awareness. Collaboration among key stakeholders will be critical to success. Final results for this target are expected to be published in late 2022 or early 2023. These final population estimates will help the conservation community and other key stakeholders recognise the importance of these sites for hippopotamus conservation in Nigeria. It is notable that the most recent IUCN Red List assessment reported an estimated 100 hippos total across Nigeria (Lewison, R. and Pluháček, J. 2017. *Hippopotamus amphibius*. *The IUCN Red List of Threatened Species* 2017: e.T10103A18567364. https://dx.doi.org/10.2305/IUCN.UK.2017-2.RLTS.T10103A18567364.en. Accessed on 07 June 2022.), whereas these two reservoirs alone support at least that number.

A threat display from a male hippo at Kiri Dam reservoir.
Photo: Lynne R. Baker/Nigeria Hippo Project





At Dadin Kowa Dam reservoir, land around the reservoir is widely covered by guinea corn farms. There is very little natural forage for hippos
Photo: Lynne R. Baker/Nigeria Hippo Project



Director of the Adamawa State Wildlife Department identifies where hippos entered rice fields to forage at night at Kiri Dam reservoir
Photo: Lynne R. Baker/Nigeria Hippo Project

Ideal conditions for both disturbance tests and drone surveys were hippo groups that were resting mostly or fully out of water, like this group at Kiri Dam reservoir
Photo: Sarah Farinelli/Nigeria Hippo Project



Research activities

T-005 (KSR 5)

Number of scientific publications about species research that acknowledge SSC affiliation: 0

Result description: We collected field data on hippo behavioural ecology and submitted three manuscripts (chapters from the thesis of Camille Fritsch, which was completed in 2021 and is available online) that detail aspects of hippo behavioural ecology and hippo population monitoring and management for review in international peer-reviewed scientific journals.

PLAN

Policy

T-010 (KSR 9)

Number of Multilateral Environmental Agreement meetings attended by the SSC group: 0

Result description: The planning of the meeting had to be postponed due to continuation of the COVID-19 pandemic.

COMMUNICATE

Communication

T-001 (KSR 12)

New website established: Achieved.

Result description: The new web pages of the IUCN SSC Hippo Specialist Group (HSG) were established and launched at https://www.hipposg.org. The pages are currently kept in two language versions (English and Czech). Pages include the details of members, meetings, activities, projects endorsed by HSG, basic biological information for both species, the international studbooks, as well as the bibliography list for both species. The establishment of the pages was supported by our partner Ostrava Zoo and Botanical Park (Czech Republic).

T-012 (KSR 12)

Number of web page updates per month on average: 2

Result description: The new web pages of the IUCN SSC Hippo Specialist Group (HSG) were established and launched at https://www.hipposg.org in January 2021. The pages are regularly updated (at least two times per month), and are maintained in two languages (English and Czech). New sections (News, Studbooks) were established and updated in the regular way. Maintaining and updating of the pages is supported by our partner Ostrava Zoo and Botanical Park.

T-013 (KSR 12)

Number of statements provided on problems related with hippos: 1

Result description: We compiled and released a statement on free-ranging hippos in Colombia.

Acknowledgements

Leventis Foundation: Primary funder of this project. We appreciate the support of Ostrava Zoo and Botanical Park in creation and maintenance the new web pages of the Hippo Specialist Group. Our special thanks are due Markéta Gloneková for all the work associated with the new web pages.

Summary of achievements

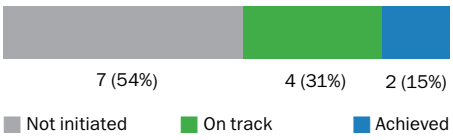
Total number of targets 2021–2025: 13

Geographic regions: 9 Africa, 2 America, 3 Europe

Actions during 2021:

Assess: 2 (KSR 5, 7)
Plan: 1 (KSR 9)
Communicate: 3 (KSR 12)

Overall achievement 2021–2025:



IUCN SSC Lagomorph Specialist Group





SOCIAL MEDIA AND WEBSITE
Twitter: @LagomorphSG
Website: https://www.lagomorphspecialistgroup.org

CO-CHAIR
Hayley Lanier
Sam Noble Museum, University of Oklahoma, Norman, Oklahoma, US

CO-CHAIR
Consuelo Lorenzo
El Colegio de la Frontera Sur, Depar-tamento de Conservación de la Biodiver-sidad, San Cristóbal de las Casas, Mexico

RED LIST AUTHORITY COORDINATOR
Andrew Smith
School of Life Sciences, Arizona State University, Tempe, Arizona, US

NUMBER OF MEMBERS
41

Mission statement

To promote the conservation and effective sustainable management of all species of lagomorph through science, education and advocacy.

Projected impact 2021–2025

During the 2021–2025 period, the Lagomorph Specialist Group (LSG) will be focused on identifying existing, new and emerging threats to lagomorphs worldwide and assessing individual species to determine their overall health and their likelihood of extinction.

Targets 2021–2025

ASSESS

T-005 Assess distribution of the Annamite Striped Rabbit *(Nesolagus timminsi)* in Viet Nam.

T-006 Expand ecological knowledge of the Sumatran Striped Rabbit (*Nesolagus net-scheri*) in order to accurately assess their current status in Sumatra.

T-008 Gather local ecological knowledge of the Annamite Striped Rabbit *(Nesolagus timminsi)*.

T-011 Improve knowledge of the distribu-tion and abundance of Chinese *Lepus*.

T-012 Survey distribution and assess conservation needs of the Hispid Hare (*Caprolagus hispidus*).

T-014 Assess the distribution and taxo-nomic boundaries of the poorly-studied *Ochotona* in China.

T-016 Monitor populations of Amami Rabbit (*Pentalagus furnessi*) in the wake of feral cat control measures.

T-017 Monitor the status of Northern Pika (*Ochotona hyperborea*) populations in Hokkaido.

T-018 Monitor population trends in Ili Pika *(Ochotona iliensis)*.

T-020 Revise Red List assessments to match improved knowledge of lagomorph systematics.

T-023 Evaluate the taxonomic boundaries and distribution of lesser-known species of *Sylvilagus* in North America and South America.

T-024 Monitor and assess the spread of Rabbit Haemorrhagic Disease Virus type 2 (RHDV2) in the Americas.

T-025 Monitor the responses of American Pika (*Ochotona princeps*) populations to climate change.

T-026 Assess success of reintroduction of Pygmy Rabbit *(Brachylagus idahoensis)* into the Columbia Basin, Washington.

T-027 Monitor the endangered subspe-cies *Sylvilagus bachmani riparius* (RBR = Riparian Brush Rabbit).

T-028 Monitor the endangered subspecies *Sylvilagus palustris hefneri* (LKMR = Lower Keys Marsh Rabbit).

T-030 Assess the population status of Tres Marias Cottontail *(Sylvilagus graysoni)*.

T-031 Assess the population status of Brush Rabbit, *Sylvilagus bachmani* (*S. b. exiguus* and *S. b. peninsularis*), in Mexico.

T-032 Assess the presence and distri-butional range of Omiltemi Cottontail *(Sylvilagus insonus)*.

T-034 Monitor distribution and population size of White-sided Jackrabbit *(Lepus callotis)*.

T-035 Assess taxonomy and climate change impacts on White-sided Jackrabbit *(Lepus callotis)*.

T-036 Census and monitor populations of Tehuantepec Jackrabbit *(Lepus flavigularis)*.

T-038 Assess genetic diversity and pop-ulation connectivity of Riverine Rabbit *(Bunolagus monticularis)*.



Ochotona hyperborean yesoensis in Daisetsu-zan. Rock pile slopes are important habitats for pikas and should be protected from development
Photo: Makoto Shinohara



Glover's Pika (*Ochotona gloveri*), Qingha Province, China
Photo: Andrew Smith

T-039 Survey and assess Ethiopian Hare *(Lepus fagani)*, Abyssinian Hare *(L. habessinicus)* and Ethiopian Highland Hare *(L. starcki)* in Ethiopia.

PLAN

T-007 Develop mitigation plans for the illegal wildlife trade on Sumatran Striped Rabbit (*Nesolagus netscheri*).

T-009 Develop a conservation plan for Sumatran Striped Rabbit (*Nesolagus netscheri*) and Annamite Striped Rabbit *(Nesolagus timminsi*).

T-037 Develop a management plan for White-sided Jackrabbit *(Lepus callotis*) that addresses captive breeding, habitat protection, and habitat corridors that maintain connectivity.

T-042 Develop and publish a new species action plan for Riverine Rabbit *(Bunolagus monticularis*).

ACT

T-010 Improve the status of European Rabbit *(Oryctolagus cuniculus)* in its native range, as a prey item of the endangered Iberian Lynx.

T-015 Stop poisoning of Plateau Pika *(Ochotona curzoniae)*.

T-029 Assess success of conservation efforts for New England Cottontail *(Sylvilagus transitionalis)*.

NETWORK

T-002 Establish a taxonomic working group for lagomorphs.

T-003 Review and expand the LSG membership.

T-013 Develop a Hispid Hare (*Caprolagus hispidus*) working group.

T-021 Recruit and train a new Red List Assessment coordinator.

T-022 Train four LSG members in Red List assessment.

T-040 Recruit scientists or managers interested in studying the *Pronolagus* species in Africa.

COMMUNICATE

T-001 Organise and run the 6th World Lagomorph Conference.

T-004 Improve coordination of information on lagomorphs to the general public through recruiting a social media point person.

T-019 Publish two annual Lagomorph Specialist Group newsletters.

T-033 Improve habitat management and public education for Volcano Rabbit (*Romerolagus diazi*).

T-043 Develop and design promotional materials to communicate priority actions for Riverine Rabbit *(Bunolagus monticularis*) to ensure stakeholder buy-in and engagement.

Activities and results 2021

ASSESS

Red List

T-020 (KSR 6)

Number of global Red List reassessments completed: 0

Result description: Red List priorities for reassessment have been identified and work will begin on the process in January 2022.

T-023 (KSR 6)

Number of new global Red List assessments completed: 0

Result description: In 2021, we completed a review of recent taxonomic updates to *Sylvilagus* taxonomy and uncovered nine newly described or resurrected species and three proposed for synonymy; we are working to prioritise several of these for Red List updates over the next year.

Research activities

T-005 (KSR 5)

Number of research projects completed or supported by SSC members per taxonomic group and region: 1

Result description: We have continued to assess Annamite Striped Rabbit (*Nesolagus timminsi*) distribution in Viet Nam. In 2021–2022, we oversaw targeted camera trap surveys in southern Viet Nam to assess the distribution of the newly recorded population in Bidoup Nui Ba National Park. Data has just come in and will be analysed in the next few weeks. This work was done in collaboration with the national park, and discussions have already taken place on how to integrate this knowledge into conservation plans.

T-006 (KSR 5)

Number of research projects completed or supported by SSC members per taxonomic group and region: 1

Result description: We have received an EDGE grant to support an island-wide assessment of camera trap data for Sumatran Striped Rabbit (*Nesolagus netscheri*). These data will be used to model the distribution of the species in Sumatra. We will also conduct surveys to assess local knowledge and to identify possible refugia which were not highlighted by camera trap data. We will also use these data to identify study areas for future targeted ecological research and monitoring. We are continuing to work with partners to assess the presence of the species in trade. In collaboration with MONITOR, we are in the process of submitting a grant proposal to the Association of Zoos & Aquariums (AZA) which would support detailed investigation into the prevalence of the species in trade in Sumatra.

T-008 (KSR 5)

Number of research projects completed or supported by SSC members per taxonomic group and region: 1

Result description: Our interview plans have been put on hold due to COVID-19 and internal travel restrictions in Viet Nam. However, we plan on launching the local knowledge surveys in the next 2–3 months. In December 2021, we secured an additional 5K for this work.

T-012 (KSR 5)

Number of research projects completed or supported by SSC members per taxonomic group and region: 2

Result description: At least two studies were conducted on the Hispid Hare (*Caprolagus hispidus*) in 2021, in Shuklaphanta National Park (ShNP) and Babai Valley in Bardiya National Park. In ShNP, Hispid Hare occurrences demonstrated a clumped distribution. Dense ground cover, dry area and distance from water sources were identified as the important habitat features of the Hispid Hare habitat (State Government – Student Research Grant). In Bardiya National Park, Hispid Hares were found in Babai Valley with pellet density of 0.011/m2 (110/ha) and a population density of 12.2 individuals/ha. Hispid Hares rely on river water availability and prefer open grassland and riverbanks where *Imperata cylindrica*, *Saccharum spontaneum* and *Cynodon dactylon* dominate for habitat use and food preference (supported from Nagao Foundation, Japan). A review manuscript for the Hispid Hare including range countries' information and a species distribution model is underway.

T-014 (KSR 5)

Number of scientific publications about species research that acknowledge SSC affiliation: 2

Result description: We participated in compiling the 'Catalogue of Mammals in China', a monograph that includes taxonomic history, distribution and major references for each extant species of mammals in China. This monograph is now in press in Science Press (Beijing). A list that includes the Latin name, English name and Chinese name of the species included in this monograph was published in *Acta Theriologica Sinica* (Wei et al. 2021). We revised several taxonomic confusions and accept the following 26 species of Pikas distributed in China: *O. flatcalvariam*, *O. huanglongensis*, *O. sacraria*, *O. syrinx*, *O. erythrotis*, *O. forresti*, *O. gloveri*, *O. iliensis*, *O. koslowi*, *O. ladacensis*, *O. macrotis*, *O. roylei*, *O. rutila*, *O. pusilla*, *O. cansus*, *O. curzoniae*, *O. dauurica*, *O. nubrica*, *O. sikimaria*, *O. thibetana*, *O. thomasi*, *O. alpina*, *O. argentata*, *O. coreana*, *O. mantchurica*, *O. pallasii*. Previous studies identified pervasive mito-nuclear conflicts in phylogenetic reconstruction in Pikas. In recent study, Ge et al. (2022) revealed that the extreme mito-nuclear discordance in *O. thibetana* was driven by ancient introgression of a mitochondrial genome from some distantly related extinct species into *O. thibetana*. Accompanying this introgression, they also identified several genes that presented as introgressed elements in nuclear genome related to hair cycling, moulting and epidermal growth, which shed light on the high phenotypic variation in pelage coloration and thickness. These results also re-synonymised *O. qionglaiensis* as part of *O. thibetana*; *O. qionglaiensis* was previously based on a mitochondrial DNA. See: Ge, D., et al. (2022). 'Ancient introgression underlying the unusual mito-nuclear discordance and coat phenotypic variation in the Moupin pika'. *Diversity and Distributions*. https://doi.org/10.1111/ddi.13479; Wei et al. 2021. Catalogue of mammals in China(2021). *Acta Theriologica Sinica* 41(5): 487–501.

T-017 (KSR 5)

Number of research projects completed or supported by SSC members per taxonomic group and region: 1

Result description: The Japanese Pika Fan Club has been working for 27 years to conserve habitats of pikas, *Ochotona*



Ochotona hyperborean yesoensis in Hidaka mountains.
In the fall pikas are busy carrying plants to store for winter food
Photo: Tetsunori Matsuda



Plateau Pika (*Ochotona curzoniae*),
Qinghai Province, China
Photo: Andrew Smith

hyperborea yesoensis, which inhabit the mountain areas of Hokkaido, the northernmost islands in Japan. In 2021, the Hokkaido Government decided to expand the road width for traffic convenience in Daisetsuzan National Park. As the construction would destroy the important habitats of pikas and native alpine plants, the Pika Fan Club protested against it and negotiated with the government. As a result the government is considering alternative options for traffic safety and the habitats will be conserved.

T-024 (KSR 5)

Number of research projects completed or supported by SSC members per taxonomic group and region: 2

Result description: In Summer 2021, we undertook a review of available RHDV2 mortality events to assess the potential for differential mortality among lagomorphs in the Americas. In the United States, five native species have been documented as susceptible to RHDV2: Black-tailed Jackrabbit *(Lepus californicus*) and Desert Cottontail *(Sylvilagus auduboni*), which together comprise around 89% of mortality events, and Antelope Jackrabbit *(L. alleni*), Eastern Cottontail (*S. floridanus*) and Mountain Cottontail *(S. nuttalli*), which comprise a total of 13% of mortality events. Assuming these species identifications are correct, this suggests species may be differentially susceptible to the disease. In December 2021 in Ojinaga (in the Chihuahuan desert) and nearby Chihuahua, no rabbits or hares were observed; a population monitoring study is necessary and to evaluate whether it is due to the effects of the spread of RHDV2 or population fluctuation (information obtained from Jesús Fernández, Universidad Autónoma de Chihuahua).

T-025 (KSR 5)

Number of research projects completed or supported by SSC members per taxonomic group and region: 2

Result description: Two research papers were published in 2021 that provided more information on the responses of the American Pika (*Ochotona princeps*) to climate change. Modelling of site occupancy suggests that warmer temperatures in both summer and winter are associated with lower occupancy, lower abundance, and elevational retraction, and the results indicate that summer heat stress and summer precipitation best explain areas of low-elevation retraction (Billman, P.D., et al. (2021). 'Factors influencing distributional shifts and abundance at the range core of a climate-sensitive mammal'. *Global Change Biology* 27:4498–4515. https://doi.org/10.1111/gcb.15793). Genomic data also indicate latitude-specific differences in migration, with greater dispersal among low elevation populations at higher latitudes where environments are generally cooler (Schmidt, D.A., et al. (2021). 'Genome-wide analysis reveals associations between climate and regional patterns of adaptive divergence and dispersal in American pikas'. *Heredity* 127:443–454. https://doi.org/10.1038/s41437-021-00472-3).

T-026 (KSR 5)

Number of research projects completed or supported by SSC members per taxonomic group and region: 1

Result description: After 11 years of captive breeding plus eight years of an *in situ* breeding programme, Pygmy Rabbits *(Brachylagus idahoensis)* were re-established in the Columbia Basin of Washington, US, in three isolated recovery areas (Sagebrush Flat Wildlife Area, Beezley Hills Recovery Area and Chester Butte/Burton Draw Recovery Area) with suitable deep soil sagebrush habitat in historically occupied sites. During 2020, Pygmy Rabbits were captured from neighbouring states (19 in Idaho and seven in Nevada) and translocated into *in situ* breeding programme for the Columbia Basin population. Unfortunately, the recovery effort sustained a setback in September 2020, when a hot wildfire (the Pearl Hill/Cold Springs wildfire) burnt >170,000 ha of habitat. All suitable shrub-steppe habitat in the Chester Butte/Burton Draw Recovery Area was lost, including two breeding enclosures, four release/acclimation pens, and all wild/free-ranging rabbits occupying an area of approximately 400 ha. This loss represented almost half of all Columbia Basin Pygmy Rabbits. Although the number of individuals in the wild and breeding enclosures is currently low, no additional translocations are planned for 2022 due to COVID-19 restrictions and concerns about rabbit haemorrhagic fever (RHDV2). The translocated Pygmy Rabbits and resident Columbia Basin Rabbits in the remaining *in situ* breeding programme produced 66 young during the 2021 breeding season. This reproductive output was slightly lower than the previous year's production, mostly due to the loss of breeding enclosures during the 2020 fire. During the 2021 breeding season, 33 young were retained for breeding while another 33 were released into acclimation pens at a single recovery area, Beezley Hills. In March 2021, a new subpopulation of Pygmy Rabbits was identified about six km north-east of the Sagebrush Flat wildlife area. Rabbits in this population were determined to be offspring of migrants from Sagebrush Flat. During summer 2018, summer monitoring was established in addition to winter monitoring of wild populations across all recovery areas. Through summer monitoring (2021), Pygmy Rabbits were determined to be expanding their range across the Beezley Hills recovery area and new wild born young were identified. Beginning in 2020, vaccines for RHDV2 were administered to all adults and juveniles within breeding enclosures, and this effort has continued through 2021. Additionally, during 2021, vaccination of any captured wild rabbits began across all recovery areas. Recent genetic work has contributed to monitoring efforts, assessing persistence of Columbia Basin ancestry in the population, and

investigating genomic diversity across the species' range. Using 12,084 single nucleotide polymorphisms (SNPs), Nerkowski (2021) identified four distinct genetic groups: (1) Washington, (2) Great Basin (California, Nevada, Idaho, Montana), (3) northern Utah/Wyoming and (4) southern Utah. The Washington population was most divergent compared to the other genetic groups, reinforcing its federal protected status as a distinct population segment. Utilising this data, a new genomic panel, consisting of 497 SNPs, has been designed to monitor the Columbia Basin population for individual identity, parentage, ancestry, and locally adaptive regions of the genome. See: Nerkowski, S.A. (2021). 'A rabbit's tale: Genetic monitoring, genomic diversity, and habitat selection in the endangered Columbia Basin Pygmy Rabbit (*Brachylagus idahoensis*)'. PhD Dissertation. Moscow, Idaho: University of Idaho.

T-027 (KSR 5)

Number of research projects completed or supported by SSC members per taxonomic group and region: 2

Result description: Out of great concern regarding the potential catastrophic impact of RHDV2 on Riparian Brush Rabbit (RBR, *Sylvilagus bachmani riparius*), the US Fish and Wildlife Service (USFWS), California Department of Fish and Wildlife, Oakland Zoo and other partners marshalled forces and collaborated to vaccinate members of this wild population. The ad hoc group vaccinated a total of 586 RBR during spring and fall vaccination drives in 2020–2021. This major effort required finding and acquiring imported vaccine, setting 80–120 traps for hundreds of trap-hours, and deploying a skilled team to quickly handle, vaccinate, tag, take samples, and release RBR. Recognising that a sound population estimate would be essential for taking additional recovery actions, the USFWS enlisted an Independent Researcher/Quantitative Ecology to analyse the population size within the restored habitat of the San Joaquin River National Wildlife Refuge using the Refuge's camera survey data. The USFWS then used additional data and applied the protocol across the Refuge to produce a statistically sound population estimate for the Refuge – which is by far the largest and most robust population of RBR. Population estimates ranged from 2,223 to 3,532 animals from summer through spring 2020–2021.

T-028 (KSR 5)

Number of research projects completed or supported by SSC members per taxonomic group and region: 0

Result description: While previous surveys have been conducted, none were undertaken in 2021 due to funding constraints. Several applications are pending to support efforts in 2022.

T-034 (KSR 5)

Number of research projects completed or supported by SSC members per taxonomic group and region: 0

Result description: Although data on the White-sided Jackrabbit was previously collected, progress in 2021 was delayed due to the COVID-19 pandemic and a lack of funding/support for monitoring needs.

PLAN

Planning

T-009 (KSR 8)

Number of conservation plans/strategies developed: 0

Result description: We continue to work towards a conservation plan for both species. For Annamite Striped Rabbit (*Nesolagus timminsi*) this includes all of the components mentioned above – increasing knowledge on distribution, investigating local ecological knowledge – and will likely include, in 2022, an overview of how often the species comes into trade. So, while a formal plan has not been produced, we are closer to this goal. For Sumatran Striped Rabbit (*Nesolagus netscheri*), this year we are in the process of compiling all available knowledge on the distribution, ecology and threats to the species, and will use this information to produce the first evidence-based assessment of the species status in Sumatra. This is integral to ensuring that the species is moved from a Data Deficient status. This will also form the foundation for the generation of a conservation plan for the species.

ACT

Conservation actions

T-010 (KSR 10)

Number of actions addressing major drivers/emerging threats of species or population loss: 1

Result description: In 2021, the LIFE Project 'Iberconejo' was initiated, led by LSG members Miguel Delibes Mateos and Rafael Villafuerte. This WWF project, set to run from 2021–2024, aims to create a global Iberian governance structure responsible for a coordinated European rabbit management in the Iberian Peninsula by implementing consensual management and monitoring protocols involving all partners and stakeholders.

T-029 (KSR 10)

Number of threatened species benefiting from *in situ* conservation action: 1

Result description: In 2021, an evaluation of New England Cottontail (NEC, *Sylvilagus transitionalis*) habitat found that of patches managed for NEC, most are unlikely to support populations at present and many are unlikely to do so in future due to habitat. "Of the 55 sites visited, 11 were considered "rabbit ready" (considered suitable for NECs), 12 were "moving toward suitability", 18 were "too soon to project suitability", 13 were "unlikely to develop essential features required by NEC", and one was not designated because of varied conditions" (Litvaitis et al. 2021. Addressing the Early-Successional Habitat Needs of At-Risk Species on Privately Owned Lands in the Eastern United States'. *Land* 10:1116. https://doi.org/10.3390/land10111116). Unpublished research presented at this year's technical committee meeting found that NEC density is unrelated to time since management. Additionally, metapopulations in Maine and New Hampshire estimated from density support genetic assertions of small population size in these states: "metapopulation-scale abundance estimates of 97 (78–125) NEC on 278 ha of occupied habitat in Cape Elizabeth and 43 (29–65) NEC on 56 ha in Londonderry". Analysis of regional occupancy data is providing clear evidence that larger patch area was very important for NEC occupancy, whereas Eastern Cottontails (EC, *Sylvilagus floridanus*) occupy patches of all size. Landscape models confirm that NEC colonisation is very low. Estimates of NEC colonisation drop to zero at about 3 km, whereas EC colonisation is low but does not drop to zero until greater than 15 km. Together, recent findings suggest a declining conservation outlook for NEC, and work is underway to reassess this species threat status for the IUCN Red List.

NETWORK

Capacity building

T-013 (KSR 4)

Development of a Hispid Hare Working Group: 1

Result description: In 2021, Dr Nishma Dahal established the Hispid Hare Working Group, to focus on conservation planning for the Hispid Hare (*Caprolagus hispidus*). Future activities will include an initial planning and prioritisation meeting, collecting of population and ecological data, and joint efforts to improve conservation status for this species.



Annamite Striped Rabbit (*Nesolagus timminsi*) camera trap photo taken in central Vietnam
Photo: Andrew Tilker (Re:wild / WWF-VN / SNRs)

T-021 (KSR 2)

Number of people trained in assessment tools: 0

Result description: Two individuals have been approached about training in the Red Listing process, and we are working to recruit additional individuals. From there we intend to identify one who will become the new Red List Assessment coordinator, likely stepping into the role in 2023.

T-022 (KSR 2)

Number of people trained in assessment tools: 2

Result description: Two LSG members have been approached for training, and additional recruitment will occur during the 2022 World Lagomorph Conference and in 2022 newsletters.

Membership

T-002 (KSR 2)

Number of SSC members recruited: 2

Result description: Two members have been recruited for an LSG Taxonomic Working Group, and we will approach more at the 2022 World Lagomorph Conference.

T-003 (KSR 2)

Number of SSC members recruited: 4

Result description: We added four new members in 2021, with invitations extended to younger members, members with unique expertise, and members who provide greater diversity in the membership of the LSG.

T-040 (KSR 2)

Number of SSC members recruited: 0

Result description: Still no progress on finding members interested in studying *Pronolagus*.

COMMUNICATE

Communication

T-001 (KSR 13)

Number of SSC members' presentations developed in relation to specific taxonomic groups: 0

Result description: The 6th World Lagomorph Conference is currently scheduled for summer 2022, and we are working to ensure broad representation from a diverse group of researchers for the meetings.

T-004 (KSR 13)

Number of digital communication outputs developed in relation to specific taxonomic groups: 2

Result description: A social media account was created on Twitter and an initial social media point person is in place; we have plans to recruit more individuals within the LSG to contribute content over the next year.

T-019 (KSR 12)

Number of Species e-bulletin, Save Our Species newsletter, SSC Groups' newsletter editions produced: 1

Result description: One newsletter update has been shared with the Lagomorph Specialist group in 2021.

T-043 (KSR 13)

Number of print communications materials distributed in relation to specific taxonomic groups: 0

Result description: Due to COVID-19 restrictions, communications strategies in 2021 focused on digital media.

T-043 (KSR 13)

Number of digital communication outputs developed in relation to specific taxonomic groups: 2

Result description: A Riverine Rabbit *(Bunolagus monticularis)* identification card was distributed on digital platforms to show how to distinguish Riverine Rabbits from the other lagomorphs in South Africa. The identification card was distributed on social media and via farmers association WhatsApp groups. Over 6,300 people were reached through this awareness campaign. We are currently producing a rabbit vs hare poster to help the general public distinguish between the different species. The Endangered Wildlife Trust (EWT) also launched a public participation campaign on 9 February 2021 to encourage landowners and tourists to submit any images of rabbits and hares, in an attempt to create awareness and potentially find new localities for the distribution of Riverine Rabbits. The identification card was distributed through influential stakeholders within the study areas, as well as on social media. Over 17,500 people were reached through this campaign. Where possible, the identification card was attached with the campaign image. The EWT is also developing a 'Lagomorphs of the Drylands' poster that will be distributed in 2022. The poster shows the public how to distinguish between Riverine Rabbits and the other lagomorph species in the Karoo (arid areas) of South Africa. It also provides suggestions to landowners on how they can help conserve Riverine Rabbits on their property.

Acknowledgements

Re:wild: Re:wild has been providing support to fund the search for the missing Omiltemi Cottontail rabbit in Mexico. SEE Foundation Silk Road Project Centre: The SEE Foundation Silk Road Project Centre provided funding to support a comprehensive evaluation of the survival status of Ili Pika for the past 20 years. LIFE: The LIFE Project 'Iberconejo' supports coordinated European rabbit management in the Iberian Peninsula by implementing consensual management and monitoring protocols involving all partners and stakeholders.

Summary of achievements

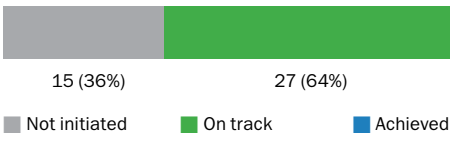
Total number of targets 2021–2025: 42

Geographic regions: 8 Global, 5 Africa, 15 America, 13 Asia, 1 Europe

Actions during 2021:

Assess:	14 (KSR 5, 6)
Plan:	1 (KSR 8)
Act:	2 (KSR 10)
Network:	6 (KSR 2, 4)
Communicate:	5 (KSR 12, 13)

Overall achievement 2021–2025:



IUCN SSC Large Carnivore Initiative for Europe Specialist Group



CHAIR
Luigi Boitani
University of Rome Sapienza, Roma, Italy

NUMBER OF MEMBERS
57

SOCIAL MEDIA AND WEBSITE
Facebook: @LCIEIUCN
Website: https://www.lcie.org

Mission statement

Maintain and restore, in coexistence with people, viable populations of large carnivores as an integral part of ecosystems and landscapes across Europe.

Projected impact 2021–2025

The Large Carnivore Initiative for Europe (LCIE) works to improve the management of six species of large carnivores in Europe. The LCIE provides updated data on species presence and abundance and supports management through the technical guidelines on best practices to enhance the coexistence of carnivores and human economic activities.

Targets 2021–2025

ASSESS

T-013 Update Status of Large Carnivores for Europe for the period 2017–2021.

T-014 Conduct Green Status assessment for Iberian Lynx (*Lynx pardinus*).

T-015 Based on experience of Green Status assessment of Iberian Lynx, follow up with Green Status assessments of the other large carnivores at European scale.

T-016 Produce report on the greatest misconceptions/fake news concerning large carnivores.

T-017 Analyse the impact of infrastructure development and produce a guidance report.

T-018 Update status and distribution maps of large carnivores for Europe for the period 2017–2024 and publish a report in 2025.

T-019 Streamline data collection and publication for Large Carnivore Status and Distribution in Europe.

PLAN

T-001 Ensure regular inclusion of policy statements, guidelines and publications on the LCIE webpage.

T-020 Produce an updated vision for conservation goals for large carnivores in Europe, including a vision for the nature of human-large carnivore coexistence.

T-021 Identify the 'neglected' populations (e.g. Balkans) and define/plan priorities for action by LCIE and authorities.

T-022 In view of the continuing expansion of some wolf and bear populations, propose a more robust way to define/draw the line between different populations.

T-023 Influence national and EU policies which support the coexistence between large carnivores and humans.

ACT

T-024 Identify key emerging challenges to reaching the goal of human-carnivore coexistence.

T-025 Hybridisation of wolves with dogs and proper dogs management: provide recommendations at national levels, scientific paper with evidence of interventions, guidelines on detection and estimation of hybrid presence.



Endangered Iberian Lynx (*Lynx pardinus*),
El Acebuche Breeding Center, Doñana National Park, Matalascañas (Huelva), Spain
Photo: Alexander Sliwa



T-026 Revise guidelines on how to manage 'bold wolves' based on hard data and experience from different countries.

T-027 Produce a report on the ecological benefits of large carnivores on ecosystems and economic benefits to rural development.

T-028 Produce a report on management of long-distance dispersers.

T-029 Produce a report on rehabilitation and release of large carnivores, touching on all aspects of rehabilitation of rescued animals (e.g. large carnivores injured in car accidents or snares, orphaned large carnivore young because of human activity) and guidelines (when, where and how to help).

NETWORK

T-005 Reach out to and engage with major European conservation NGOs and open dialogue on common goals.

T-006 Create a list of potential external collaborators in different topics of large carnivore management, research and monitoring.

T-007 Form taxonomic and/or geographic subgroups in which each member will take part.

T-008 Implement a more effective method of communication between LCIE members.

T-009 Work in close cooperation with the Cat Specialist Group for Iberian Lynx reassessment.

T-010 Work in close cooperation with other large carnivore assessment and mapping initiatives.

T-011 Improve communication and collaboration with national and international authorities for large carnivore conservation and management.

T-012 Maintain and expand the LCIE role as advisor of the European Commission on large carnivore policy.

COMMUNICATE

T-002 Post news regularly on the LCIE Facebook page.

T-003 Participate in public talks and webinars on large carnivores.

T-004 Investigate new communication tools (podcasts, blogs, videos, etc.).

Activities and results 2021

PLAN

Policy

T-001 (KSR 9)

Number of documents provided to support/guide policy making: 0

Result description: This is an ongoing activity as we publish on our website reports and guidelines produced by other organisations and endorsed by our group.

T-020 (KSR 9)

Number of policies where SSC members provided technical input: ongoing

Result description: An ad hoc working group and chair are established.

NETWORK

Capacity building

T-007 (KSR 2)

More frequent and better exchange within the group: Achieved.

Result description: The group has been organised into 15 taxonomic and geographic subgroups tasked with the production of a variety of outputs (papers, assessments, position statements, etc.).

T-008 (KSR 2)

More frequent and better exchange within the group: Ongoing.

Result description: An ad hoc subgroup and chair have been established to implement a more effective method of communication between LCIE members.

Summary of achievements

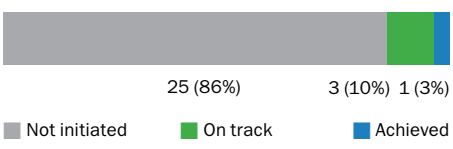
Total number of targets 2021–2025: 29

Geographic regions: 29 Europe

Actions during 2021:

Plan: 2 (KSR 9)
Network: 2 (KSR 2)

Overall achievement 2021–2025:



IUCN SSC Otter Specialist Group





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Twitter: @IUCN_OSG
Websites: https://www.otterspecialistgroup.org; https://www.himalayanotternetwork.org

NUMBER OF MEMBERS
290

Mission statement

The Otter Specialist Group (OSG), founded in 1974: (1) provides leadership for the conservation of all 13 otter species; (2) determines and reviews on a continuing basis the status and needs of otters, and promotes the implementation of necessary research, conservation and management programmes by appropriate organisations and governments; (3) communicates the status and conservation needs of otters and promotes the wise management of otter species.

Projected impact 2021–2025

Not stated.

Targets 2021–2025

ASSESS

T-014 Ensure affiliation to OSG is mentioned in peer-reviewed papers.

T-015 Conduct Red List assessment for the Eurasian Otter (*Lutra lutra*) in Bangladesh, Indonesia, Cambodia, Myanmar, Malaysia, Lebanon, Borneo, Indonesia, Turkmenistan, Kyrgyzstan, Kazakstan, Azerbaijan, Syria, Mongolia, Jordan, Iran and Japan.

T-016 Conduct Red List assessment for the Eurasian Otter in Morocco, Algeria and Tunisia.



Eurasian Otter (*Lutra lutra*)
Photo: Carol Bennetto



Congo Clawless Otter (*Aonyx congicus*)
Photo: Glen & Rita Chapman



African Clawless Otter (*Aonyx capensis*)
Photo: Rowan Jordaan

T-017 Conduct Red List assessment for the Eurasian Otter in non-EU European countries.

T-018 Assess impact of hunting on North American River Otter (*Lontra canadensis*) in the USA.

T-019 Assess impact of hunting on Smooth-coated Otter (*Lutrogale perspicillata*) in Iraq.

T-020 Assess impact of hunting on Smooth-coated Otter in the Russian Federation.

T-021 Circulate a questionnaire to members on climate change impacts.

T-022 Complete Red List assessment of all 13 otter species.

T-023 Make Red List training mandatory for assessors and the management team.

T-024 Assess threats to otter species in Sikkim, India and other key areas in the Himalayan region.

T-039 Complete Green Status assessment for all species.

PLAN

T-027 Expand Sea Otter (*Enhydra lutris*) plan.

T-028 Develop the Himalayan Otter Conservation Strategy.

T-029 Develop an action plan for endangered and/or isolated populations of Eurasian Otter.

T-030 Develop an action plan for endangered and/or isolated populations of Eurasian Otter in Africa.

T-031 Survey conservation plans already planned.

T-032 Ensure every threatened species has a plan.

T-033 Include plans with the Conservation Planning Specialist Group (CPSG) in the SSC library.

T-034 Conduct a funding search for the Otters of Nepal book for community conservation.

T-035 Plan a Sea Otter and River Otter conservation meeting.

T-037 Develop a conservation strategy for the Eurasian Otter in the Alps.

T-038 Use GSP guidelines on IUCN engagement in global policies (Convention on Biological Diversity (CBD), CITES, Convention on Migratory Species (CMS)) to help OSG members to be engaged in national policies.

T-040 Develop conservation plans for critical areas: Borneo as species hotspot.

T-041 Develop conservation plans for critical areas: sub-Saharan Africa.

T-057 Develop a Nepal Otter Action Plan.

T-064 Produce a mini-version of the World Otter Conservation Strategy for broader distribution.

T-065 Write and distribute How to Save an Otter conservation planning methodology book.

ACT

T-025 **Enact** Citizen Science initiatives in Asia.

T-026 **Enact** Citizen Science initiatives in Africa.

T-042 Reschedule meeting in Singapore to 2021 to set up a wildlife trade monitoring plan: Local actions to enhance otter conservation in key otter trade source and consumer countries.

T-043 Launch two OSG research projects in South Africa, Uganda and Benin.

T-044 Develop eDNA probes for freshwater otter species.

T-045 Develop a standard survey protocol and guidelines for Asian species.

T-046 Develop a standard survey protocol and guidelines for African species.

T-047 Test and implement eDNA monitoring of Eurasian Otter (Himalaya, India, Nepal, Italy).

T-048 Prepare background materials for proposal to list Hairy-nosed Otter (*Lutra sumatrana*) on CITES Appendix I.

T-049 Develop Google Map of OSG research and conservation actions worldwide.

T-050 Sustain and expand the Himalayan Otter Network.

T-051 Expand the Lighthouse project experience to hotspot critical areas.

T-052 Promote an African Otter Network.

T-053 Promote an Alpine Otter Network.

T-054 Prepare updated version of the 1983 CITES otter identification manual.

T-055 Control pet trade for Asian Small-clawed Otter (*Aonyx cinereus*) and Smooth-coated Otter.

T-056 Promote research on emerging threats in freshwater habitats.

T-071 Prepare new guidelines for otters in captivity.

NETWORK

T-001 Promote funding of projects in Africa.

T-002 Promote funding of projects on pet trade in Asia (Indonesia, China, India, Nepal).

T-003 Trace distribution of partnerships across assess, plan, act, network and communicate.

T-004 OSG Otter Partners: extend participation in OSG activities to otter supporters and NGOs. Create guidelines for this new form of OSG membership.

T-005 Establish in kind partnerships with local governments and NGOs.

T-006 Carry out members survey.



Smooth-coated Otter (*Lutrogale perspicillata*)
Photo: Atul Sinai Borker

T-007 Identify gaps in OSG skills.

T-008 Strengthen collaboration with other IUCN components (IUCN National Committees, Freshwater Conservation Committee, Climate Change Specialist Group, Conservation Planning Specialist Group).

T-009 Survey and map OSG projects.

T-010 Support European Union-funded projects for otters.

T-011 Involve research institutions, associations, zoos, NGOs, national parks and Veterinarian Health Service in roadkill collection and necropsies.

T-012 Train in conservation planning.

T-013 Document on threats to freshwater species.

T-036 Expand involvement with Association of Zoos & Aquariums (AZA), European Association of Zoos and Aquaria (EAZA), World Association of Zoos and Aquariums (WAZA) and One Plan approach.

T-068 Build capacity of people involved in projects in Africa.

COMMUNICATE

T-058 Expand World Otter Day community celebrations on multimedia.

T-059 Expand World Otter Day community celebrations in Asia.

T-060 Expand World Otter Day community celebrations in North America and Canada.

T-061 Expand World Otter Day community celebrations in Central and South America.

T-062 Expand World Otter Day community celebrations in Europe.

T-063 Giant Otter (*Pteronura brasiliensis*) day village celebrations in Peru and Brazil.

T-066 Expand available OSG otter educational materials to new countries and languages.

T-067 Strengthen the collaboration with IUCN One Programme and work more closely with the Commission on Education and Communication.

T-069 Hold the XVth International Otter Congress.

T-070 Establish an OSG Newsletter.

T-072 Publish OSG Bulletin regularly.

Activities and results 2021

ASSESS

Green Status

T-039 (KSR 6)

Number of new Green Status of Species assessments completed: 5

Result description: The Green Status assessment of the Eurasian Otter has been published. The assessment for Hairy-nosed Otter is under revision. Assessments have been drafted for Neotropical Otter (*Lontra longicaudis*), Congo Clawless Otter (*Aonyx congicus*) and Marine Otter (*Lontra felina*).

Red List

T-016 (KSR 6)

Number of new national Red List assessments published: 0

Result description: We are collecting information and appointing a new member for Morocco.

T-017 (KSR 6)

Number of new national Red List assessments published: 0

Result description: The first Eurasian Otter Workshop was held online 26–28 February 2021. The workshop was attended by 476 participants from 52 countries, including the non-EU countries Norway, Switzerland, Montenegro and North Macedonia.

Research activities

T-014 (KSR 5)

Number of scientific publications about species research that acknowledge SSC affiliation: 1

Result description: Membership acknowledged in Lerone, L., et al. (2022). 'A Noninvasive Genetic Insight into the Spatial and Social Organization of an Endangered Population of the Eurasian Otter (*Lutra lutra*, Mustelidae, Carnivora)'. *Sustainability* 14(4):1943. https://doi.org/10.3390/su14041943.

T-021 (KSR 6)

Number of new climate change vulnerability assessments completed: Ongoing.



Marine Otter (*Lontra felina*)
Photo: Kevin Schaffer



North American River Otter (*Lontra canadensis*)
Photo: M. L. Haring

Result description: Contacts established with Climate Change Task Force for support to design the questionnaire.

T-022 (KSR 6)

Number of species that have been assessed through the different tools: 13

Result description: Thirteen species were assessed through the global Red List.

T-023 (KSR 6)

Number of species that have been assessed through the different tools: 0

Result description: A session on Red List assessment is planned at the XVth International Otter Congress, to be held in Sospel, France, 19–23 September 2022.

PLAN

Planning

T-027 (KSR 8)

Number of conservation plans/strategies developed: 1

Result description: In 2021, OSG joined the Sea Otter Reintroduction Study Group (SORSG) to discuss outreach aspects of the potential reintroduction of Sea Otters to habitats of the Pacific coast where they remain absent from their historical range. An OSG meeting on Sea Otter was planned in 2019 and then postponed due to the pandemic.

T-028 (KSR 8)

Number of conservation plans/strategies developed: 0

Result description: An action plan for Nepal is on the way.

T-035 (KSR 8)

Number of conservation plans/strategies developed: 1

Result description: An 'hybrid' joint Sea Otter/North American River Otter conference is planned for spring 2022.

T-041 (KSR 8)

Number of conservation plans/strategies developed: 1

Result description: OSG projects were funded in Benin and Uganda.

Policy

T-037 (KSR 9)

Number of policies where SSC members provided technical input: 0

Result description: OSG supported Gran Paradiso National Park in the organisation of an international meeting in 2018, setting the base for an Alpine otter network. The meeting ended with IUCN OSG 'Otters in the Alps Manifesto'. A next meeting is planned for 2022, involving all national parks in the Alpine range. WWF Italia is funding an otter survey in Italian Alpine regions, guided by OSG.

T-038 (KSR 9)

Number of policies in which OSG has been engaged: 1

Result description: IUCN World Conservation Congress resolution WCC-2020-Res-098 mentions Hairy-nosed Otter (*Lutra sumatrana*) needs to be uplisted to CITES Appendix I.

ACT

Conservation actions

T-049 (KSR 10)

Number of areas under management for the species or group of species: 1

Result description: A meeting was held on 24 March to set a collaboration with a GIS expert team to initiate the mapping of conservation projects. An inventory of projects has been set through the OSG Bulletin archives.

T-055 (KSR 10)

Number of threatened species benefiting from *in situ* conservation action: 0

Result description: A draft of the proposal for CITES upgrading of Hairy-nosed Otter (*Lutra sumatrana*) was written. We are in contact with trade countries (Thailand, Cambodia).

Policy

T-056 (KSR 10)

Number of position statements addressing major drivers/emerging threats of species or population loss: 1

Result description: We have been networking with the Freshwater Specialist Groups and Freshwater Conservation Coordinator Monika Bohm of the Global Center for Species Survival. The Hairy-nosed Otter (*Lutra sumatrana*) has been included in the Freshwater Conservation Committee publication, *Fantastic Freshwater: 50 landmark species for conservation*.

Technical advice

T-043 (KSR 10)

Number of technical consultations provided to support conservation actions: 2

Result description: Research funded by OSG in Benin is ongoing (total US$ 3,000).

A project was funded in Lake Bunyonyi, Uganda (total US$ 952), in partnership between Green Mountain Initiative led by Twinamasiko Luke and Wild Otters Research led by Katrina Fernandez.

T-044 (KSR 10)

Number of technical consultations provided to support conservation actions: 2

Result description: A probe for Eurasian Otter (*Lutra lutra*) was tested in Italy and Himalayan rivers. A funded project on eDNA in Italian freshwater species was approved.

T-047 (KSR 10)

Number of technical consultations provided to support conservation actions: 1

Result description: An eDNA survey of Eurasian Otter (*Lutra lutra*) was run in Italy and Himalayan rivers. Results are already published for Italy (Jamwal, P.S., et al. 2021. 'First assessment of eDNA-based detection approach to monitor the presence of Eurasian otter in Southern Italy'. *Hystrix, the Italian Journal of Mammalogy* 32(2):176–181. https://doi.org/10.4404/hystrix-00401-2020).

T-048 (KSR 10)

Number of technical consultations provided to support conservation actions: 1

Result description: The following documents were drafted and submitted: (1) Hairy-nosed Otter CITES Appendix I DRAFT Proposal; (2) Hairy-nosed Otter fact sheet for CITES; (3) IUCN OSG otter letter to request support from Malaysian Ministry of Water, Land and Natural Resources; (4) e-mail to Emma Vovk, Programme Officer – Sustainable Use and Trade in the IUCN Global Species Programme.

T-052 (KSR 10)

Number of technical consultations provided to support conservation actions: 0

Result description: We are developing projects in Benin and Uganda. A new continental representative was appointed.

T-053 (KSR 10)

Number of technical consultations provided to support conservation actions: 0

Result description: Two meetings were organised with Gran Paradiso National Park and regional surveyors to plan the Alpine otter survey and develop a standard protocol for field survey.

NETWORK

Capacity building

T-012 (KSR 2)

Number of people trained in conservation planning: 200

Result description: Jamie Copsey (CPSG) gave an invited lecture entitled 'Principles of planning species conservation projects' to the 1st Eurasian Otter Workshop on 26–28 February 2021, reaching 470 attendants. Co-Chair Anna Loy successfully completed the 'Facilitating Species Conservation Planning Workshops'.

Documents review

T-013 (KSR 3)

Number of resolutions accomplished with engagement of SSC groups: 0

Result description: The Asian Small-clawed Otter (*Aonyx cinereus*) was upgraded to CITES Appendix I.

Membership

T-006 (KSR 2)

Number of SSC members recruited: 34

Result description: Thirty-four (34) new members were recruited from Morocco, Italy, Russia, Brazil, UK, USA, Germany, Croatia, Uganda, India and Mexico. About 250 members were reappointed.

T-009 (KSR 2)

Number of SSC members recruited: 34

Result description: New members were recruited from Morocco, Italy, Russia, Brazil, UK, USA, Germany, Croatia, Uganda, India and Mexico.

Synergy

T-001 (KSR 1)

Number of funding partners established and maintained: 2

Result description: An SSC internal grant (n.5277-0189) was obtained in 2019 to study African Clawless Otter (*Aonyx capensis*) and Spotted-necked Otter (*Hydrictis maculicollis*) population densities along the lower Orange River in the Nama-Karoo, Namibia, using camera trapping surveys. OSG also funded US$ 2,500 to an education project in Benin on the Spotted-necked Otter.

T-008 (KSR 3)

Proportion of SSC groups that advance their targets through collaborations with other IUCN components: 3

Result description: OSG promoted a discussion meeting at the Fourth SSC Leaders' Meeting in Abu Dhabi in 2019 focused on the need for networking among Specialist Groups involved with freshwater species. The meeting was attended, among others, by the Freshwater Fish Specialist Group and the Freshwater Plant Specialist Group. OSG also attended the IUCN World Conservation Congress in Marseille in 2021 and established contacts with the Freshwater Conservation Coordinator of the Global Center for Species Survival.

T-011 (KSR 4)

Number of institutions and stakeholders involved: 2

Result description: In Italy, Cilento, Vallo di Diano and Alburni National Park (NP CVDA) and the National Veterinary Service (Istituti Zooprofilattici Sperimentali, IZS) have become involved.

COMMUNICATE

Communication

T-070 (KSR 13)

Number of digital communication outputs developed in relation to specific taxonomic groups: 1

Result description: The first Newsletter was released in February 2022.

Scientific meetings

T-069 (KSR 12)

Number of scientific events organised: 0

Result description: The XVth International Otter Congress has been planned and announced. The Congress will be held in Sospel, France, on 19–23 September 2022. Fondation Prince Albert II de Monaco will sponsor the Congress and will cover accommodation expenses at the venue for about 70 participants.



Asian Small-clawed Otter (*Aonyx cinereus*)
Photo: Nicole Duplaix

Summary of achievements

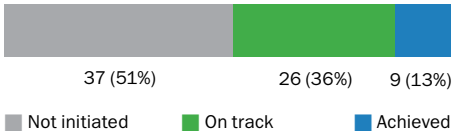
Total number of targets 2021–2025: 72

Geographic regions: 35 Global, 8 Africa, 4 America, 18 Asia, 7 Europe

Actions during 2021:

Assess:	7 (KSR 5, 6)
Plan:	6 (KSR 8, 9)
Act:	9 (KSR 10)
Network:	7 (KSR 1, 2, 3, 4)
Communicate:	2 (KSR 12, 13)

Overall achievement 2021–2025:



2021 Report

IUCN SSC Pangolin Specialist Group





CO-CHAIR
Matthew H. Shirley
Global Forensics and Justice Center, Florida International University, Miami, Florida, US

CO-CHAIR
Keri Parker
Parker Conservation Consulting, Washington DC, US

RED LIST AUTHORITY COORDINATOR
Carly Waterman
Zoological Society of London, Regent's Park, London, UK

NUMBER OF MEMBERS
185

SOCIAL MEDIA AND WEBSITE
Facebook: @PangolinSG
Instagram: @pangolinsg
Twitter: @PangolinSG
Website: https://www.pangolinsg.org
YouTube: IUCN SSC Pangolin Specialist Group

Mission statement

The mission of the Pangolin Specialist Group (PSG) is to work within the framework of the IUCN SSC to secure a future for wild pangolins through advancing knowledge on pangolin status, threats and conservation priorities, and by catalysing action to conserve them.

Projected impact 2021–2025

By 2025, the IUCN SSC Pangolin Specialist Group will have provided critical information, tools, and guidance to pangolin range states and other key stakeholders to support the development of targeted and impactful research and conservation programmes for pangolins.

Targets 2021–2025

ASSESS

T-012 Update global Red List assessments for the eight pangolin species by 2025.

T-013 Encourage, support and facilitate member-driven pangolin research initiatives to better understand targeted pangolin conservation initiatives.

T-014 Formalise and maintain a pangolin trade, trafficking and seizure database.

PLAN

T-015 Update the global conservation action plan 'Scaling Up Pangolin Conservation' by 2024.

T-016 Develop range-wide or regional conservation strategies for African pangolin species following the One Plan Approach by the end of 2025.

T-017 Develop range-wide or regional conservation strategies for Asian pangolin species and populations not covered by existing strategies by the end of 2025.

T-018 Produce an updated authoritative report on the status, trade, conservation and legislation affording protection to pangolins for the CITES Standing Committee to be submitted to the 74th meeting of the Standing Committee (SC74).

T-019 Contribute scientific and technical expertise to CITES meetings.

ACT

T-020 Respond to requests for technical support from IUCN, SSC, governments and other stakeholders.

T-021 Publish technical guidance documents to support specific priority conservation interventions for pangolins globally.

T-022 Publish position statements on critical pangolin conservation interventions/issues.

T-028 Publish and circulate a guidance document for first responders on handling live seized pangolins by 2021.

T-029 Publish a guidance document on best practices of live transport of pangolins by 2025.

T-030 Publish pangolin scale seizure conversion tool by 2023.

T-031 Publish and circulate a guidance document on rescued pangolin translocation by 2025.

T-032 Distribute a guidance document on methods for detecting and monitoring pangolin populations to key stakeholders by 2023.

T-033 Publish a guidance document on Safe and Sustainable Pangolin Tourism Practices by 2023.

T-034 Publish a guidance document on collecting, storing, transporting, etc., pangolin genetic, stable isotope and other samples for laboratory analysis by end of 2022.

NETWORK

T-001 Expand Pangolin Specialist Group membership to be more inclusive and representative of the diverse community of pangolin science, conservation and management expertise, and the 54 range states where pangolins occur, both in and *ex situ*, by 2025.



Pangolin pup yawning. This pup was born wild and free after its mother was successfully rescued and released back into the wild – a result of successful collaboration between law enforcement, veterinarians, community members, wildlife monitors, and PSG members in South Africa
Photo: Francois Meyer

T-002 Restructure and refresh the PSG advisory committee by 2022 to more effectively achieve our mission and targets, to be more representative of the regions where pangolins occur, as well as to better provide opportunities for mentorship and capacity building for emerging and future range state PSG leaders.

T-003 Convene Pangolin Specialist Group members to strengthen the network and advance dialogue on pressing pangolin conservation science, issues and solutions.

T-004 Ensure the PSG membership collectively develops community principles, vision, updated mission, goals, objectives, and actions and produces impactful outputs and outcomes relevant to the PSG mandate through participatory processes.

T-005 By 2022, develop a member portal as part of the PSG website, or other platform, to enhance member engagement, collaboration and access to resources.

T-006 Increase member capacity to engage in the Assess, Plan, Act conservation cycle and implement the One Plan Approach to conservation planning and implementation.

T-007 Establish more than one new formal partnership that will provide financial and institutional support to PSG by 2025.

T-008 Establish a 'Friends of the PSG' group to harness volunteer support for PSG financial, administrative and institutional needs by end of 2022.

T-009 Revive the Pangolin Specialist Group internship programme by end of 2022.

T-010 Continue building relationships with range state governments.

T-011 Increase the PSG profile through presence and participation in key global conservation fora.

T-027 Increase and secure core Pangolin Specialist Group funding, including development of PSG potential endowment.

COMMUNICATE

T-023 Share the Pangolin Specialist Group's activities through strategic and targeted communications.

T-024 Document and communicate successful local community engagement case studies to catalyse such engagement in other places for pangolin conservation.

T-025 Document and communicate successful law enforcement for interdiction of pangolin crime through case studies.

T-026 Develop materials for educators in formal and informal settings to educate and inspire school children about pangolins by 2025.

T-035 Create a mechanism for Pangolin Specialist Group members to share information and data by mid-2022.

Activities and results 2021

PLAN

Policy

T-018 (KSR 9)

Number of documents provided to support/guide policy making: 1

Result description: We completed the authoritative report on the status, trade, conservation and legislation affording protection to pangolins for the CITES Standing Committee, which will be an Information Document at the 19th meeting of the Conference of the Parties to CITES (CITES CoP19). A report on pansgolin scale conversion parameters is in progress.

ACT

Policy

T-022 (KSR 10)

Number of position statements addressing major drivers/emerging threats of species or population loss: 1

Result description: A member consultation on a pangolin farming draft position statement was completed, and a new drafting group formed to incorporate member feedback and finalise.

Technical advice

T-020 (KSR 10)

Number of technical consultations provided to support conservation actions: 2

Result description: We are actively developing conversion parameters and informing government stakeholders in their use for determining number of pangolins in trafficking, in partnership with CITES. We responded to a request from a US federal agency on pangolins and their potential implication with the SARS-CoV-2 pandemic.

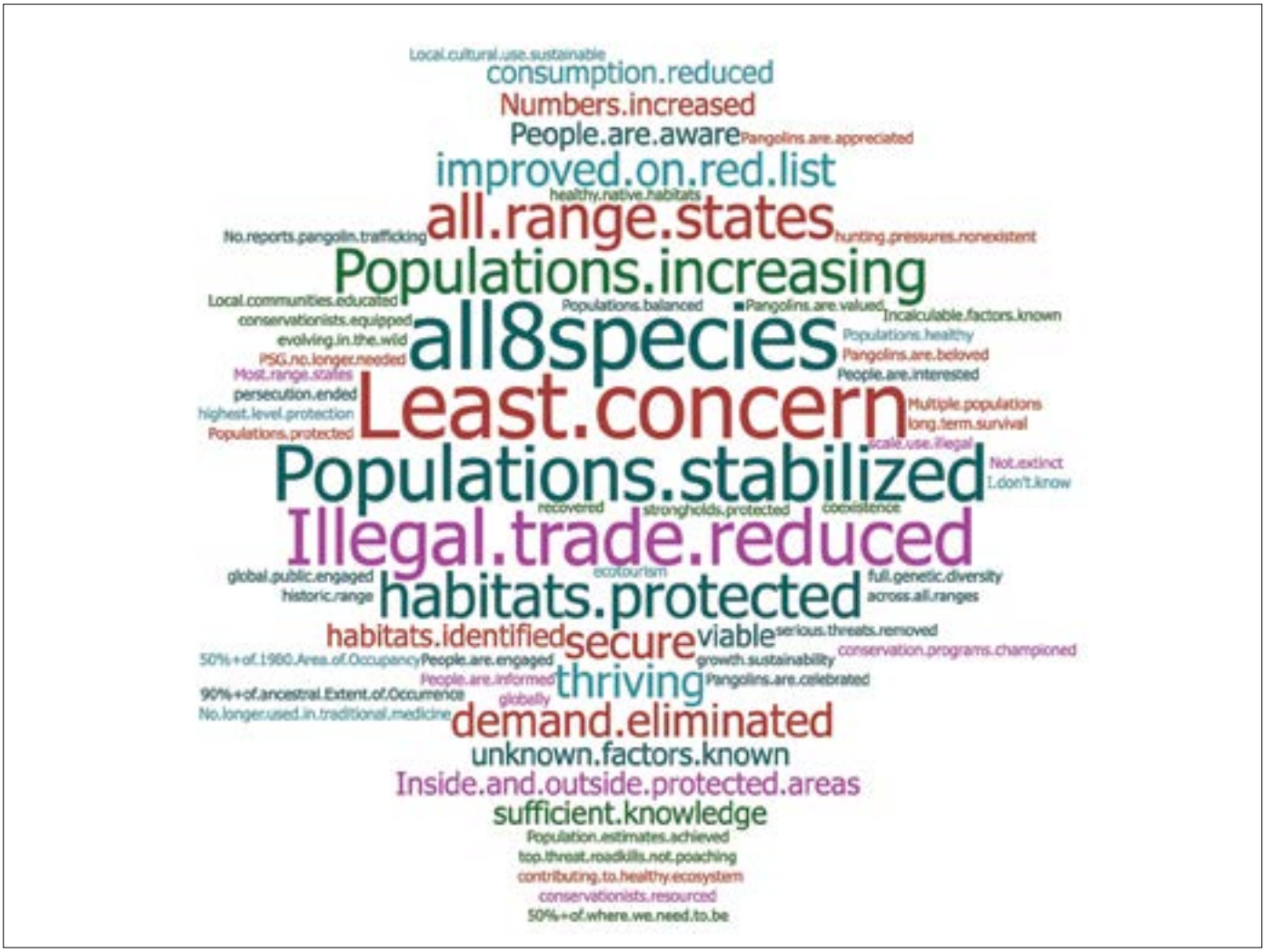
NETWORK

Capacity building

T-002 (KSR 2)

Number of people trained in management skills: 0

Result description: We developed and proposed a new Steering Committee structure and are currently accepting member



Word cloud developed by PSG members as part of the participatory process of developing a Vision for the group
Photo: PSG archives



Teachers and students attending event organised for World Pangolin Day by Rasa Ria Reserve Shangri-La, Sabah Malaysia, and PSG member Elisa Panjang
Photo: Elisa Panjang, Danau Girang Field Centre

applications for Steering Committee roles, including Regional Chairs, Thematic Vice Chairs and issue-specific Focal Points.

T-006 (KSR 2)

Number of people trained in conservation planning: 5

Result description: Five members, including the Co-Chair, completed the IUCN Conservation Planning Specialist Group (CPSG) Facilitating Conservation Planning course. We have also developed a group of neutral, skilled facilitators, all of whom have CPSG training, to support PSG participatory member processes.

Membership

T-001 (KSR 2)

Number of SSC members recruited: 3

Result description: Three new members have been added to SSC thus far, with active requests for applications and a search for new member recruitment ongoing.

T-003 (KSR 2)

Number of meetings held: 3

Result description: Quarterly zoom meetings were held, providing two opportunities at each 'date' for PSG members to join and discuss PSG and other pangolin-related conservation issues.

Synergy

T-004 (KSR 2)

PSG Community Principles developed: 1

Result description: Community principles were developed and translated into two additional key operating languages: French and Chinese.

PSG Vision Statement developed: 1

Result description: The PSG Vision Statement was drafted through a group participatory process. It will be published on the PSG website.

SWOT analysis implemented with membership to inform goals of the quadrennium: 1

Result description: A participatory strengths, weaknesses, opportunities and threats (SWOT) analysis was completed.

T-005 (KSR 2)

Portal created, populated and launched: 5

Result description: The process was initiated, we are in contact with IT personnel.

T-010 (KSR 4)

Number of government engagement activities conducted by Pangolin SG Leadership Committee or members on behalf of Pangolin SG: 1

Result description: We responded to the first US government Federal Register notice for recommendations for proposals and interventions at upcoming CITES CoP19. We also responded to a specific US government federal agency request to know more about pangolins and their potential involvement in the SARS-CoV-2 pandemic.

T-011 (KSR 3)

Number of Pangolin SG participants at key global conservation fora: 2

Result description: Two PSG members were sponsored to virtually participate in the 2021 IUCN World Conservation Congress.

COMMUNICATE

Communication

T-023 (KSR 13)

Number of digital communication outputs developed in relation to specific taxonomic groups: 2

Result description: A Chair Blog was published for World Pangolin Day 2021, including other participation in World Pangolin Day on various social media networks.

Acknowledgements

The IUCN SSC Pangolin Specialist Group would first and foremost thank our members for their support and engagement in PSG meetings, decision-making, and outputs during 2021. Their dedication to this group's productivity as we transitioned to new leadership and put in place foundations for a larger, more active and inclusive group structure has been inspiring. We thank our institutional host, the Zoological Society of London, for its ongoing support of our operations, and the IUCN SSC and the Global Centre for Species Survival for their support and advice throughout 2021. The PSG is fortunate to be supported by a dedicated group of IUCN Conservation Planning Specialist Group trained facilitators, including Jim Kao, Borja Reh, José Antonio Díaz Luque, Roopali Raghavan and Anna Ortega. Their efforts in support of pangolins and this community have been truly impactful. Finally, we thank Greenville Zoo and our numerous private donors for providing us with the means to continue supporting the pangolin conservation community and range states to secure a future for wild pangolins.

Summary of achievements

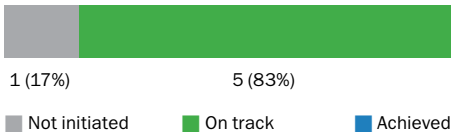
Total number of targets 2021–2025: 35

Geographic regions: 31 Global, 3 Africa, 3 Asia

Actions during 2021:

Plan: 1 (KSR 9)
Act: 2 (KSR 10)
Network: 10 (KSR 2, 3, 4)
Communicate: 1 (KSR 13)

Overall achievement 2021–2025:



IUCN SSC Peccary Specialist Group





SOCIAL MEDIA AND WEBSITE
Facebook: IUCN Peccary Specialist Group

CO-CHAIR
Harald Beck
Department of Biological Sciences, Towson University, Maryland, US

CO-CHAIR
Rafael Reyna-Hurtado
El Colegio de la Frontera Sur, Campeche, Mexico

RED LIST AUTHORITY COORDINATOR
Richard Bodmer
Museum of Amazonian Indigenous Cultures FundAmazonia, Iquitos, Peru

NUMBER OF MEMBERS
45

Mission statement

The overall aim of the Peccary Specialist Group is to promote the long-term conservation of peccaries and their natural habitats, and the recovery or restoration of peccary species, populations and communities. The specific objectives are: (1) contribute to peccary conservation through management and research; (2) consolidate the group of researchers and other people interested in the biology, conservation and management of peccaries; and (3) foster communication, coordination, collaboration and exchange of information.

Projected impact 2021–2025

Comprehensive assessment of all peccary species. Utilising the assessments, develop guidelines and conservation strategies for NGOs, governments and local communities.

Targets 2021–2025

ASSESS

T-003 Assess White-lipped Peccary (*Tayassu pecari*).

T-006 Complete an assessment of the population crashes of White-lipped Peccary across its range as a collaboration among group members.

T-007 Define mating systems of White-lipped Peccary.

T-009 Assess and mitigate the negative impacts of anthropogenic barriers (deforestation, roads, habitat alteration) on White-lipped Peccary herd and subherd social dynamics, spatial and population genetic structure, gene flow and genetic diversity.

T-011 Assess the current distribution pattern of the Chacoan Peccary (*Catagonus wagneri*) south of the distribution limit known until 2016 (northern Santiago del Estero province in Argentina) and the effect of land use change and hunting pressure on such patterns. Also, evaluate the isolation level of the newly discovered population.

T-012 Identify criteria on corridor use by White-lipped Peccary in a fragmented landscape.

PLAN

T-005 Create a Species Conservation Plan for White-lipped Peccary.

ACT

T-002 Continue the implementation in the field of the Chacoan Peccary conservation plan, which was published in 2016.

T-008 Develop priority conservation management actions to reverse rapid range decline of White-lipped Peccary, a key Neotropical forest ungulate, in Brazil.

T-010 Implement the Brazil Species Conservation Plan: National Ungulate Conservation Plan for threatened ungulate species.

NETWORK

T-001 Reach a wider audience by further developing a homepage and keeping an active Facebook group.

T-014 Expand and diversify membership.

COMMUNICATE

T-004 Expand environmental education programmes in the Chaco related to the conservation of the Chacoan Peccary.

Activities and results 2021

ASSESS

Red List

T-003 (KSR 6)

Number of new global Red List assessments completed: 1

Result description: Our Red List expert, Dr Richard Bodmer, organised a virtual Red List Reassessment Workshop for White-lipped Peccaries on 8 November 2021. We are currently still compiling the data and hope by the end of this year to have the reassessment done for this species across its entire geographic range. We will



Group of White-lipped Peccary (*Tayassu pecari*) in the Maya forest
Photo: Rafael Reyna

then continue with the reassessment of the other two peccary species. In Ecuador, Galo Zapata-Ríos and his team completed the re-assessment of White-lipped Peccary populations on both sides of the Andes. The populations in the Chocó (north-western Ecuador) are considered Critically Endangered, while the populations in the Amazon (eastern Ecuador) are considered Endangered.

Research activities

T-006 (KSR 5)

Number of scientific publications about species research that acknowledge SSC affiliation: 1

Result description: Several SSC peccary experts co-authored a manuscript (Fragoso J. et al., in revision) on this topic. The paper was rejected by several journals, thus the time delay.

T-009 (KSR 5)

Number of research projects completed or supported by SSC members per taxonomic group and region: 1

Result description: The following papers were published on this topic: (1) Maciel, F.G., et al. (2019). 'Genetic diversity and population structure of white-lipped peccaries (*Tayassu pecari*) in the Pantanal, Cerrado and Atlantic Forest from Brazil'.



White-lipped Peccary (*Tayassu pecari*)
Photo: Rafael Reyna

Mammalian Biology 95:85–92. https://doi.org/10.1016/j.mambio.2019.03.001; (2) Baptista, M.S.P. (2020). 'Barreiras ao fluxo gênico de queixadas (*Tayassu pecari*) no pantanal e planalto do entorno (Barriers to gene flow of White-lipped Peccaries (*Tayassu pecari*) in the Pantanal and adjacent plateau)'. Master's thesis. Sao Paolo, Brazil: Federal University of ABC; (3) Schmaedecke, G. (2021). 'Diversidade genética de queixadas (*Tayassu pecari*) em diferentes paisagens da mata atlântica, pantanal e cerrado (Genetic diversity of White-lipped Peccaries (*Tayassu pecari*) in different landscapes of the Atlantic Forest, Pantanal and Cerrado)'. PhD dissertation. Sao Paolo, Brazil: Federal University of ABC.

T-011 (KSR 5)

Number of research projects completed or supported by SSC members per taxonomic group and region: 1

Result description: A great publication submitted in 2021 was published: Camino, M., et al. (2022). 'Less than six generations to save the chacoan peccary'. *Biodiversity and Conservation* 31:413–432. https://doi.org/10.1007/s10531-021-02337-x

PLAN

Planning

T-005 (KSR 8)

Number of conservation plans/strategies developed: 1

Result description: Members of the IUCN Peccary Specialist Group published several papers that have major implications for conservation of peccary species. For example: (1) Thornton et al. (2020) found an up to 87% range reduction of White-lipped Peccary across Mesoamerica, and a 63% reduction from current IUCN range estimates (https://doi.org/10.1016/j.biocon.2020.108410); (2) Camino et al. (2022) reported that because of increasing deforestation in the dry Chaco, the endemic Chacoan Peccary will most likely be extinct before 2051 (less than six peccary

generations; https://doi.org/10.1007/s10531-021-02337-x); (3) the European Association of Zoos and Aquaria (EAZA) Tapir and Suiform Regional Collection Plan met and published a report: Holst, B., Beckmann, J., Zimmermann, M., Leus, K. and Voorham, M. (eds.) (2021). *Regional Collection Plan for the EAZA Tapir and Suiform Taxon Advisory Group – First edition.* Amsterdam: EAZA Executive Office.

T-010 (KSR 10)

Number of actions addressing major drivers/emerging threats of species or population loss: 1

Result description: The National Ungulate Conservation Plan for threatened ungulate species in Brazil (Plano de Ação Nacional para a Conservação dos Ungulados – PAN Ungulados) was officially approved in 2019 (DOU – PORTARIA Nº 356, DE 25 DE JULHO DE 2019). The first cycle of actions are being developed and will be completed in 2024, when a second evaluation will occur. The Plan consists of eight objectives that propose improvements to public policies, investigations on the impacts of poaching, alien species, diseases and negative impacts of infrastructure development. There are some actions that focus on mitigating these threats and implementing strategies for managing and protecting small/isolated subpopulations.

ACT

Conservation actions

T-002 (KSR 10)

Number of actions addressing major drivers/emerging threats of species or population loss: 1

Result description: In November 2021, CIMFAUNA (Congreso Internacional de Manejo de Fauna Silvestre de La Amazonía y Latinoamérica) held the symposium 'Re-categorización del pécari de labios blanco (Tayassu pecari)- IUCN (PECCARY SPECIALIST GROUP)', organised by Richard Bodmer y Pedro Mayor. At the regional level, the White-lipped Peccary assessment in Brazil occurred in 2018 and the species remains Vulnerable (VU). However, the Brazilian list of endangered species has yet to be updated. Micaela Camino and Mariana Altrichter concurred for funds at the IUCN Small Grants. They were awarded the grant and started developing conservation actions for Chacoan peccary in the Argentinian Chaco region.

T-008 (KSR 10)

Number of actions addressing major drivers/emerging threats of species or population loss: 1

Result description: The following paper was published on this topic: Oshima, J.E.F., et al. (2021). 'Setting priority conservation management regions to reverse rapid range decline of a key neotropical forest ungulate'. *Global Ecology and Conservation* 31:e01796. https://doi.org/10.1016/j.gecco.2021.e01796

NETWORK

Membership

T-014 (KSR 2)

Number of SSC members recruited: 10

Result description: The former and current Chairs (Marianna A., Rafael R. and Harald B.) asked the members for recommendations for potential new members. In 2021, we invited 10 new members and currently have 45 members, from many different countries and representing high gender diversity. In the future, we will continue this process to retain high diversity within our group.

COMMUNICATE

Communication

T-004 (KSR 13)

Number of print communications materials distributed in relation to specific taxonomic groups: 1

Result description: We continue the implementation of the Chacoan Peccary (*Catagonus wagneri*) conservation plan, which was published in 2016, in the field (Micaela Camino et al.).

Acknowledgements

Stiftung Artenschutz: Thanks for supporting our outreach programme to help conserve the Endangered Chacoan Peccary.

Summary of achievements

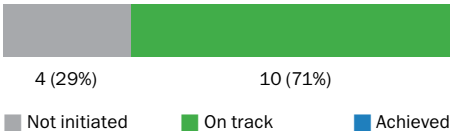
Total number of targets 2021–2025: 14

Geographic regions: 1 Global, 13 America

Actions during 2021:

Assess:	4 (KSR 5, 6)
Plan:	2 (KSR 8, 10)
Act:	2 (KSR 10)
Network:	1 (KSR 2)
Communicate:	1 (KSR 13)

Overall achievement 2021–2025:



IUCN SSC Pinniped Specialist Group





CO-CHAIR
Kit M. Kovacs
Biodiversity Research Section Leader, Norwegian Polar Institute, Fram Centre, Tromsø, Norway

CO-CHAIR
Simon Goodman
Leeds University, Leeds, UK

RED LIST AUTHORITY COORDINATOR
Alex Karamanlidis
Mom Hellenic Society for the Study and Protection of the Monk Seal, Athens, Greece

Simon Goldsworthy
South Australian Research and Development Institute, SARDI, Adelaide, Australia

NUMBER OF MEMBERS
20

Mission statement

The mission of the Pinniped Specialist Group is to promote awareness regarding conservation threats to pinnipeds worldwide and to actively take a role in ensuring good management practises that ensure healthy, robust pinniped populations.

Projected impact 2021–2025

Completion of our status and threats assessment in combination with the on-going update of the Red List will: (1) identify knowledge gaps, (2) identify threats and potential mitigation tactics and (3) provide accurate information to National and International management bodies that can promote and enact pinniped conservation.

Targets 2021–2025

ASSESS

T-001 Conduct Red List reassessment of the South American Fur Seal (*Arctocephalus australis* (Zimmermann, 1783)).

T-002 Conduct Red List reassessment of the New Zealand Fur Seal (*Arctocephalus forsteri* (Lesson, 1828)).

T-003 Conduct Red List reassessment of the Galápagos Fur Seal (*Arctocephalus galapagoensis* (Heller, 1904)).

T-004 Conduct Red List reassessment of the Antarctic Fur Seal (*Arctocephalus gazella* (Peters, 1876)).

T-005 Conduct Red List reassessment of the Juan Fernández Fur Seal (*Arctocephalus philippii* (Peters, 1866)).

T-006 Conduct Red List reassessment of the Afro-Australian Fur Seal (*Arctocephalus pusillus* (Schreber, 1775)).

T-007 Conduct Red List reassessment of the Subantarctic Fur Seal (*Arctocephalus tropicalis* (Gray, 1872)).

T-008 Conduct Red List reassessment of the Northern Fur Seal (*Callorhinus ursinus* (Linnaeus, 1758)).

T-009 Conduct Red List reassessment of the Steller Sea Lion (*Eumetopias jubatus* (Schreber, 1776)).

T-010 Conduct Red List reassessment of the Australian Sea Lion (*Neophoca cinerea* (Peron, 1816)).

T-011 Conduct Red List reassessment of the South American Sea Lion (*Otaria byronia* (Blainville, 1820)).

T-012 Conduct Red List reassessment of the New Zealand Sea Lion (*Phocarctos hookeri* (Gray, 1844)).

T-013 Conduct Red List reassessment of the Californian Sea Lion (*Zalophus californianus* (Lesson, 1828)).

T-014 Conduct Red List reassessment of the Japanese Sea Lion (*Zalophus japonicus* (Peters, 1866)).

T-015 Conduct Red List reassessment of the Galápagos Sea Lion (*Zalophus wollebaeki* (Sivertsen, 1953)).

T-016 Conduct Red List reassessment of the Walrus (*Odobenus rosmarus* (Linnaeus, 1758)).

T-017 Conduct Red List reassessment of the Hooded Seal (*Cystophora cristata* (Erxleben, 1777)).

T-018 Conduct Red List reassessment of the Bearded Seal (*Erignathus barbatus* (Erxleben, 1777)).

T-019 Conduct Red List reassessment of the Grey Seal (*Halichoerus grypus* (Fabricius, 1791)).

T-020 Conduct Red List reassessment of the Ribbon Seal (*Histriophoca fasciata* (Zimmerman, 1783)).



Climate change is a major threat to most pinniped species, directly through habitat deterioration or indirectly via its impacts on marine ecosystem function. For example, glaciers are melting and calving (dropping ice into fjords) at unprecedented rates negatively impacting species such as the Bearded Seal (*Erignathus barbatus*)
Photo by: Kit M. Kovacs, Norwegian Polar Institute



A Galápagos Sea Lion mother and pup (*Zalophus wollebaeki*) bask on a beach on the island of Marchena, Galápagos, Ecuador. The Galápagos sea lion is one of the few pinniped species with a range outside of polar or temperate waters. The species is listed as Endangered and has a declining trend, but the causes are poorly understood. Increasing frequencies of El Niño events due to climate change may have an increasing impact in future
Photo: Simon Goodman, University of Leeds

T-021 Conduct Red List reassessment of the Leopard Seal (*Hydrurga leptonyx* (Blainville, 1820)).

T-022 Conduct Red List reassessment of the Weddell Seal (*Leptonychotes weddellii* (Lesson, 1826)).

T-023 Conduct Red List reassessment of the Crabeater Seal (*Lobodon carcinophaga* (Hombron and Jacquinot, 1842)).

T-024 Conduct Red List reassessment of the Southern Elephant Seal (*Mirounga leonina* (Linnaeus, 1758)).

T-025 Conduct Red List reassessment of the Northern Elephant Seal (*Mirounga angustirostris* (Gill, 1866)).

T-026 Conduct Red List reassessment of the Mediterranean Monk Seal (*Monachus monachus* (Hermann, 1779)).

T-027 Conduct Red List reassessment of the Caribbean Monk Seal (*Neomonachus tropicalis* (Gray, 1850)).

T-028 Conduct Red List reassessment of the Hawaiian Monk Seal (*Neomonachus schauinslandi* (Matschie, 1905)).

T-029 Conduct Red List reassessment of the Ross Seal (*Ommatophoca rossii* (Gray, 1844)).

T-030 Conduct Red List reassessment of the Harp Seal (*Pagophilus groenlandicus* (Erxleben, 1777)).

T-031 Conduct Red List reassessment of the Harbor Seal (*Phoca vitulina* (Linnaeus, 1758)).

T-032 Conduct Red List reassessment of the Spotted Seal (*Phoca largha* (Pallas, 1811)).

T-033 Conduct Red List reassessment of the Ringed Seal (*Pusa hispida* (Schreber, 1775)).

T-034 Conduct Red List reassessment of the Caspian Seal (*Pusa caspica* (Gmelin, 1788)).

T-035 Conduct Red List reassessment of the Baikal Seal (*Pusa sibirica* (Gmelin, 1788)).

PLAN

T-036 Produce a global pinniped conservation strategy.

Activities and results 2021

ASSESS

Red List

T-016 (KSR 6)

Number of global Red List reassessments completed: 1

Result description: The text is completed and the review is underway. It is to be submitted in 2023.

T-017 (KSR 6)

Number of global Red List reassessments completed: 1

Result description: The status report is completed and reviewed. It is to be submitted in 2023.

T-018 (KSR 6)

Number of new global Red List reassessments completed: 1

Result description: The text is completed and the review is underway. It is to be submitted in 2023.

T-019 (KSR 6)

Number of new global Red List reassessments completed: 1

Result description: The text and review are completed. It is to be submitted in 2023.

T-030 (KSR 6)

Number of global Red List reassessments completed: 1

Result description: The text is done, and it is under review. It is to be submitted in 2023.

T-031 (KSR 6)

Number of global Red List reassessments completed: 1

Result description: The text is in draft form. It will soon be reviewed, to be submitted in 2023.

T-033 (KSR 6)

Number of global Red List reassessments completed: 1

Result description: The text and reviews have been completed for the Ladoga Seal (*Pusa hispida ladogensis*) and Saimma Seal (*Pusa hispida saimensis*) subspecies, to be submitted in 2022.

PLAN

Planning

T-036 (KSR 8)

Number of conservation plans/strategies developed: 0

Result description: The planned work is underway. Species 'accounts' are being produced, edited and compiled. We hope to finish the strategic plan/status report in 2023.

Acknowledgements

The PSG thanks the employers of our members for their support.

Summary of achievements

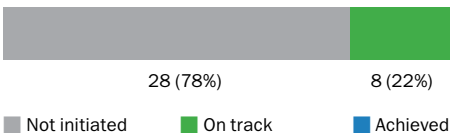
Total number of targets 2021–2025: 36

Geographic regions: 36 Global

Actions during 2021:

Assess: 7 (KSR 6)
Plan: 1 (KSR 8)

Overall achievement 2021–2025:



2021 Report

IUCN SSC Polar Bear Specialist Group





CO-CHAIR
Nick Lunn
Environment and Climate Change Canada, Edmonton, Alberta, Canada

CO-CHAIR
Kristin L. Laidre
Polar Science Center, University of Washington, Seattle, Washington, US

RED LIST AUTHORITY COORDINATOR
Eric V. Regehr
Polar Science Center, University of Washington, Seattle, Washington, US

NUMBER OF MEMBERS
34

SOCIAL MEDIA AND WEBSITE
Website: https://www.iucn-pbsg.org

Mission statement

The mission of the IUCN SSC Polar Bear Specialist Group (PBSG) is to coordinate, synthesise and distribute scientific information necessary to guide the long-term viability of polar bears and their habitats.

Projected impact 2021–2025

The Polar Bear (*Ursus maritimus*) is currently classified as Vulnerable (VU) on the basis of a projected reduction in global population size due to loss of sea ice habitat. Loss of Arctic sea ice due to climate change is the most serious threat to Polar Bears throughout their circumpolar range, but action to mitigate this threat is beyond the ability of either the PBSG or the five governments that comprise the Polar Bear Range States. The continued commitment of the Polar Bear Range States to the implementation of its 2015 *Circumpolar Action Plan: Conservation Strategy for Polar Bears* is critical to help secure the long-term persistence of Polar Bears in the wild that represent the genetic, behavioural and ecological diversity of the species. The PBSG considers periodic updated assessments of the status and trends of the world's 19 recognised subpopulations, identification of areas of essential habitat for Polar Bears, and further understanding and refining of definitions of sustainable harvest of polar bears to be important pieces to be considered by the Polar Bear Range States. During the current quadrennium, we would expect continued actions identified under the 2015 Circumpolar Action Plan to be taken by the responsible authorities and that the PBSG would continue to provide technical advice and scientific oversight where appropriate.

Targets 2021–2025

ASSESS

T-003 Assess the status/trend of all 19 currently recognised subpopulations.

PLAN

T-006 Provide to the five governments comprising the Polar Bear Range States, assessment and advice with respect to essential habitat, sustainable harvest, and climate change communications as part of the Range States Circumpolar Action Plan for polar bears.

T-007 Undertake a technical review of a white paper on sustainable harvest written by the five Polar Bear Range States as part of their Circumpolar Action Plan.



Weighing cub-of-the-year in spring
Photo: A. McCall



Mother and cub on sea ice western Hudson Bay
Photo: D. McGeachy

Maternity den
Photo: D. McGeachy





Polar bear waiting for ice to reform
Photo: N. Lunn

NETWORK

T-002 Review, renew and recruit up to 33 members, as per the PBSG Terms of Reference, for the 2021–2025 Quadrennium.

COMMUNICATE

T-001 Hold 19th Working Meeting of the Polar Bear Specialist Group (virtual).

T-004 Establish, develop, renew and migrate information to a new Polar Bear Specialist Group website.

Activities and results 2021

ASSESS

Red List

T-003 (KSR 6)

Number of subpopulations assessed for status/trend: 19

Result description: The PBSG reviewed, assessed and updated status and trend of all 19 subpopulations. This assessment has been posted on the Group's website.

PLAN

Planning

T-006 (KSR 8)

Number of technical documents to support the development of conservation plans/ strategies: 0

Result description: PBSG members have made significant progress on assessing and providing advice to the five Polar Bear Range States with respect to essential habitat, sustainable harvest, and climate change communications.

T-007 (KSR 8)

Provide technical review for Circumpolar Action Plan: 1

Result description: We completed a technical review of a white paper on sustainable harvest written by the five Polar Bear Range States as part of their Circumpolar Action Plan. It will be delivered to the Range States in March 2022.

NETWORK

Membership

T-002 (KSR 2)

Number of SSC members recruited: 30

Result description: We added 30 new members to the PBSG for the 2021–2025 quadrennium.

COMMUNICATE

Communication

T-004 (KSR 12)

Number of websites developed: 1

Result description: A basic website was developed on which the PBSG's current status report is available. Currently, the framework and content of a full website is under development.

Communication

T-001 (KSR 12)

Number of scientific events in which the members participated: 1

Result description: PBSG held a virtual meeting 8–10 June 2021.

Acknowledgements

We thank Polar Bears International and World Wildlife Fund for providing funding to establish and renew the Polar Bear Specialist Group website. We would also like to acknowledge the governments, agencies and organisations for their ongoing support of their employee's participation on the PBSG.

Summary of achievements

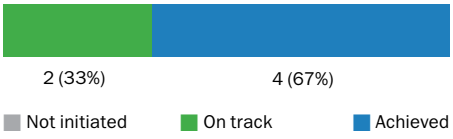
Total number of targets 2021–2025: 6

Geographic regions: 6 Global

Actions during 2021:

Assess: 1 (KSR 6)
Plan: 2 (KSR 8)
Network: 1 (KSR 2)
Communicate: 2 (KSR 12)

Overall achievement 2021–2025:



IUCN SSC Primate Specialist Group



CHAIR
Russell A. Mittermeier
Re:wild, Austin, Texas, US



DEPUTY CHAIR
Anthony Rylands
Re:wild, Austin, Texas, US



DEPUTY CHAIR
Christoph Schwitzer
Dublin Zoo, Ireland



DEPUTY CHAIR
Kim Reuter
Lemur Love, San Diego, California, US



DEPUTY CHAIR
Leandro Jerusalinsky
Instituto Chico Mendes de Conservação da Biodiversidade (ICMBio), Brazil

SOCIAL MEDIA AND WEBSITE
Facebook: @iuncpsg
Website:
www.primate-sg.org

RED LIST AUTHORITY COORDINATORS
Christoph Schwitzer
Dublin Zoo, Ireland

Sanjay Molur
Zoo Outreach Organisation, Coimbatore, India

Liz Williamson (Apes)
University of Stirling, Stirling, Scotland, UK

Kim Reuter
Lemur Love, San Diego, California, US

NUMBER OF MEMBERS
852

Mission statement

The mission of the Primate Specialist Group (PSG) is to maintain the current diversity of the order Primates by ensuring the survival of threatened species wherever they occur and providing effective protection for large numbers of primates in areas of high primate diversity and abundance. In essence, the PSG has a Zero Extinction policy for all primate species.

Projected impact 2021–2025

A significant impact on saving (currently) 527 species (717 species and subspecies) of primates from extinction.

Targets 2021–2025

ASSESS

T-005 Complete all Red List assessments for primates and put in place a new rolling system for individual species assessments as new data become available.

T-006 Maintain a taxonomic, geographic and conservation status (Red List) database for primates.

T-007 Publish articles on the taxonomy, geographic distributions, surveys and conservation status of primates.

PLAN

T-028 Prepare action plans for the conservation of primate species and species groups, including: (1) the Red Colobus Action Plan, (2) the Mangabey/Mandrill Action Plan, (3) a revised Lemur Action Plan, (4) conservation action plans for all gibbon and siamang range countries encompassing all 20.

T-031 Prepare Best Practice Guidelines for: (1) Surveying and Monitoring Gibbons and Siamang, (2) Gibbon Ecotourism Guidelines (through the Section on Small Apes, SSA).



Pygmy Slow Loris (*Nycticebus pygmaeus*), Ban Konglor village, Laos
Photo: Russell A. Mittermeier



Guianas Black Spider Monkey (*Ateles paniscus*), Vulnerable,
Voltzberg area, Central Suriname Nature Reserve, Suriname
Photo: Russell A. Mittermeier

T-035 Work with zoos to support various primate species survival plans, e,g. European Association of Zoos and Aquaria Taxon Advisory Groups (EAZA TAGs) and Association of Zoos and Aquariums Species Survival Plans (AZA SSPs).

T-036 Improve methods by which companies measure and pay damages to great ape populations from their projects (through the Section on Great Apes (SGA) and ARRC Task Force).

ACT

T-014 Manage the Primate Action Fund, a small grants programme for primate conservation, monitoring, surveys, research and education.

T-015 Manage the Lemur Conservation Action Fund, a small grants scheme for lemur conservation, monitoring, surveys, research and education.

T-022 Decrease the number of development and private sector projects in ape habitat by working with banks to incorporate information about great ape distributions and priority populations into upstream project screening (SGA–ARRC Task Force).

T-025 Secure sustainable funding for the ARRC (Avoid, Reduce, Restore negative impacts from energy, extractive and associated infrastructure projects on apes and contribute positively to their Conservation) Task Force's work (SGA–ARRC Task Force).

T-030 Increase the capacity of regional teams to monitor development and private sector project commitments to mitigate their project's impacts on great ape populations (SGA–ARRC Task Force).

T-032 Provide technical guidance and status updates for small apes (gibbons and siamang) through the A.P.E.S. database (SSA).

T-037 Fundraise for all primate conservation activities; increase funding by five times over current levels by 2025.

T-038 Promote and participate in field courses for primate field research and conservation.

T-039 Investigate and tackle illegal primate trade, including gibbon online trade in Indonesia and Malaysia.

T-040 Secure funding for and develop a website of methods to improve coexistence between people and primates (through the Section for Human-Primate Interactions, SHPI).

T-042 Provide technical guidance and status updates for great apes through the A.P.E.S. database and publications such as Best Practice Guidelines and Conservation Action Plans (SGA).



Muriqui (*Brachyteles hypoxanthus*) in forest, Caratinga, Brazil
Photo: Russell A. Mittermeier

NETWORK

T-001 Continue to increase and strengthen the diversity of PSG members in terms of nationality, gender and age.

T-017 Add two new national/regional sections to the PSG.

T-020 Continue to organise webinars featuring research by early career primatologists.

T-029 Stimulate and support the creation of new primatological societies in range countries.

T-033 Establish a Youth Section for young primatologists (ages 15–25).

T-034 Work to support and strengthen the Lemur Conservation Network and the Red Colobus Conservation Network.

T-041 Provide training in ethical human dimensions research for primatologists globally (SHPI).

COMMUNICATE

T-003 Stimulate primate ecotourism, i.e. primate-watching and primate life-listing, as a major conservation tool for primates.

T-008 Edit and publish regional newsletters/journals for the Neotropics, Africa, Asia and Madagascar: *Neotropical Primates*, *African Primates*, *Asian Primates Journal*, *Lemur News*.

T-009 Edit and publish the journal *Primate Conservation*.

T-010 Prepare and disseminate the biennial list of the 25 Most Endangered Primates in collaboration with the International Primatological Society.

T-011 Produce four regional field guides and four pocket guides for primates.

T-013 Promote and participate in congresses and meetings.

Activities and results 2021

ASSESS

Communication

T-006 (KSR 5)

Number of databases maintained: 5

Result description: Taxonomic lists, including author and dates of description, occurrence in countries and regions, and Red List status, are current. Taxonomic notes were provided for the Red List assessments and to the Integrated Taxonomic Information System (ITIS). Besides subsidising diverse publications, some of the main results and information are available at the PSG website (http://www.primate-sg.org/), including a Primate Higher Taxonomy (from Suborder to Subfamily), a list of Primates of

the Amazon, and a table of primate diversity per region with numbers of families, genera, species, total taxa (Subspecies and Species), and percentages of threatened taxa per region.

Red List

T-005 (KSR 6)

Number of global Red List reassessments completed: 47

Result description: By January 2020, all the assessments arising from the 2015–2016 Red Listing workshops (Neotropics, Asia, Africa) and 2018 Red Listing workshops (Madagascar) were submitted. By December 2021, 754 Red List assessments had been completed and submitted.

T-007 (KSR 5)

Number of scientific publications about species research that acknowledge SSC affiliation: 5

Result description: Five publications were released: (1) Wiedenfeld, D.A., et al. (2021). 'Conservation resource allocation, small population resiliency, and the fallacy of conservation triage'. *Conservation Biology* 35(5):1388–1395. https://doi.org/10.1111/cobi.13696. (2) Mittermeier, R.A., et al. (2021). *Mammals of Madagascar with the Comoros, the Seychelles, Réunion and Mauritius*. Lynx Illustrated Checklists. Barcelona: Lynx Edicions. (3) Beauséjour, S., Rylands, A.B. and Mittermeier, R.A. (2021). *All Asian Primates*. Austin, TX: Re:wild and Barcelona: Lynx Edicions. (4) Reuter, K.E., et al. (2021). 'The 25 most endangered primates list: impacts on conservation fundraising and policy'. In: E. Freedman, S.S. Hiles and D. Sachsman (eds.) *Communicating Endangered Species: Extinction, News and Public Policy*, pp.101–115. Abingdon, UK: Routledge. (5) Strier, K.B., et al. (2021). 'Science, Policy, and Conservation Management for a Critically Endangered Primate in the Atlantic Forest of Brazil'. *Frontiers in Conservation Science* 2:734183. https://doi.org/10.3389/fcosc.2021.734183

PLAN

Planning

T-031 (KSR 8)

Number of conservation plans/strategies developed: ongoing

Result description: (1) Conservation action plans for all gibbon and siamang range countries encompassing all 20 are underway; (2) Best Practice Guidelines for Surveying and Monitoring Gibbons and Siamang, Gibbon Ecotourism Guidelines (SSA) and Gibbon Health and Disease Monitoring are underway.

T-035 (KSR 8)

Number of conservation plans/strategies developed: 1

Result description: EAZA Callitrichid TAG: Revision of the EAZA Best Practice Guidelines for Callitrichidae, Edition 3.2. 286 pp. To be published in 2022.

Policy

T-028 (KSR 9)

Number of policies where SSC members provided technical input: 7

Result description: (1) The Red Colobus Action Plan was completed and distributed; (2) the Western Chimpanzee Action Plan was completed and distributed; (3) the Mangabey/Mandrill Action Plan is underway and should be published in 2022; (4) there has been on progress on a revised Lemur Action Plan; (5) conservation action plans are underway for all gibbon and siamang range countries encompassing all 20; (6) a National Conservation Plan for the Primates of Argentina was presented to the Argentinian government for approval and recognition; (7) initial planning has commenced for a Conservation Action Plan for *Ateles* and *Lagothrix*. Several PSG members are part of the official Technical Advisory Groups to accompany the coordination and help the implementation of four National Action Plans for the Conservation of Brazilian Primates (Amazon Primates, Atlantic Forest Primates, North-eastern Primates, and Pied Tamarin), promoted by the Brazilian government, with regular annual meetings.

T-036 (KSR 9)

Number of policies where SSC members provided technical input: 1

Result description: A report on offsets was published in 2021 that will lead to improved methods by which companies measure and pay damages.

ACT

Conservation actions

T-014 (KSR 10)

Number of threatened species benefiting from *in situ* conservation action: 33

Result description: Thirty-three Primate Action Fund grants were awarded during the funding cycle of March 2020 to March 2021, totalling US$ 134,466,59.

T-015 (KSR 10)

Number of threatened species benefiting from *in situ* conservation action: 52

Result description: The IUCN Save Our Species Lemur Conservation Fund ended in 2021. Fifty-two grants were given out in the following categories: awareness and education; training and field courses; field research regarding hunting, responses to forest fragmentation, the use of camera traps, behaviour and ecology; population and distribution surveys; captive breeding for conservation; conservation genetics; threat assessment and mitigation; and management of Red List assessments. Alternative funding for lemur conservation secured.

T-022 (KSR 10)

Number of development and private sector projects contacted: 14

Result description: ARRC has interacted with 14 projects in 2021 (with whom we engage or not). We have interacted directly with six banks and two pension funds.

T-025 (KSR 10)

Number of grants awarded: 4

Result description: No progress was made in securing sustainable funding, but we have achieved some 'unsustainable' funding provided by Global Environment Facility (GEF), International Climate Initiative (IKI), Critical Ecosystem Partnership Fund (CEPF) and Arcus grants that will contribute or have contributed to the AARC Task Force.

T-030 (KSR 10)

Number of regional teams trained: 2

Result description: Two in-country trainings of the Primate WATCH team (9 participants) took place as well as monthly online training sessions.

T-032 (KSR 10)

Number of technical consultations provided to support conservation actions: 500

Result description: The SSA Vice Chair is engaged with the A.P.E.S Database team to develop tools to facilitate the addition of gibbon data. SSA members are provided with a custom form to complete to make the addition of data easier and faster.

T-037 (KSR 10)

Amount of funds raised: ~ US$ 1,000,000

Result description: Approximately 1 million dollars raised for primate conservation measures in general.

T-038 (KSR 10)

Number of field courses supported or participated in: 1

Result description: PSG supported with a US$ 15,000 award, courtesy of the Margot Marsh Biodiversity Foundation, the promotion of the 2nd Latin American Course of Primatology – Approaches and Challenges, organised by a committee of the Latin American Society of Primatology (SLAPrim),

in Ecuador, January 2022, with the participation of 18 students from eight different Latin American countries. The organisation and student selection started in 2020 and extended through 2021. Earlier, in 2018, PSG supported with a US$ 5,000 award, courtesy of the Margot Marsh Biodiversity Foundation, the promotion of the VI Brazilian Course of Primatology, held in Rio Doce State Park, with 20 students from all regions of Brazil. The aggregate results of the six editions of this course (2009–2018), all of them supported by PSG, are under analysis to prepare a publication on its impacts.

T-039 (KSR 10)

Number of actions addressing major drivers/emerging threats of species or population loss: 5

Result description: Five training sessions took place with the Indonesian Department of Wildlife and Conservation. The Gibbonesia campaign reached ~5,000,000 engagements online. A network of investigators, rescue centres and rehabilitation/release centres was established in Indonesia. Collaboration with Malaysia is increasing. Plans exist for 2022 to launch campaigns aimed at direct positive non-ownership of gibbons through online platforms and bespoke characters created for this campaign.

T-042 (KSR 10)

Number of technical documents provided to support conservation actions: 1

Result description: The A.P.E.S. database continues to provide great ape researchers with data to analyse different aspects of great ape density and distribution, among other research questions. The SGA secured a grant from the US Fish and Wildlife Service in 2021 that will allow it to provide new Best Practice Guidelines for Great Apes on Health and Disease, Surveys and Monitoring, and Translocation of apes. We have produced additional guidance for developing great ape action plans.

NETWORK

Capacity building

T-029 (KSR 2)

Number of people trained in conservation planning: 1

Result description: The Paraguayan Primatological Society was formed, inspired and supported by the Southern Cone chapter of the PSG.



Philippine tarsier (*Tarsius syrichta*), Bohol, The Philippines
Photo: Russell A. Mittermeier

Membership

T-001 (KSR 1)

Number of SSC members recruited: 111

Result description: The Specialist Group Executive Committee has been somewhat restructured: Chair (1 person); Deputy Chairs (4 people); Foundation Liaison Officer (1); Executive Secretariat (2); Vice Chairs, Section on Great Apes (5); Vice Chairs, Section on Small Apes (3); Vice Chairs, Section on Human-Primate Interactions (2); Regional Vice Chairs – Neotropics, Mesoamerica (2), Northern Andean countries (6), Brazil and the Guianas (7), Southern Cone (1); Regional Vice Chairs – Africa (5); Regional Vice Chairs – Madagascar (3); Regional Vice Chairs – Asia, China (1), East and Southeast Asia (9), South Asia (2); Red List Authorities (3). Total = 51 members. The Neotropical Region has been also restructured, and the number of members was almost doubled from 79 to 152, resulting in a better gender balance, from 61% male x 39% female in 2017–2020, to 53% male x 47% female in 2021–2025. Also, at least 20 of the new members are under 40 years old, including 14 females and one of the new Regional Vice Chairs.

T-017 (KSR 4)

Number of new national/regional sections added to the PSG: 2

Result description: The Southern Cone section (Neotropical Region) and Section on Human-Primate Interactions have been added.

T-033 (KSR 2)

Number of SSC members recruited: ongoing

Result description: The PSG Young Section started its organisation, recruiting members from all the main range regions, defining its mission and initial goals, selecting a logo and running a few planning meetings.

Synergy

T-034 (KSR 1)

Number of 'in kind' partnerships established and maintained: ongoing

Result description: (1) The Lemur Portal: The volume of content on the Lemurs Portal has grown significantly and currently contains approximately 16,000 records of lemur species occurrences or sightings, over 1,400 documents on lemurs and their habitats, fact sheets on 112 recently recorded species, and over 800 registered users. Over the last three years, the tool has been an asset to build the capacity of natural resource managers at different scales in nine regions of Madagascar and has raised awareness on lemurs and their importance for sustainable development to more than 400 academic students, as well as urban and rural communities. As a next step, the aim is to link the Madagascar Lemurs portal to ecotourism in order to improve lemur conservation through the participation of tourists and the general public. (2) Red Colobus Conservation Network: Funds provided for the ongoing coordination of the range-wide Red Colobus conservation initiatives.

COMMUNICATE

Communication

T-003 (KSR 12)

Number of print communications materials distributed in relation to specific taxonomic groups: 2

Result description: Best Practice Guidelines are being prepared by the Sections on Human-Primate Interactions (SHPI) and Small Apes (SSA), covering all primates except great apes. In progress: (a) Nocturnal Primate Tourism and (b) Lemur Tourism. Both SHPI and SSA applied for funds. In 2020, members of the PSG contributed to the edition of an inedit normative act to regulate primate observation in protected areas in the Brazilian State of São Paulo, including important parks and reserves for the protection of threatened species like Southern Muriqui (*Brachyteles arachnoides*), Black Lion Tamarin (*Leontopithecus chrysopygus*), Black-faced Lion Tamarin (*Leontopithecus caissara*), Buffy-tufted-ear Marmoset (*Callithrix aurita*) and Brown Howler Monkey (*Alouatta guariba*). Since then, PSG members are active in promoting the effective implementation of this normative (Portaria Normativa FF/DE Nº 324/2020; https://smastr16.blob.core.windows.net/fundacaoflorestal/sites/243/2020/10/portaria-observacao-de-primatas-versao-final-22-10-2020-rodrigo-levkovicz.pdf).

T-008 (KSR 12)

Number of Species e-bulletin, Save Our Species newsletter, SSC Groups' newsletter editions produced: 6

Result description: We published the following newsletters/journals: *Asian Primates Journal*: Vol. 9(1) (2021), 6 articles, 55 pp.; *Lemur News*: Vol. 23 (2021), 20 articles, 75 pp.; *Neotropical Primates*: Vol. 26(2, Special Edition) (2020), 18 articles, 130 pp.; Vol. 27(1) (2021), 10 articles, 60 pp.; *African Primates*: Vol. 15 (2021), 4 articles, 64 pp.; *Vietnamese Journal of Primatology*: Vol. 3(3) (2021), 8 articles, 204 pp.

T-009 (KSR 12)

Number of Species e-bulletin, Save Our Species newsletter, SSC Groups' newsletter editions produced: 1

Result description: We published *Primate Conservation*, Vol. 35 (2021), 17 articles, 217 pp.

T-010 (KSR 12)

Number of print communications materials distributed in relation to specific taxonomic groups: 0

Result description: The 25 Most Endangered Primates list is drawn up at the, normally biennial, congress of the International Primatological Society. The 2020 congress was not held; it was postponed to January 2022. An article was published concerning the 25 Most Endangered Species List: Reuter, K.E., et al. (2021). 'The 25 most endangered primates list: impacts on conservation fundraising and policy'. In: E. Freedman, S.S. Hiles and D. Sachsman (eds.) *Communicating Endangered Species: Extinction, News and Public Policy*, pp.101–115. Abingdon, UK: Routledge.

T-011 (KSR 13)

Number of print communications materials distributed in relation to specific taxonomic groups: 2

Result description: Progress on these publications is as follows: (1) Published: Mittermeier, R.A., et al. (2021). *Mammals of Madagascar with the Comoros, the Seychelles, Réunion and Mauritius*. Lynx Illustrated Checklists. Barcelona: Lynx Edicions. (2) Published: Beauséjour, S., Rylands, A.B. and Mittermeier, R.A. (2021). *All Asian Primates*. Austin, TX: Re:wild and Barcelona: Lynx Edicions. (3) Lemur Field Guide, 5th edition. Well underway, with possible publication in 2022; (4) Primates of the Neotropical Region. Lynx Illustrated Checklists, Lynx Edicions, Barcelona. Well underway; (5) Pocket Guide to the Primates of East Africa. 2nd edition. Underway; (6) Pocket Guide to the Primates of Northeast Africa. Underway; (7) Pocket Guide to the Primates of Thailand, peninsular Malaysia and Singapore. Underway; (8) Pocket Guide to the Gibbons. Underway.

T-013 (KSR 13)

Number of SSC members' presentations developed in relation to specific taxonomic groups: numerous

Result description: Seven travel grants were awarded, courtesy of the Margot Marsh Biodiversity Foundation, to the 28th Congress of the International Primatological Society, Quito, Ecuador, January 2022. A further three travel grants for the same meeting were awarded to three Brazilian students via a Primate Action Fund contribution to the Adelmar Coimbra-Filho awards of the Brazilian Society of Primatology (SBPr).

Acknowledgements

Synchronicity Earth, IUCN Science and Strategy Group (Asia), Margot Marsh Biodiversity Foundation (MMBF), Arcus Foundation, Mohamed bin Zayed Species Conservation Fund (MBZ), the Rainforest Trust, and Re:wild have most generously supported the Primate Specialist Group throughout 2021 – the last, particularly, in hosting the groups' activities and top personnel.

Summary of achievements

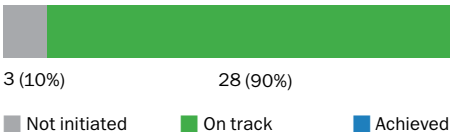
Total number of targets 2021–2025: 31

Geographic regions: 27 Global, 4 Africa, 1 Asia

Actions during 2021:

Assess:	3 (KSR 5, 6)
Plan:	4 (KSR 8, 9)
Act:	10 (KSR 10)
Network:	5 (KSR 1, 2, 4)
Communicate:	6 (KSR 12, 13)

Overall achievement 2021–2025:



IUCN SSC Sirenia Specialist Group





CO-CHAIR
Helene Marsh (Dugongs)
James Cook University, Townsville, Australia

CO-CHAIR
Anmari Alvarez Aleman (Manatees)
Clearwater Marine Aquarium Research Institute, Florida, US

RED LIST AUTHORITY COORDINATOR
Alejandro Ortega-Argueta
Departamento de Conservación de la Biodiversidad, El Colegio de la Frontera Sur, ECOSUR, Mexico

NUMBER OF MEMBERS
80

SOCIAL MEDIA AND WEBSITE
Website: https://mission.cmaquarium.org/research-institute/manatee-research/sirenews/

Mission statement

The mission of the Sirenia Specialist Group (SSG) is to provide recommendations to managers and stakeholders in range states regarding research and conservation actions to ensure the long-term conservation of all extant Sirenian populations contribute by increasing current knowledge of their status and distribution and identifying issues of concern and suggesting culturally-appropriate, effective and efficient corrective actions. Our ultimate goal is that local population of the sirenia species are recovered and the species diversity is maintained in order to increase resilience to the effects of climate change and major stochastic events, especially extreme weather.

Projected impact 2021–2025

(1) Increase knowledge about the different Sirenian species and populations across their ranges. (2) Support and strengthen the network of researchers and conservationists that direct work with the species. (3) Share conservation and research initiatives among the network of collaborators. Provide status updates for the Red List assessments. (4) Support and promote conservation planning and management actions at regional, national, and local levels.

Targets 2021–2025

ASSESS

T-001 Conduct regional Red List assessments for total of ~8 dugong subpopulations.

T-002 Conduct subspecies assessments for Florida Manatee (*Trichechus manatus latirostris*) and Antillean Manatee (*Trichechus manatus manatus*).

T-004 Carry out aerial surveys for West Indian Manatees (*Trichechus manatus*) in Central America to provide population estimates.

T-005 Designate Important Marine Mammal Areas (IMMAs) for the entire global Dugong (*Dugong dugon*) range.

T-007 Develop monitoring strategies for the Antillean manatee populations in habitats with limited visibility.

PLAN

T-006 Prepare Plans of Action or Recovery for species and subpopulations in their countries of distribution.

T-008 Influence implementation of Dugong MOU.

COMMUNICATE

T-003 Produce and publish *Sirenews* bulletins.

Activities and results 2021

ASSESS

Red List

T-001 (KSR 6)

Number of national Red List reassessments published: 0

Result description: Progress was made on drafting regional assessments for Dugong subpopulations in Coastal East Africa and New Caledonia. Process is being made in finishing the Antillean and Florida subspecies assessments for the Red List.

T-005 (KSR 6)

Number of technical documents provided to support Red List assessments/reassessments: 32

Result description: Progress was made on drafting regional assessments for Dugong subpopulations in Coastal East Africa and New Caledonia. Process is being made in finishing the Antillean and Florida subspecies assessments for the Red List.

COMMUNICATE

Communication

T-003 (KSR 12)

Number of Species e-bulletin, Save Our Species newsletter, SSC Groups' newsletter editions produced: 2

Vulnerable West Indian Manatee, *Trichechus manatus*, Xclalak, Costa Sur de Quintana Roo
Photo: Luis. F. Amezcua





Vulnerable Dugong, *Dugong dugon*
Photo: Ahmed Shawky

Result description: Two bulletins were published in 2021 with information and local news about research and conservation initiatives for manatees and dugongs.

Acknowledgements

We would thank the SSC Conservation Planning group, The Clearwater Marine Aquarium Research Institute, Secretariat UNEP Dugong MOU, Abu Dhabi.

Summary of achievements

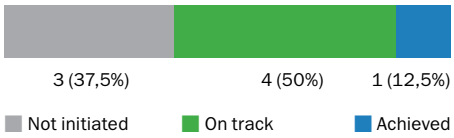
Total number of targets 2021–2025: 8

Geographic regions: 2 Africa, 4 America, 2 Asia, 2 Global, 2 Oceania

Actions during 2021:

Assess: 2 (KSR 6)
Communicate: 1 (KSR 12)

Overall achievement 2021–2025:



IUCN SSC Small Carnivore Specialist Group





CO-CHAIR
Daniel Wilcox
IUCN Asia Regional Office, Thailand

CO-CHAIR
José F. González-Maya
ProCAT Colombia, Bogotá, Colombia

RED LIST AUTHORITY COORDINATOR
Will Duckworth
Bath, UK

NUMBER OF MEMBERS
85

SOCIAL MEDIA AND WEBSITE
Facebook: @SmallCarnivores
Journal: www.smallcarnivoreconservation.com
Twitter: @IUCN_SCSG
Website: www.smallcarnivore.org

Mission statement

The mission of the Small Carnivore Specialist Group (SCSG) is to build capacity among small carnivore researchers and conservationists, generate information on species status, provide venues to generate and publish new knowledge, and to maintain the most up-to-date status assessments for the group's species.

Projected impact 2021–2025

Projected impacts for the 2021–2025 period are: better public awareness on the priority small carnivores for conservation; better awareness on the links between carnivore trade/use and zoonotic disease; and updated Red List assessments for the group's 170+ species with a particular focus on small carnivore species distributed in North, Central and South America and Madagascar.

Targets 2021–2025

ASSESS

T-006 Complete Red List assessments for all of the group's species by 2025.

T-008 Maintain an annual issue of the group's peer-reviewed journal, *Small Carnivore Conservation*.

PLAN

T-005 Implement One Plan Approach conservation strategy for Malagasy Carnivores.

ACT

T-010 Provide mentorship to the Owston's Civet (*Chrotogale owstoni*) programme coordinator, based at Save Vietnam's Wildlife, Viet Nam.

NETWORK

T-002 Develop a working group to coordinate Owston's Civet conservation between the group's members, European Association of Zoos and Aquaria (EAZA) and local NGOs in range countries.

T-003 Develop a working group to coordinate European Mink (*Mustela lutreola*) conservation between the group's members, EAZA and local NGOs in range countries.

T-004 Develop a working group to coordinate the conservation of Malagasy carnivores between the group's members, EAZA and local NGOs in range countries.

T-007 Develop a multi-language species record database for mainland Southeast Asia (Thailand, Viet Nam, Cambodia, Lao PDR, and Myanmar).

T-009 Increase membership from priority countries or regions: Madagascar, Southeast Asia, West Africa, Central Africa.

COMMUNICATE

T-001 Establish a new website for the Small Carnivore Specialist Group to highlight the group's conservation priorities and the work of its membership.

Activities and results 2021

ASSESS

Research activities

T-008 (KSR 5)

Number of publications produced in internal journals of SSC groups: 1

Result description: A 2021 issue of the group's peer-reviewed journal, *Small Carnivore Conservation*, was produced. The journal is now being revised and will migrate to the Open Journal Systems (OJS) system. The revamped journal will be completed by mid-2022.



Yellow-throated Marten (*Martes flavigula*), Kaeng Krachan National Park, Thailand
Photo: Daniel Willcox

ACT

Technical advice

T-010 (KSR 10)

Number of technical consultations provided to support conservation actions: 1

Result description: Daniel Willcox is providing ongoing mentorship to the Owston's Civet programme coordinator at Save Vietnam's Wildlife. This mentorship has covered: development of funding proposals, development of captive breeding proposal, and reviews of two manuscripts.

NETWORK

Synergy

T-002 (KSR 3)

Working group developed: 0

Result description: Owston's Civet working group has been initiated but not yet formalised; we are waiting for finalisation of the website.

T-004 (KSR 3)

Working group developed: 0

Result description: We joined one meeting organised by the EAZA Small Carnivore Taxon Advisory Group (TAG) regarding Regional Collection Planning (RCP). This featured lengthy discussions on roles (potential or realised) for the Malagasy carnivores.

COMMUNICATE

Communication

T-001 (KSR 13)

Number of digital communication outputs developed in relation to specific taxonomic groups: 0

Result description: Funding for the new website has been secured; it is now under development and scheduled for finalisation in mid-2022.

Acknowledgements

The IUCN SSC Small Carnivore Specialist Group wishes to thank the following organisations for their support: Wild Planet Trust, Mandai Nature [formerly Wildlife Reserves Singapore], Tallinn Zoo and the EAZA Small Carnivore TAG.

Summary of achievements

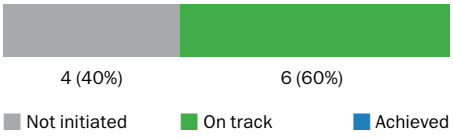
Total number of targets 2021–2025: 10

Geographic regions: 4 Global, 2 Africa, 3 Asia, 1 Europe

Actions during 2021:

Assess:	1 (KSR 5)
Act:	1 (KSR 10)
Network:	2 (KSR 3)
Communicate:	1 (KSR 13)

Overall achievement 2021–2025:



2021 Report

IUCN SSC Small Mammal Specialist Group





CO-CHAIR
Thomas Lacher
Department of Ecology and Conservation Biology, Texas A&M University, College Station, Texas, US

CO-CHAIR
Rosalind Kennerley
Durrell Wildlife Conservation Trust, Bath, UK

RED LIST AUTHORITY COORDINATOR
Rosalind Kennerley
Durrell Wildlife Conservation Trust, Bath, UK

NUMBER OF MEMBERS
107

SOCIAL MEDIA AND WEBSITE
Facebook: @iucnsmsg
Twitter: @IUCN_SMSG
Website: **https://small-mammals.org**

Mission statement

The mission of the IUCN SSC Small Mammal Specialist Group (SMSG) is to serve as the global authority on the world's small mammals through developing a greater scientific understanding of their diversity, status and threats, and by promoting effective conservation action to secure their future.

Projected impact 2021–2025

Through our Key Species work we hope to understand threats and where possible initiate conservation activities for at least 18 species. Through our Key Region work we plan to assess and plan for a suite of species in Mexico, Sulawesi and Ethiopia. If possible, direct conservation activities will be pursued. In addition to species within our strategy, we will also take any opportunities to assist our members to do vital research and conservation work on species.

Targets 2021–2025

ASSESS

T-005 Scientific peer-review publications about small mammal ecology and conservation.

T-006 Catalogue and publish species Red List assessments and reassessments for taxonomic changes.

T-007 Red List (re)assessments for certain regions (Mexico, Sulawesi, Ethiopia) based on new information collected during workshops.

PLAN

T-004 Hold regional action planning workshops.

ACT

T-008 Initiate active conservation efforts for key species.

NETWORK

T-001 Achieve taxonomic and geographic coverage for the majority of species through a geographically diverse membership.

T-002 Improve gender balance in membership.

T-009 Provide grant writing training and support to members.

COMMUNICATE

T-003 Keep membership updated through quarterly newsletters and an updated website.

Activities and results 2021

ASSESS

Red List

T-006 (KSR 6)

Number of new global Red List assessments completed: 11

Result description: Species reassessments were published in 2021.

T-006 (KSR 6)

Number of new global Red List reassessments completed: 48

Result description: Species reassessments published in 2021.

T-007 (KSR 6)

Number of global Red List reassessments completed: 0

Result description: Red List reassessments for Mexican species were drafted in 2021 under the supervision of Tom Lacher and the changes were based on information obtained during the SMSG Mexican workshop in 2018. These reassessments will hopefully be published in 2022.

T-007 (KSR 6)

Number of new global Red List assessments completed: 0

Result description: New Red List assessments for Mexican species were drafted in 2021 under the supervision of Tom Lacher and the changes were based on information obtained during the SMSG Mexican workshop in 2018. These assessments will hopefully be published in 2022.

Research activities

T-005 (KSR 5)

Number of scientific publications about species research that acknowledge SSC affiliation: 2



Santa Catarina Guinea Pig (*Cavia intermedia*)
Photo: Thomas Lacher

Result description: We published two peer-reviewed publications in 2021 on small mammals: (1) Kennerley, R.J., et al. (2021). 'Global patterns of extinction risk and conservation needs for Rodentia and Eulipotyphla'. *Diversity and Distributions* 27(9):1792–1806. https://doi.org/10.1111/ddi.13368; (2) Lacher Jr., T.E., et al. (2021). 'Support for rodent ecology and conservation to advance zoonotic disease research'. *Conservation Biology* 35(4):1061–1062. https://doi.org/10.1111/cobi.13763.

ACT

Conservation actions

T-008 (KSR 10)

Number of actions addressing major drivers/emerging threats of species or population loss: 2

Result description: Namdapha Flying Squirrel (*Biswamoyopterus biswasi*) and Large Rock Rat (*Cremnomys elvira*) fieldwork has been able to continue in 2021 (though with some limitations). For the squirrel, the aim is to rediscover the species, which is only known from a single specimen from 1981, so the fieldwork is undertaking night-time surveys mainly in the type locality. A whole range of ecological data is being collected by our SMSG member working on the Large Rock Rat and in 2021 he received a follow-on EDGE grant to continue his work. This information will inform the conservation status of the species and identify priority actions for next steps. Other projects have been delayed due to COVID-19 restrictions on travel and fieldwork involving people (such as Local Ecological Knowledge research).

NETWORK

Capacity building

T-009 (KSR 2)

Number of people trained in conservation planning: 3

Result description: We assisted three members with their species-specific applications to funding grants.

Membership

T-001 (KSR 2)

Number of SSC members recruited: 8

Result description: Eight new members were added in 2021 to increase the geographic and species coverage.

COMMUNICATE

Communication

T-003 (KSR 12)

Number of Species e-bulletin, Save Our Species newsletter, SSC Groups' newsletter editions produced: 4

Result description: We provided members with quarterly updates in 2021, which included information about the group's activities and opportunities for funding and how to get involved, etc. We launched our new website, which was developed with support from ZSL.

Acknowledgements

We would like to thank Re:wild for their continued support for both the SMSG's core costs and also on a number of our Key Species projects, to which they have kindly provided financial and strategic support. We have also received funding support from Ernest Kleinwort Charitable Trust for our Key Species work. We thank Texas A&M University for logistical support and resources.

Summary of achievements

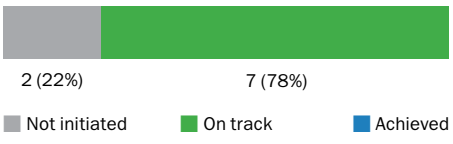
Total number of targets 2021–2025: 9

Geographic regions: 8 Global, 1 Africa, 1 America, 1 Asia

Actions during 2021:

Assess: 3 (KSR 5, 6)
Act: 1 (KSR 10)
Network: 2 (KSR 2)
Communicate: 1 (KSR 12)

Overall achievement 2021–2025:



IUCN SSC South American Camelid Specialist Group



CHAIR
Pablo Carmanchahi
Grupo de Investigación en Ecofisiología de Fauna Silvestre. GIEFAS – INIBIOMA – CONICET – UNCOMA, Asentamiento Universitario de San Martín de los Andes, Universidad Nacional del Comahue, Neuquén, Argentina

RED LIST AUTHORITY COORDINATOR
Pablo Acebes
Department of Ecology, Universidad Autónoma de Madrid, Spain

NUMBER OF MEMBERS
33

SOCIAL MEDIA AND WEBSITE
Twitter: @GrupoGecs
Website: www.camelid.org

Mission statement

To promote the conservation and sustainable use of (wild) South American Camelids in their area of geographic distribution.

Projected impact 2021–2025

The planning established internally in our Group aims to provide by 2025 an important advancement in the reduction of the threats currently faced by South American camelids. In this sense, we will work to reduce the risk of local extinction of some populations that are currently highly threatened and have a high degree of fragmentation. To this end, we intend to strongly influence public policies, such as the International Convention for the Conservation of the Vicuña and the National Management and Conservation Plan for Guanacos in Argentina. Through the active participation of members, we will work to reduce the conflict between South American camelids and human activities in those populations that currently show signs of recovery and are abundant. Through the generation of new information, we will begin a process of precise evaluation of the populations on a regional scale for local classification into conservation categories. Through dissemination and communication actions, we will try to give visibility to the threats to vulnerable populations, as well as to the possibility of use of our species. We will continue to support the sustainable use of species for the benefit of local communities, and we will generate actions to confront poaching and illegal trade in order to reduce their impact on natural populations. We are convinced that both conservation initiatives and programmes for the sustainable use of the species, combined with communication and education programmes, will have a positive impact on the attitudes of communities throughout the range of South American camelids.

Targets 2021–2025

ASSESS

T-011 Complete Guanaco (*Lama guanicoe*) subspecies assessment for the Red List.

PLAN

T-006 Participate in the development of a management and conservation plan for Vicuñas (*Vicugna vicugna*) in Argentina.

T-007 Participate in the development of a conservation plan for Guanaco in Perú.

T-008 Review the National Management Plan for Guanacos in Argentina.

T-009 Update Animal Welfare Criteria for the Management of South American Wild Camelids, and Protocol of Good Management Practices for Wild Guanacos and Vicuñas.

T-010 Develop an animal welfare protocol applied to commercial hunting.

ACT

T-003 Elaborate a report about mange disease in Vicuña.

T-013 Develop a position statement about commercial hunting.

T-014 Participate in the annual meeting of the Vicuña International Convention.





Vicuña (*Vicugna vicugna*) in Paso San Francisco, Catamarca, Argentina
Photo: Pablo Carmanchahi

Bachelor group of wild Guanacos (*Lama guanicoe*) in La Payunia Provincial Reserve, Mendoza, Argentina
Photo: Julie Maher

T-016 Provide advice to the National Parks Administration of Argentina on the rewilding of wild Guanacos in El Impenetrable National Park, Chaco.

NETWORK

T-004 Update the GECS membership protocol and develop a membership cancellation protocol.

COMMUNICATE

T-001 Publish one GECS Newsletter per year and obtain the GECS Newsletter ISSN.

T-002 Develop a communication strategy for the South American Camelid Specialist Group (GECS, for Grupo Especialista en Camélidos Sudamericanos) and update the GECS website by 2021.

Activities and results 2021

PLAN

Policy

T-008 (KSR 9)

Number of policies where SSC members provided technical input: 4

Result description: During 2021, the members of our Group have actively participated in the revision of the National Management Plan for Guanacos in Argentina. To this end, they have participated in four workshops, giving oral presentations and generating written documents that will serve as the basis for the development of a new plan. During the 2022 they will continue with these tasks and will work on the drafting of this plan.

ACT

Conservation actions

T-003 (KSR 10)

Number of technical documents provided to support conservation actions: 0

Result description: Requested at the last Technical Meeting of the Convenio Internacional para la Conservación y Manejo de la Vicuña in 2018, our Group started in 2021 the report on scientific and technical aspects about sarcoptic mange in Vicuñas. This document gathers and analyses scientific knowledge and management aspects, research priorities and recommendations with the objective of preventing, diagnosing and mitigating the disease. This document arises as an interdisciplinary and international scientific-technical collaboration based on this demand of the Convention. The elaboration of this document will continue in 2022.

Technical advice

T-014 (KSR 10)

Number of technical consultations provided to support conservation actions: 1

Result description: Our Specialist Group is the overseer of the International Vicuña Convention, which is made up of focal representatives from Argentina, Chile, Bolivia, Peru and Ecuador. The GECS is currently collaborating with the Pro Tempore Secretariat and member countries to hold the next Technical Meeting, after three years without being able to do so due to the pandemic. To this end, several GECS members participated in a preparatory meeting for the formal meeting to be carried out in August 2022.

T-016 (KSR 10)

Number of technical consultations provided to support conservation actions: 1

Result description: In 2021, we formed a new working commission, the Rewilding Commission, to deal with specific issues related to this topic in South American camelids. This commission is formed by four members of our Group. During 2021, we advised the National Parks Administration of Argentina on a project presented by Rewilding Argentina for the introduction of wild Guanacos in El Impenetrable National Park in the province of Chaco.

NETWORK

Membership

T-004 (KSR 2)

Number of SSC members recruited: 2

Result description: During 2021, we formed the new membership committee and updated the admission protocol for new candidates. The committee was formed by four members of the Group and two applications have been evaluated so far.

Acknowledgements

Our group thanks the SSC for the award of an SSC Internal Grant, which was used to redesign and edit our group's newsletter *GECS News* and also to design and put online the group's new website. We also thank KUM Digital (Pablo Perez and Mariana Slemenson), who with great patience and dedication understood and carried out our ideas for the design of the website and newsletter.

Summary of achievements

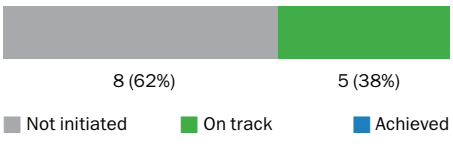
Total number of targets 2021–2025: 13

Geographic regions: 13 America

Actions during 2021:

Plan: 1 (KSR 9)
Act: 3 (KSR 10)
Network: 1 (KSR 2)

Overall achievement 2021–2025:



IUCN SSC Tapir Specialist Group



CHAIR
Patrícia Medici
IPÊ - Instituto de Pesquisas Ecológicas, Brazil

NUMBER OF MEMBERS
130

SOCIAL MEDIA AND WEBSITE
Facebook: Tapir Specialist Group
Twitter: @IUCN_Tapirs
Website: https://tapirs.org/

Mission statement

The IUCN SSC Tapir Specialist Group (TSG) is a global group of biologists, zoo professionals, researchers and advocates dedicated to conserving tapirs and their habitat through strategic action planning in countries where tapirs live, information sharing, and through educational outreach that shows the importance of the tapir to local ecosystems and to the world at large.

Projected impact 2021–2025

By the end of 2025, we want to have strong group representation in all tapir range countries in Latin America and Southeast Asia and stable, long-term research and conservation programmes in several of these countries.

Targets 2021–2025

ASSESS

T-001 Establish joint tapir research and conservation programmes including multiple tapir species and range countries.

T-002 Establish a network of tapir research and conservation programmes representing all tapir range countries.

PLAN

T-003 Publish a visual, popular version of at least two TSG action plans – Baird's Tapir (*Tapirus bairdii*) and Mountain Tapir (*Tapirus pinchaque*) – condensed, accessible and mobile for use.

NETWORK

T-004 Expand the TSG fellowship.

T-005 Integrate our education curriculum 'Tapir Tracks' with education programmes.

T-006 Involve TSG members in at least three TSG strategic plan actions.

T-007 Obtain a minimum of 10 new alliances between *ex situ* and *in situ* conservation efforts.

COMMUNICATE

T-008 Resurrect the tapir conservation newsletter.

T-009 Upload at least 100 scientific papers to the TSG virtual library.

Activities and results 2021

ASSESS

Research activities

T-001 (KSR 5)

Number of joint programmes designed and established: 4

Result description: Current joint programmes: TSG and Fondation Segre World Tapir Conservation Programme (ongoing); Baird's Tapir Conservation Alliance (ongoing); TSG Colombia Network (ongoing); Brazil Action Plan Network (ongoing).

T-002 (KSR 5)

Network established and maintained: ongoing

Result description: The joint research and conservation programmes mentioned above also operate as regional and/or global networks focused on tapir conservation. Most Latin American countries are represented. We are working on Southeast Asia.

NETWORK

Capacity building

T-004 (KSR 2)

Number of people trained in conservation planning: Ongoing.



Lowland Tapir, Brazil
Photo: Patrícia Medici



Patrícia Medici and her team gathering genetic data from a anesthetized tapir in Brazil's Pantanal
Photo: Patrícia Medici

Result description: The TSG Fellowship Programme did not operate during the pandemic (2020–2021). We are currently resuming the programme and planning for the second half of 2022 and 2023.

T-005 (KSR 2)

Number of people trained in conservation action: Ongoing.

Result description: Tapir Tracks has been translated into Portuguese and Spanish. It is currently being used systematically in Brazil and Honduras.

Synergy

T-006 (KSR 2)

TSG members involved: Ongoing.

Result description: This work is continuous.

T-007 (KSR 2)

Number of 'funding' partners established and maintained: Ongoing.

Result description: This work is continuous.

COMMUNICATE

Communication

T-009 (KSR 12)

Number of publications uploaded: Ongoing.

Result description: Preparation of publications is in process.

Acknowledgements

TSG Steering Committee; Association of Zoos and Aquariums (AZA); Tapir Taxon Advisory Group (TAG); Copenhagen Zoo, Denmark; European Association of Zoos and Aquaria (EAZA); Fondation Segré, Switzerland; IPE - Institute for Ecological Research, Brazil; IUCN SSC Conservation Planning Specialist Group (CPSG); ProCAT Colombia; and so many others.

Summary of achievements

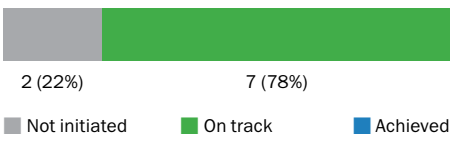
Total number of targets 2021–2025: 9

Geographic regions: 9 Global

Actions during 2021:

Assess: 2 (KSR 5)
Network: 4 (KSR 2)
Communicate: 1 (KSR 12)

Overall achievement 2021–2025:





SZB Conference. Keynote Speech *My Friend is a Tapir* Campaign
Photo: Patrícia Medici

IUCN SSC Wild Pig Specialist Group



CHAIR
Johanna Rode-Margono
Stiftung Artenschutz (Cologne Zoo, Cologne, Germany)

RED LIST AUTHORITY COORDINATOR
Kristin Leus
Scientific Department, Copenhagen Zoo, Denmark

NUMBER OF MEMBERS
46

SOCIAL MEDIA AND WEBSITE
Facebook: IUCN / SSC Wild Pig Specialist Group
Website: https://www.iucn-wpsg.org

Mission statement

The SSC Wild Pig Specialist Group (WPSG) has not yet defined a mission statement. Key components of such a statement would be: (1) viable wild pig populations, (2) all wild pig taxa, (3) threat management, (4) conservation breeding, (5) reintroduction, (6) habitat restoration and management, and (7) resolution of conflicts with people. Most wild pig species are in decline, especially the various species and subspecies in Indonesia and the Philippines. The WPSG uses a combination of strategies to try to reduce these population declines. This primarily includes (1) research on taxonomy and distribution (the cornerstone of any conservation management), and (2) management of captive and wild populations to prevent the extinction of the most threatened species.

Projected impact 2021–2025

We aim to safeguard the small populations of the two Critically Endangered suid species, Pygmy Hog (*Porcula salvania*) and Visayan Warty Pig (*Sus cebifrons*), and to continue the captive breeding and reintroduction programmes. The target for Pygmy Hogs is to ensure a population in the wild of at least 250 individuals. For Visayan Warty Pig, we aim to conduct the first successful reintroduction programme on the island of Negros. For all other species, we aim to reliably assess population status and trends, and to initiate or adapt conservation programmes that can stabilise populations in the wild. For Wild Boar (*Sus scrofa*) we still aim to revise the taxonomy of the current 18 subspecies.

Targets 2021–2025

ASSESS

T-003 Assess the taxonomy of Sulawesi ungulates by conducting phylogenetic/taxonomic research, by 2021.

T-008 Assess the population status (distribution, numbers of populations, population size) of the Mindoro Warty Pig, by mid-2022.

T-013 Survey and monitor the Javan Warty Pig (*Sus verrucosus*) (continuous).

T-014 Clarify the species status of Bawean Warty Pigs (*Sus blouchi*) by end of 2021.

T-025 Assess the status of the Giant Forest Hog (*Hylochoerus meinertzhageni*) in Uganda, by mid-2022.

T-026 Re-assess the Giant Forest Hog status, by end of 2022.

T-027 Conduct comprehensive surveys on all pig species in Indonesia and Malaysia, by end of the quadrennium.

T-028 Assess the phylogenetic relationships of all Philippine pig species, by end of 2023.

T-030 Explore the potential threat of hybridisation to wild pig species, in relevant species, by end of the quadrennium.

T-034 Conduct ecological research on the Pygmy Hog (habitat, determinants of presence, etc.), by the end of the quadrennium.

T-037 Develop a database of ancient and recent data on the distribution of Giant Forest Hog in order to update its geographical range, provide a basis for the analysis of its range contraction and contribute a future assessment of its Red List status.

T-038 Study the morphology and phenotypic differences between the two species of warthog.

T-039 Study the eco-ethology, ethnobiology and the sympatric relationships between Red River Hog (Potamochoerus porcus) and Common Warthog (Phacochoerus africanus) in different ecosystems in southern Benin.

PLAN

T-001 Develop a Conservation Needs Assessment and Planning Strategy for all species, with the Conservation Planning Specialist Group (CPSG), by end of 2022.

T-002 Develop an EAZA Tapir and Suiform Regional Collection Plan.



Pygmy Hog (*Porcula salvania*) adult female
Photo: Parag Deka

T-004 Finalise the output of the West Visayan Conservation Workshop, by mid-2021.

T-012 Develop action plans in relation to the threat of African Swine Fever to prioritised wild pig species in Asia, by end-2021.

T-017 Develop action plans in relation to the threat of African Swine Fever to all relevant wild pig species in Asia, by end-2022.

ACT

T-005 Conduct the first successful Visayan Warty Pig reintroduction programme, by 2024.

T-006 Streamline the efforts of conservation breeding of Visayan Warty Pigs on Negros and Panay through networking, capacity building and breeding plans.

T-009 Ensure active and comprehensive collaboration of conservation breeding of Javan Warty Pigs, by mid-2022.

T-011 Secure at least one safe and pure population of Javan Warty Pigs in the wild, by end of 2022.

T-015 Establish a successful release programme for Javan Warty Pigs in East Java, by end of 2024.

T-024 Implement the Babirusa (*Babyrousa* spp.) Global Species Management Plan.

T-031 Develop a database for African pig species data, by end of 2022.

T-032 Release 60 Pygmy Hogs in the next five years, starting from 2020, in the Rupahi grassland of Manas National Park, by end of the quadrennium.

T-033 Identify and monitor the status of wild and released populations of Pygmy Hogs (continuous).

T-035 Conduct a Disease Risk Analysis (DRA) to establish a robust biosecurity protocol to ensure the management of a healthy breeding programme for Pygmy Hogs, by the end of 2021.

NETWORK

T-016 Formalise advisory committee and regional advisors, by end of 2021.

T-018 Update membership and recruit new members for neglected species and other disciplines.

T-020 Develop fundraising plan, making contacts with the pig production industry for fundraising, by end-2021.

T-021 Build an effective network of WPSG Africa experts, by end-2021.

T-022 Develop a system for regular meetings (e.g. online) to improve group dynamics, by end of 2021.

T-023 Use the International Symposium on Wild Boar and Other Suids as a platform for WPSG activities in 2022.

T-036 Finalise a new memorandum of understanding (MoU) between the main partners for the continuation of the Pygmy Hog release programme for five more years, by end of 2021.

COMMUNICATE

T-010 Regularly publish the WPSG's Newsletter *Suiform Soundings* (continuous).

T-019 Update the website, including a restricted member area for communication, by mid-2021.

T-029 Update all members on African Swine Fever (ASF) globally (continuous).

Activities and results 2021

ASSESS

Red List

T-026 (KSR 6)

Number of global Red List reassessments completed: 0

Result description: Research is still carried out on the occurrence and conservation status of the species in some parts of its range, but current data already suggest that populations are increasingly fragmented and isolated due to deforestation and a variety of other destructive human activities.

Research activities

T-003 (KSR 5)

Number of research projects completed or supported by SSC members per taxonomic group and region: 0

Result description: Research is ongoing for a planned Anoa (*Bubalus depressicornis* and *B. quarlesi*) taxonomy publication. James Burton (Asian Wild Cattle Specialist Group Chair) and Marcel Alaze (Anoa EAZA Ex situ Programme Coordinator) have expanded the Anoa taxonomy research group to include a taxonomic researcher from the German Centre for Integrative Biodiversity Research (iDiv), Leipzig Zoo and European zoo professionals to build more data into the Anoa research and planned taxonomy publication. The results of recent genetic analysis by Queen Mary's University have added further unexpected complexity to the Anoa population structure, necessitating greater taxonomic analysis to match the detailed genetic assessment.

T-008 (KSR 5)

Number of research projects completed or supported by SSC members per taxonomic group and region: 0

Result description: Several surveys were conducted, and an oral presentation at the International Symposium for Wild Boar and other Suids 2022 is planned by the project.

T-013 (KSR 5)

Number of research projects completed or supported by SSC members per taxonomic group and region: 1

Result description: This is a continuous project. In 2021, the Javan Species Recovery Programme (JaSpeR) conducted the following activities: continued camera trap monitoring, improving relationships with hunters in the area to be able to rescue wounded warty pigs, conducting a distinct experimental research project on the effectiveness of crop protection measures, and continuous community awareness activities.

T-014 (KSR 5)

Number of research projects completed or supported by SSC members per taxonomic group and region: 1

Result description: The project genotyped *Sus scrofa vittatus*, *Sus blouchi* and *Sus verrucosus* samples using the Porcine SNP60 v2 BeadChip (Illumina Inc.). The dataset was merged with published data from *S. verrucosus*, *S. celebensis* and *S. barbatus*. Preliminary results of most analyses show that the divergence between *S. verrucosus* and *S. blouchi* is more pronounced than that between *S. celebensis* and *S. barbatus*. Furthermore, our genomic data indicate that *S. verrucosus* and *S. blouchi* are phylogenetic species with an allopatric distribution. A publication is in preparation.

T-025 (KSR 5)

Number of research projects completed or supported by SSC members per taxonomic group and region: 1

Result description: We successfully completed the Project 'Conservation of Giant Forest Hog in a Set of Protected Areas of Western Uganda' by Rafael Reyna, Mario Melletti and Jean Pierre d'Huart. This project is unique in the world for the ecological aspect of Giant Forest Hog (GFH), as we had the opportunity to monitor for two years at least 12 different groups of GFH in three protected areas of Western Uganda and we conducted the first occupancy model study for six months in three protected areas. We collected more than a half million images of African wildlife, specifically from the forest areas of Kibale National Park (Kibale NP), Queen Elizabeth National Park (Queen Elizabeth NP) and Toro Semliki Wildlife Reserve (Toro Semliki WR). This project produced the largest set of photos of at least 12 distinct groups of GFH in the world, with more than 8,000 photos. These photos showed population patterns, group sizes, group structures, daily habits, occupancy rate and other species interactions. In addition to the assessment aspect, several conservation aspects have been combined in the project: snare removals, assessments of consumption of wild pig meat, provision and promotion of domestic pigs, and an awareness festival.

T-028 (KSR 5)

Number of readings/citations per scientific paper published: 0

Result description: Due to the pandemic situation, there was no fieldwork on Mindoro in 2021. In collaboration with Central Mindanao University, the project lead managed to amplify PCR products from *Sus scrofa*, *Sus cebifrons*, *Sus oliveri*, *Sus philippensis mindanensis* and, possibly, *Sus barbatus* with seven mt-DNA markers (cytB, d-loop, COI). Currently, they are still waiting for the sequencing results. Preliminary results are expected by the end of 2022.

T-034 (KSR 5)

Number of research projects completed or supported by SSC members per taxonomic group and region: ongoing

Result description: Not too much progress has been made, but habitat surveys to monitor succession and habitat degradation have been conducted. A publication is planned in 2022.

T-037 (KSR 5)

Number of research projects completed or supported by SSC members per taxonomic group and region: 1

Result description: Since 2019, a database ('WildPigBase') has been established for the three main suid genera and is accessible online to WPSG members. Its 'ForestHogBase' section contains detailed information on 350+ ancient and recent observations of Giant Forest Hog all over its range. Historic and current distribution maps have been compiled and have already provided a contribution to a research team from the Sapienza University of Roma (led by Dr Michaela Pacifici) on selected mammals' habitat availability between retained and lost range. This information will also contribute to the next Red List status assessment planned for end of 2022. Another important source of information available online is WPSG's 'African Wild Pig Resource Platform' (https://www.wildsolutions.nl/african-wild-pigs/) that provides open access to PDF copies of key bibliographic references on Giant Forest Hog.

T-038 (KSR 5)

Number of research projects completed or supported by SSC members per taxonomic group and region: 6

Result description: Six research projects have been carried out: (1) The long-term research project on the biogeography of the Desert Warthog (*Phacochoerus aethiopicus*) and Common Warthog *(Phacochoerus africanus*) in the Horn of Africa (Eritrea, Ethiopia, Djibouti, Somalia, Kenya); (2) Surveys in northern Laikipia, central Kenya, as a new (fifth) region of sympatry between Desert Warthog and Common Warthog, that also resulted in new information on the distribution, abundance, population structure, ecology and behaviour of Desert Warthog in Laikipia; (3) On the basis of photographs of warthog faces from all corners of the Horn of Africa, an investigation is being carried out by Jean-Pierre d'Huart on the possible distinctiveness between Common and Desert Warthog by the proportions of specific facial features; (4) Nocturnal activity of Common Warthog in Rimoi Game Reserve, southwest Kenya, was investigated; (5) The current knowledge of the evolution and paleoecology of the Desert Warthog and Common Warthog was reviewed; (6) Erill et al. sequenced the first whole genomes of four Desert Warthogs and 35 Common Warthogs from throughout their range. Warthog genomes resolve a biogeographical conundrum and reveal interspecies introgression of disease resistance genes. All six projects have resulted in publications or soon-to-be-published manuscripts that are available on request.

T-039 (KSR 5)

Number of scientific publications about species research that acknowledge SSC affiliation: 3

Result description: The PhD thesis on this topic will be defended in early 2022. Three scientific articles have already been published on the results, with two more manuscripts pending. The publications can be requested.



Vulnerable Babirusa (*Babyrousa babyrussa*)
Photo: Chester Zoo

PLAN

Planning

T-002 (KSR 8)

Number of conservation plans/strategies developed: 1

Result description: The Regional Collection Plan was discussed in a workshop in November 2020, and the final document finalised a few months after. A summary can be found under: Zimmermann M., et al. (2022). 'One Plan Approach to save species — a new integrative Regional Collection Plan for hippos, pigs, peccaries, and tapirs'. *Suiform Soundings* 20(2):9–14. Available from the IUCN WPSG website at: https://www.iucn-wpsg.org/.

T-004 (KSR 8)

Number of conservation plans/strategies developed: 0

Result description: Little progress was made on finalising the report during 2020–2021.

T-012 (KSR 8)

Number of conservation plans/strategies developed: 1

Result description: We conducted an online workshop about ASF risk assessment together with Philippine stakeholders, entitled 'Disease Risk Analysis (DRA) to improve management of ASF among wild pig species in the Philippines', from 25–27 August 2021.

ACT

Conservation actions

T-005 (KSR 10)

Number of conservation translocations conducted: 1

Result description: Talarak Foundation Inc. have reintroduced a total of 21 Warty Pigs into the Bayawan Nature Reserve in Negros in 2020–2021. Since then, there were three mortalities (one male, two female) but more than 14 new wild born offspring. The wild behaviours, body conditions and regular breeding of almost every released female in the reserve has highlighted that the pigs are adapting well to their new environment. Note: Despite being a large area, it is still fenced and the threat of hunting if the fence would be opened is assumed to still persist. Hence, the reintroduction is not yet complete.

T-009 (KSR 10)

Active collaboration for breeding of Javan warty pigs: ongoing

Result description: A studbook was produced by the end of 2020, distributed in 2021, by Cikananga Wildlife Center. There have been no official breeding recommendations, but various population holders work effectively together to create satellite populations and to provide animals for release at Baluran National Park.

T-011 (KSR 10)

Number of areas under management for the species or group of species: 1

Result description: There is good progress in two areas on Java: a reintroduction of Javan Warty Pigs in Baluran National Park, led by Copenhagen Zoo (see target T-015), and the Javan Species Recovery Programme's Javan Warty Pig project in West Java. The latter is in the process of creating a community-based project that protects an important area for the Javan Warty Pigs, by working together with hunters, farmers and other members of the community. The project is in progress but not yet at a stage where it can be called 'in place'.

T-015 (KSR 10)

Number of species with increased or prevented decrease in population or range size, as a result of conservation actions: 0

Result description: In 2021, the biggest milestone was the first birth of Javan Warty Pig piglets in Baluran National Park for 20–30 years, in the reintroduction cages. Although only one of four piglets survived, this was a big success, and the experience will prepare for following births. Also, nine Javan Warty Pigs were transferred from Cikananga Wildlife Center in West Java to Baluran to join the breeding stock.

T-032 (KSR 10)

Number of conservation translocations conducted: 1



Visayan Warty Pig (*Sus cebifrons*)
Photo: Talarak Foundation



Pygmy Hog (*Porcula salvania*) mother and new born
Photo: Parag Deka

Result description: Twelve Pygmy Hogs (six males, six females) were released in the later part of June 2021 in the Rupahi grassland of Manas National Park. So far, 26 hogs have been released in this grassland. A cohort of 14 hogs will be released in June 2022.

T-033 (KSR 10)

Number of conservation translocations conducted: 1

Result description: Surveys searching for sign, such as nests and pellets of Pygmy Hog, were carried out in the grassland area of the three ranges – Bansbari, Bhuyanpara and Panbari – of Manas National Park (MNP) after the annual burning (February and March) in the last four years.

Synergy

T-031 (KSR 10)

Database development: Ongoing.

Result description: Locality records of all five African wild pigs are recorded in the WildPigBase, an online Google Sheet [WarthogBase (two species), ForestHogBase, BushPigBase and RedRiverHogBase]. Input consists of locality name, country, subspecies, coordinates, altitude, etc., and can be provided by those who attended the Kibale meeting (October 2019) or by filling out the online form 'African wild pig locality records' on https://www.wildsolutions.nl/wildpigs/ after an encounter with an African wild pig. WarthogBase is administered by Yvonne de Jong, ForestHogBase by Jean-Pierre d'Huart. The BushPigBase and RedRiverHogBase are still in need of an administrator. Until now both WarthogBase and ForestHogBase have led to updated distribution maps (see above). The next step is to find an administrator for both the BushPigBase and RedRiverHogBase, to actively request additional records for all five taxa, and to update the distribution maps once every two years.

Technical advice

T-006 (KSR 10)

Effective collaboration between different breeding centres; technical advice and funding offered to ensure effective breeding: 0

Result description: A formal Memorandum of Agreement between Talarak and Silliman University has been created to collaborate efforts in the captive maintenance and *in situ* conservation activities of the spotted deer and warty pigs. Aligned with this, LA Zoo and Bristol Zoo had keepers work alongside Talarak to provide training and assistance in the Silliman University Center for Tropical Conservation Studies (CENTROP) captive breeding centre, with which Talarak maintains communication and remote assistance. There has been no further interaction with Mari It or any other breeding centres in Panay or Negros.

T-024 (KSR 10)

Number of technical consultations provided to support conservation actions: 10

Result description: In 2021, the Education Working Group of the Global Species Management Plan (GSMP) ran two 2-day virtual training workshops with Indonesian Zoo educators in June and September on the topics 'Developing Conservation Education Plans' and 'Interpretive Planning', to over 50 participants from Indonesian zoos. Training was delivered by four international zoo staff, including Chester Zoo and Miami zoo, as well as two Indonesian zoo staff from Ragunan Zoo and Bali Safari Park. Four population managers provided technical mentoring and training of Indonesian studbook keepers and of the Indonesian Zoo and Aquarium Association (PKBSI)-GSMP Programme Officer, in collecting and analysing data (one manager for Babirusa). Studbook information compiled by the studbook keepers will inform the third set of breeding and transfer recommendations to be finalised in 2022. Technical training and consultations from two genetic experts from Copenhagen Zoo and Queen Mary's University has strongly supported the PKBSI-led sampling and genetic assessment of the founder animals of the Indonesian zoo populations of Anoa, Babirusa and Banteng (*Bos javanicus*). Assessment of founder animals is particularly important, as their genetics are underrepresented in the global zoo population. In 2021, 80% of the 85 samples were collected and DNA was extracted from 53 samples for sequencing.

T-035 (KSR 10)

Number of technical consultations provided to support conservation actions: 1

Result description: A student from Royal Veterinary College, US, was engaged to conduct a Disease Risk Analysis (DRA), using the Zoological Society of London (ZSL) methodology. DRA was conducted on four selected infectious agents which could cause disease and impact the Pygmy Hog in captivity managed by the Pygmy Hog Conservation Programme (PHCP). These agents are three viruses and a bacterium: Porcine Reproductive Respiratory Syndrome Virus (PRRSV), Classical Swine Fever Virus (CSFV), African Swine Fever Virus (ASFV), and *Salmonella enterica* serotype *choleraesuis*. A biosecurity assessment of the Pygmy Hog Conservation Programme's captive facilities was also completed along with the DRA by end of August 2021, and all suggestions were adopted for Disease Risk Mitigation. A publication on this is being planned.

NETWORK

Membership

T-016 (KSR 2)

Advisory committee and regional coordinators chosen and formalised: 1

Result description: The advisory committee and regional coordinators are complete and formalised (posted on our website) now. A new *ex situ* focal person has been chosen (Joerg Beckmann).

T-018 (KSR 2)

Number of SSC members recruited: 5

Result description: Through the necessary re-confirmation of all members, we decreased in membership from 65 to 46. We recruited five new members and are en route to a group with lots of active members.

Synergy

T-021 (KSR 2)

Effective regional WPSG network in Africa: 0

Result description: In 2019, a Kibale expert meeting was conducted successfully (details in: Reyna et al. (2020). 'African Wild Pigs: Conservation Status and Research Efforts'. *Suiform Soundings* 18(2):6–10). This was the first step towards an active network. As a result, an African member with good knowledge and a large network in Africa was recruited and a network was established. In order to be truly active, the network would need to establish some region-wide projects (like updating the regional sections of the 1993 Conservation Status and Action Plan). The network of WPSG in Africa was highly boosted and strengthened by a meeting that was organised by the group in October 2019. This meeting took place in the Makerere University Biological Field Station located inside Kibale National Park in south-western Uganda. The meeting was a two full day event that involved 30 people including participants from Uganda, Democratic Republic of the Congo, Mexico, USA, Netherlands, Belgium, Italy, Canada, Switzerland and England. These participants brought expertise from the following African countries: Uganda, Kenya, Tanzania, Ethiopia, Eritrea, Democratic Republic of Congo, Rwanda and Central African Republic, as well as partial knowledge of other African countries. The meeting was composed of nine talks, one mapping exercise, two general discussion sessions, one walk in the forest, one night walk, one artistic performance show by local people and two slideshows featuring African terrestrial wildlife. In addition to the meeting, we have contacted researchers working in West Africa, a region for which we have lacked representatives for a long time. The young researcher Florian Codjia from Benin is in our group and has brought interesting information about Red River Hog from the country and from the region. These actions are considered only first steps toward a real network of researchers working with African Wild Pigs; we believe that there are still very few people, researchers and conservationists interested in these species.

T-023 (KSR 2)

Number of WPSG members joining the symposium: 0

Result description: WPSG members were informed about the symposium and invited to join if possible.

T-036 (KSR 1)

Number of 'in kind' partnerships established and maintained: 1

Result description: A new MoU (International Conservation Management and Research MoU) between the partners (Durrell Wildlife Conservation Trust; WPSG; Forest Department Government of Assam; Ministry of Environment and Forest, Government of India and local partners Aaranyak and EcoSystems-India) has been drawn up for five years for continuation of the Pygmy Hog Conservation Programme. The new MoU was submitted to the Government of India in 2019. However, it was not followed up on for two years during the COVID-19 pandemic restrictions. Very recently, Chief Wildlife of India sent a reminder to the Ministry of Environment, Forest and Climate Change, Government of India. Hence, this target is still in progress.

COMMUNICATE

Communication

T-010 (KSR 12)

Number of Species e-bulletin, Save Our Species newsletter, SSC Groups' newsletter editions produced: 3

Result description: *Suiform Soundings* is up to date, with two issues published per year, hence on track. Issues can be found at: https://www.iucn-wpsg.org/.

T-019 (KSR 13)

Number of digital communication outputs developed in relation to specific taxonomic groups: 1

Result description: The website is completed and will be continuously updated (https://www.iucn-wpsg.org/).

T-029 (KSR 12)

Number of group update communications delivered: 2

Result description: Many emails and updates were exchanged between certain groups of members (e.g. Philippines members) but not generic updates.

Acknowledgements

Thank you to all WPSG members who actively contribute to the work of the WPSG, especially to the Regional Advisors, Red List Authority, *ex situ* and African Swine Fever experts, Suiform Soundings Chief Editor, and Social Media Officer. We would also like to thank the Species Conservation Foundation and Association of Zoological Gardens in 2021, as well as Cologne Zoo going forward into 2022, for providing the Chair with the time and space to work on WPSG activities. The collaboration with the IUCN SSC Asian Wild Cattle Specialist Group on terms of the Action Indonesia activities for the conservation of Babirusa has been superb.

Summary of achievements

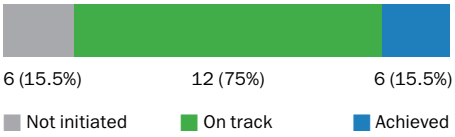
Total number of targets 2021–2025: 39

Geographic regions: 10 Global, 7 Africa, 21 Asia, 1 Europe

Actions during 2021:

Assess:	12 (KSR 5, 6)
Plan:	3 (KSR 8)
Act:	10 (KSR 10)
Network:	5 (KSR 1, 2)
Communicate:	3 (KSR 12, 13)

Overall achievement 2021–2025:



IUCN SSC Chytrid, Zygomycete, Downy Mildew and Myxomycete Specialist Group





CO-CHAIR
Tetyana Kryvomaz
Kyiv National Construction and Architecture University, Ecology Department, Kyiv, Ukraine

CO-CHAIR
Mayra Camino Vilaró
National Botanic Garden, University of Havana, Havana, Cuba

RED LIST AUTHORITY COORDINATOR
Mayra Camino Vilaró
National Botanic Garden, University of Havana, Havana, Cuba

NUMBER OF MEMBERS
26

SOCIAL MEDIA AND WEBSITE
Facebook: Slime Mold Identification & Appreciation
Website: www.cybertruffle.org.uk/moulds/index.htm

Mission statement

The mission of our IUCN Specialist Group is to promote the conservation of chytrids, downy mildews, myxomycetes and zygomycetes.

Projected impact 2021–2025

Not stated.

Targets 2021–2025

ASSESS

T-001 Study climate change impact on myxomycetes, chytrid, zygomycete and downy mildew.

PLAN

T-004 Analyse population trends, threats, and assess species using the IUCN Red List criteria and determine conservation actions for chytrids, zygomycetes, downy mildews and myxomycetes.

ACT

T-002 Move forward the conservation activity for chytrid, zygomycete, downy mildew and myxomycetes.

NETWORK

T-003 Organise a network of specialists and stakeholders for discussing conservation problems for 'lower fungi' and for exchange of successful protection measures.

COMMUNICATE

T-005 Promote the conservation of different groups of living organisms that were not considered to be in danger before but are in need of protection today.

Activities and results 2021

ASSESS

Research activities

T-001 (KSR 5)

Number of scientific publications about species research that acknowledge SSC affiliation: 5

Result description: (1) Kryvomaz, T.I. and Savchenko, A.M. (2021). 'The reducing of construction industry influence on climate change by implementation of green building principles'. *Environmental safety and nature management* 37(1):55–68. https://doi.org/10.32347/2411-4049.2021.1.55-68; (2) Kryvomaz, T.I. and Savchenko, A.M. (2021). 'The adaptation of city development sectors to climate change'. *Environmental safety and nature management* 38(2):64–78. https://doi.org/10.32347/2411-4049.2021.2.64-78; (3) Mahura, A., et al. 'Online approaches for climate-oriented education', delivered at the International Research-on-Practice Conference 'Climate Services: Science and Education', Odessa State Environmental University, Odessa, Ukraine, 22–24 September 2021; (4) Kryvomaz, T., et al. 'Climate-related education: on-line approach in COVID times', delivered at the 2nd International Conference on Climate Change in the



Diderma simplex
Photo: Allain Michaud



Lamproderma arcyrioides
Photo: Allain Michaud



Physarum bogoriense
Photo: Allain Michaud

Eastern Mediterranean and Middle East (13–14 October 2021), Education and Training Opportunities pre-conference workshop session, The Eastern Mediterranean and Middle East – Climate and Atmosphere Research Centre, Cyprus, 11–12 October 2021; (5) Kryvomaz, T., Savchenko, A. and Perebynos, A. 'The adaptation of construction industry to climate change by implementation of green building principles', delivered at the International Conference 'Ecology, Resources, Energy' ERE-2021, KNUCA and Politechnika Lubelska, Kyiv National University of Construction and Architecture, Kyiv, Ukraine, 24–26 November 2021.

PLAN

Planning

T-004 (KSR 8)

Number of conservation plans/strategies developed: 1

Result description: We have engaged in development of conservation action plans and initiatives which influence positive conservation outcomes for species.

ACT

Policy

T-002 (KSR 10)

Number of position statements addressing major drivers/emerging threats of species or population loss: 2

Result description: In 2021, we (1) identified two ecological groups of myxomycetes which are affected by climate change; (2) implemented conservation action plans and technical advice on conservation actions; (3) provided practical advice on conservation actions.

NETWORK

Capacity building

T-003 (KSR 2)

Number of people trained in assessment tools: 5

Result description: We achieved the following: (1) capacity building, internal organisation meetings and synergy; (2) held virtual meetings plus in-person meetings; (3) developed networks and added additional members; (4) continued building capacity through conferences, courses, field expeditions and workshops.

COMMUNICATE

Communication

T-005 (KSR 13)

Number of communication products using innovative tools: 3

Result description: In 2021, our activities included: (1) enhancing and strengthening communications for improved connections and collaborations; (2) produced the scientific journal *Slime Molds* (https://slimemolds.org); (3) prepared material for communication through the Fungal Conservation Committee (FunCC) website (https://www.iucn-fungi.org/) and social media (https://twitter.com/IUCNfungi); (4) loaded 220 observations and about 1,000 photos of myxomycetes to iNaturalist (**https://www.inaturalist.org**).

Acknowledgements

We are grateful Catia Canteiro and IUCN SSC FunCC for help in achieving our goals. Thank you very much!

Summary of achievements

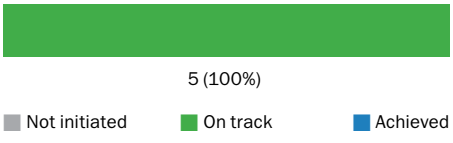
Total number of targets 2021–2025: 5

Geographic regions: 5 Global

Actions during 2021:

Assess: 1 (KSR 5)
Plan: 1 (KSR 8)
Act: 1 (KSR 10)
Network: 1 (KSR 2)
Communicate: 1 (KSR 13)

Overall achievement 2021–2025:



IUCN SSC Cup Fungi, Truffles and Allies Specialist Group





SOCIAL MEDIA AND WEBSITE
Website: www.cybertruffle.org.uk/ascos/index.htm

CO-CHAIR
David Minter
CAB International, Egham, Surrey, UK

CO-CHAIR
Aida Vasco
Universidad de Antioquia, Colombia

RED LIST AUTHORITY COORDINATOR
Melissa Mardones Hidalgo
Escuela de Biología, Universidad de Costa Rica, Costa Rica

NUMBER OF MEMBERS
14

Mission statement

To promote conservation of ascomycete fungi by raising awareness that they have vital roles as nutrient recyclers, mutualistic symbionts of animals and plants, and as checks and balances in freshwater, marine and terrestrial ecosystems, and that like other fungi, animals and plants, they are endangered by climate change, habitat destruction, persecution and pollution.

Projected impact 2021–2025

By the end of 2025, we plan for fifty new evaluations of ascomycete fungi to be added each year to the IUCN Red List, with a cadre of trained assessors, particularly including younger mycologists, led and guided by an increasingly experienced Red List Authority Coordinator. We intend to increase awareness of the vital role of fungi in an expanding range of conservation NGOs, in the public, and among national focal points for the Convention on Biological Diversity. Where national focal points are receptive, we will supply them with information about ascomycetes and the need to conserve them. We furthermore intend to increase awareness that fungal culture collections, which are currently strongly oriented towards commercial exploitation of fungi, also have a role to play in *ex situ* conservation. There will be a succession plan in place to ensure an ordered transfer of leadership of the Specialist Group when the present senior Co-Chair retires.

Targets 2021–2025

ASSESS

T-001 Train two collaborators in Red List Authority work.

T-002 Complete IUCN Red List assessments for five species of desert truffles.

T-003 Complete IUCN Red List assessments for three species of European truffles.

T-004 Produce a document listing recommended sources of information for assessing non-lichen-forming ascomycetes.

NETWORK

T-006 Engage with the Fungal and Plant Conservation Coordinator at the Global Center for Species Survival to enhance interaction between this Specialist Group and other areas of IUCN and relevant initiatives.

COMMUNICATE

T-005 Finalise the first version of the Cup Fungi, Truffles and Allies (CFTA) Specialist Group website.

Activities and results 2021

ASSESS

Red List

T-004 (KSR 7)

Coverage of existing data by Red List evaluators improved: ongoing

Result description: The document listing recommended sources of information for assessing non-lichen-forming ascomycetes is in progress.

NETWORK

Synergy

T-006 (KSR 3)

Number of online virtual meetings: 2

Result description: Zoom meetings have been attended.

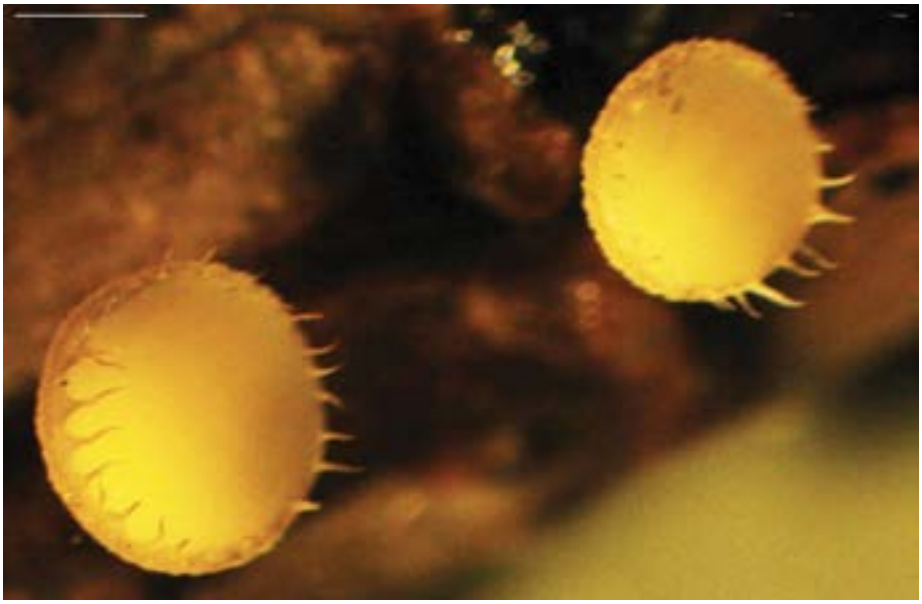
COMMUNICATE

Communication

T-005 (KSR 13)

Number of digital communication outputs developed in relation to specific taxonomic groups: ongoing

Result description: The first version of the CFTA Specialist Group website is in progress.



Cyathicula coronata (scale bar = 1 mm)
Photo: D.W. Minter

Summary of achievements

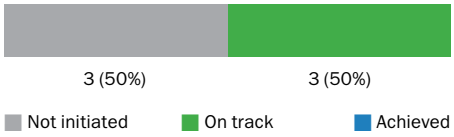
Total number of targets 2021–2025: 6

Geographic regions: 6 Global

Actions during 2021:

Assess: 1 (KSR 7)
Network: 1 (KSR 3)
Communicate: 1 (KSR 13)

Overall achievement 2021–2025:



IUCN SSC Lichen Specialist Group





CO-CHAIR
Jessica L. Allen
Biology Department, Eastern Washington University, Cheney, Washington, US

CO-CHAIR
Rebecca Yahr
Royal Botanic Garden, Edinburgh, Scotland, UK

RED LIST AUTHORITY COORDINATOR
Christoph Scheidegger
Swiss Federal Institute for Forest, Snow and Landscape Research, Switzerland

NUMBER OF MEMBERS
23

Mission statement

Promote studies assessing lichen diversity, population dynamics and conservation genetics in order to evaluate the conservation status of lichen species according to IUCN Criteria.

Projected impact 2021–2025

The Lichen Specialist Group is currently building networks of people in order to improve capacity across all aspects of the species conservation cycle.

Targets 2021–2025

ASSESS

T-001 Conduct global assessment of African, Asian and European leafy Parmelioid lichens in the family Parmeliaceae.

T-002 Assess key lichen species that are harvested for food, medicine and other uses globally.

T-005 Assess lichens endemic to the Galápagos Islands.

T-006 Conduct global assessments of key lichen species that characterise the arctic/alpine biota.

T-007 Conduct global assessments of lichens endemic to Colombia.

T-014 Conduct research on lichen conservation and threatened species.

T-016 Assess threatened and near threatened lichen species worldwide.

ACT

T-009 Hold an open house for lichen conservation: a free networking and Q&A session to promote good practice in on-the-ground action.

T-018 Support Lichen Specialist Group members in applying for SSC internal grants.

NETWORK

T-004 Recruit four new active members from underrepresented regions (Asia, South America, Africa).

T-011 Recruit and train five additional active members to the SSC from established lichen conservation networks.

T-012 Internally structure the Specialist Group to add regional or thematic leads.

T-017 Host Red Listing workshops.

COMMUNICATE

T-010 Build a lichen SSC website to highlight key projects and actions.

T-015 Communicate findings of research on rare and threatened lichens to local, national and international stakeholders.

Activities and results 2021

ASSESS

Red List

T-001 (KSR 6)

Number of global Red List reassessments completed: 12

Result description: We published 12 assessments of leafy parmelioid species from all over the world. These assessments were a group effort, involving numerous authors lending their expertise.

T-002 (KSR 6)

Number of new global Red List assessments completed: 1

Result description: One species used for food, medicine and other uses was assessed.

T-016 (KSR 6)

Number of new global Red List assessments completed: 14

Result description: Group members published assessments of diverse and threatened lichen species from multiple different countries.

Research activities

T-014 (KSR 5)

Number of research projects completed or supported by SSC members per taxonomic group and region: 2



Bryoria salazinica is listed CR, with very limited numbers of mature individuals, threatened by logging, changes to humidity regimes and increasing severity of storms impacting its coastal habitats
Photo: Hayley Paquette

Flavoparmelia baltimorensis is found across the Americas, and abundant and widespread in eastern North America. The Lichen Specialist Group aims to assess 100 leafy parmelioid lichens in this quadrennium
Photo: Jason Hollinger



Result description: Results of an investigation into the population history of *Lobaria pulmonaria* and implications for conservation planning were published in: Allen, J.L., McMullin, R.T., Wiersma, Y.F. and Scheidegger, C. (2021). 'Population genetics and biogeography of the lungwort lichen in North America support distinct Eastern and Western gene pools'. *American Journal of Botany* 108(12):2416–2424. **https://doi.org/10.1002/ajb2.1774**. Extensive fieldwork in the eastern and western lower slopes of the southern Sierra Nevada region motivated by red listing documentation has established that two lichens, *Rhizoplaca marginalis* and *R. glaucophana*, previously regarded as Rare and Vulnerable due to limited geographic extent and small population size, are more common than previously understood; they will be assessed as Least Concern in 2022 (J. Hollinger and N. Noell, pers comm).

ACT

Conservation actions

T-018 (KSR 10)

Number of threatened species benefiting from *in situ* conservation action: 1

Result description: María José Chesa is leading a team focused on *Lethariella intricata* conservation in Spain, which includes population size assessments and collaborations with local and national government organisations. She was awarded an SSC Internal Grant to support this conservation work.

NETWORK

Capacity building

T-017 (KSR 2)

Number of people trained in assessment tools: 80

Result description: We hosted a Red Listing workshop at the International Association of Lichenologists meeting this summer. More than 80 lichenologists from all over the globe attended.

Acknowledgements

The Lichen Specialist Group would like to thank the many individuals who have contributed time and energy to lichen conservation work, in particular those who have supported the work of the SSC. The group leaders would like to thank their respective institutions for their support: Eastern Washington University, Royal Botanic Garden Edinburgh, and the Swiss Federal Institute for Forest, Snow, and Landscape Research WSL. Generous support from the Mohamed Bin Zayed Species Conservation Fund was instrumental for the Red Listing Workshop and the subsequent publication of many assessments. We are grateful to the talented photographers who have generously shared access to their photo libraries in order to share the beauty of lichens to a wider audience: Leif and Anita Stridvall, Jason Hollinger.

Summary of achievements

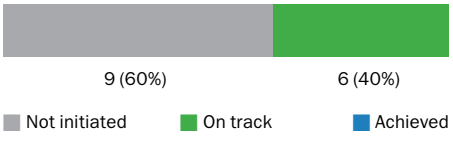
Total number of targets 2021–2025: 15

Geographic regions: 11 Global, 1 Africa, 4 America, 1 Asia, 1 Europe

Actions during 2021:

Assess: 4 (KSR 5, 6)
Act: 1 (KSR 10)
Network: 1 (KSR 2)

Overall achievement 2021–2025:



IUCN SSC Mushroom, Bracket and Puffball Specialist Group



CHAIR
Gregory M. Mueller
Chicago Botanic Garden, Glencoe, Illinois, 60022, US

DEPUTY CHAIR
Tatiana Svetasheva
Tula State L.N. Tolstoy Pedagogical University, Tula, Russia

RED LIST AUTHORITY COORDINATORS
Gregory M. Mueller
Chicago Botanic Garden, Glencoe, Illinois, 60022, US
Anders Dahlberg
Swedish Agricultural University, Uppsala, Sweden

NUMBER OF MEMBERS
50

Mission statement

The mission of the Mushroom, Bracket and Puffball Specialist Group is to advance fungal conservation by raising awareness of the importance of fungi and the need to conserve them, building capacity among the mycological community, and greatly increasing the number of fungi on national and the global Red Lists.

Projected impact 2021–2025

Fewer than 2% of described mushrooms, bracket and puffball fungi have had their conservation status assessed at the start of the quadrennium. Completing and publishing Red List assessments is a key activity of the Specialist Group to identify species in need of conservation action. Completing assessments is not the only activity of the Specialist Group, as efforts across the full Conservation Cycle will be undertaken to ensure that action to raise the profile of fungi, have fungi included in policies and action plans, and efforts to mitigate the decline of endangered species are being undertaken.



Cultivation of morels is an efficient way to conserve wild morels
Photo: Zhu L. Yang

Southeast Asian Fungal Red List Workshop
Participants July 2021
Photo: Gregory Mueller



Targets 2021–2025

ASSESS

T-001 Produce and submit 1,600 global assessments for the IUCN Red List.

T-002 Produce global, comprehensive assessments of genus *Cantharellus*.

Activities and results 2021

ASSESS

Red List

T-001 (KSR 6)

Number of new global Red List assessments completed: 300

Result description: Several virtual Red List workshops were held: Brazil, Colombia, Thailand, Europe. Additionally, funding was obtained to assess nearly 200 western US species. Over 100 of these species assessments were reviewed and processed in time to be published in 2021. The rest are being reviewed and updated as needed. It is anticipated that most will be published in 2022.

T-002 (KSR 6)

Number of new global Red List assessments completed: 0

Result description: Pre-assessments of *Cantharellus* species were created through several projects. A project lead by Specialist Group member Noah Siegel on a set of western US fungi treated all US and Canadian species. The putative species list has been compiled and data on contemporary European and African species obtained. Species from the remaining geographic regions will be targeted next. Application of the historical names, geographic distributions, and population trends are being reviewed. Reviewed assessments are being submitted for publication in 2022 Red List updates.

Acknowledgements

The Mohamed bin Zayed Species Conservation Fund provided essential support for several of the Red List workshops. Funding for assessing a set of western US macrofungi was provided by the IUCN Global Species Programme. Funding from these programmes is gratefully acknowledged.

Summary of achievements

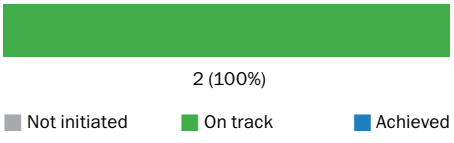
Total number of targets 2021–2025: 2

Geographic regions: 2 Global

Actions during 2021:

Assess: 2 (KSR 6)

Overall achievement 2021–2025:



IUCN SSC Bryophyte Specialist Group





CO-CHAIR
Irene Bisang
Swedish Museum of Natural History, Stockholm, Sweden

CO-CHAIR
Jacques van Rooy
South African National Biodiversity Institute, Pretoria, South Africa

RED LIST AUTHORITY COORDINATOR
Ariel Bergamini
Swiss Federal Research Institute WSL, Birmensdorf, Switzerland

NUMBER OF MEMBERS
31

SOCIAL MEDIA AND WEBSITES
Website: https://eccbbryo.nhmus.hu/BSG_initial



Abietinella abietina, a common and widespread moss of base-rich habitats rarely reproduces sexually. On the image, a sporophyte, the sexual generation in the bryophyte life cycle
Photo: Lars Hedenäs

Mission statement

The mission of the IUCN SSC Bryophyte Specialist Group (BSG) is to promote the exploration of bryological diversity across all geographic scales and its long-term conservation.

Projected impact 2021–2025

For this quadrennium, we established several targets that will increase the number of bryophyte species (re-)assessed at the global scale, following the latest IUCN Red List guidelines, and highlight the threatened bryophyte species in publications addressing different readerships. We also collaborate closely with expert bryologists around the globe to Red List bryophytes at regional scales and to provide related information to national authorities. This will raise the awareness of extinction risk that these inconspicuous organisms currently face and provide the necessary critical information for effective conservation actions. Based on the recently published comprehensive assessment of the threat status of 1,800 European bryophytes in the European Red List of Mosses, Liverworts and Hornworts (Hodgetts, N. et al. 2019. *A miniature world in decline: European Red List of Mosses, Liverworts and Hornworts*. Brussels, Belgium: IUCN. https://doi.org/10.2305/IUCN.CH.2019.ERL.2.en), we now work on identifying the species



Ulota bruchii, which somehow mimics the Corona-virus...
Photo: Ariel Bergamini

that warrant highest conservation priority in Europe. We also collaborate with the European Committee for Conservation of Bryophytes (ECCB) to define 'Important Bryophyte Areas' for Europe, based on Hodgetts et al. (2019). These will be key tools to inform policy decision makers to make relevant priorities for an efficient use of the resources available for biodiversity conservation in Europe.

Targets 2021–2025

ASSESS

T-001 Top 10 Initiative: Reinforce the work on global bryophyte Red Listing.

T-004 Produce Bryophyte Specialist Group publications.

T-008 Reassess species in the current Bryophyte Red List.

T-009 Investigate invasive bryophyte species.

T-010 Identify Important Bryophyte Areas (IBrA) in Europe.

T-012 Finalise national reassessment of all bryophyte species in Switzerland.

T-013 Finalise Red List of Pottiaceae of South Africa.

T-014 Analyse the endemic bryophyte element of southern Africa.

NETWORK

T-002 Train bryologists in IUCN Red List assessments.

T-006 Maintain relationship with the International Association of Bryologists (IAB).

T-007 Assure that SSC Plant Conservation Committee considers bryophytes.

COMMUNICATE

T-011 Develop a new Bryophyte Specialist Group website.

Activities and results 2021

ASSESS

Red List

T-001 (KSR 6)

Number of new global Red List assessments completed: 50

Result description: Work on the Top 10 initiative is ongoing, currently focusing on South America, but slow as regional bryologists cannot spend much time on the task due to economic reasons. Nevertheless, there was considerable progress in Red List assessments on a global scale due to the assessment of approx. 50 bryophyte species endemic to Columbia. The project was led by Nelson Salinas (a postdoc at the Instituto Humboldt of Colombia and Red List Authority for the IUCN SSC Colombian Plant Specialist Group) and Carolina Castellanos (IUCN SSC Colombian Plant Specialist Group Co-Chair). Data on the bryophytes were compiled by Angelica Aponte and Jaime Uribe, both from the Colombian National Herbarium. The actual assessments were done in a workshop attended by five additional bryophyte specialists: Jaime Aguirre (Colombian National Herbarium), Wilson Álvaro (Herbario Amazónico Colombiano), Laura Campos (Herbario Museo de La Salle Bogotá), Catalina Montoya (Herbario Universidad de Antioquia), and Bernardo Ramírez (Herbario Universidad del Cauca). The bryological and biological data in the assessments have been reviewed by the BSG members Denise Costa, Yelitza Leon and César Garçia, under the guidance of Ariel Bergamini and Irene Bisang. The assessments will now be revised by Nelson Salinas and Carolina Castellanos, and then assessments checked by a Spanish speaker before they will be ready for publication.

T-008 (KSR 6)

Number of global Red List reassessments completed: 0

Result description: Work on this target will be initiated in 2022.

T-012 (KSR 6)

Number of national Red List reassessments published: 0



Polytrichum piliferum, the Bristly haircup moss in its winter mood
Photo: Irene Bisang



Anthoceros neesii in an arable field; one of the few endemic bryophytes in Central Europe
Photo: Lars Hedenäs

Result description: The list, which contains a revised Red List status for all 1,100 bryophyte species occurring in Switzerland, has been submitted to the Federal Office for Environment. Publication of the list is expected in 2022.

T-013 (KSR 6)

Number of new national Red List assessments published: 5

Result description: The student Tsepo Hlasoa re-registered for the MTech. degree in Nature Conservation at Tshwane University of Technology. He completed Red List assessment forms for 96 species in 38 genera of Pottiaceae. The conservation status of the species was determined using IUCN Red List methodology. Corrections to a draft of the thesis are in progress.

Research activities

T-004 (KSR 5)

Number of scientific publications about species research that acknowledge SSC affiliation: 1

Result description: Callaghan et al. submitted a paper to the *Journal of Bryology*: 'Global geographic range and population size of the habitat specialist *Codonoblepharon forsteri* (Dicks.) Goffinet in a changing climate'.

T-009 (KSR 6)

Number of new invasive species accounts on the Global Invasive Species Database (GISD): 0

Result description: A project by a Master's student, led by the Swedish Museum of Natural History and Stockholm University, investigates the effect of the invasive moss *Campylopys introflexus* on a selected entomofauna. No knowledge of invasive bryophyte species in southern Africa, but the survey will be expanded to include other experts on the bryophyte flora of the region.

T-010 (KSR 6)

Number of new Key Biodiversity Areas confirmed in the World Database of KBAs (WDKBA): 0

Result description: This work is in collaboration with the European Committee for Conservation of Bryophytes (ECCB). Nick Hodgetts is commissioned and funded by the National Parks and Wildlife Service, Department of Culture, Heritage and the Gaeltacht, Ireland, until 2022.

T-014 (KSR 5)

Number of scientific publications about species research that acknowledge SSC affiliation: 3

Result description: The student Nonkululo Phephu re-registered for a PhD degree at the University of the Witwatersrand. Progress was slow, but she did present the paper 'Centres of bryophyte endemism in southern Africa' at the Bryophytes, lichens, and northern ecosystems in a changing world (BL2021) online conference, on 8 July 2021.

NETWORK

Capacity building

T-002 (KSR 2)

Number of people trained in assessment tools: 0

Result description: Our plan is that we can finance and hold a regional Red Listing workshop during this first year of the 2021–2025 period. We are currently discussing suitable localities and funding possibilities.

Synergy

T-006 (KSR 3)

Bryophytes, and their specific features, are included, acknowledged and communicated by SSC Plant Conservation Committee, as plants: In progress.

Result description: March 2021: we participated in the announcement of the IAB Conservation Award, and in establishing the Evaluation Committee. There were no applicants due to travel restrictions caused by the pandemic situation. The award was put forward to 2022.

T-007 (KSR 3)

Bryophytes, and their specific features, are included, acknowledged and communicated by SSC Plant Conservation Committee, as plants: In progress.

Result description: On request by Domitilla Raimondo, IUCN Red List Committee Plant Representative, we communicated the BSG Red List targets for the 2021–2025 period (29 September 2020). We are maintaining contacts with Cátia Canteiro, Plants and Fungi Conservation Coordinator, raising the need for increased visibility of bryophytes.

COMMUNICATE

Communication

T-011 (KSR 12)

An informative, attractive and up-to-date website with relevant information on bryophyte conservation: In progress.

Result description: Content from the previous (current) BSG website at https://eccb-bryo.nhmus.hu/BSG_initial is downloaded, permission at wsl.ch obtained, infrastructure secured, and presentation of current and new content is under development.

Acknowledgements

Jacques van Rooy, Ariel Bergamini and Irene Bisang acknowledge the continuous encouragement and support by their employers (South African National Biodiversity Institute; Swiss Federal Research Institute WSL; Swedish Museum of Natural History NRM). The revision of the national Red List of Swiss Bryophytes (Target 012; to be published in 2022) was financed by the Federal Office for the Environment (FOEN), Switzerland. The project 'Defining and identifying European important Bryophyte Areas' (IBrA; Target 010) is financed by National Parks and Wildlife Service, Ireland. A Master's project on the effect of the invasive moss *Campylopus introflexus* on selected entomofauna in southwest Sweden (Target 009) received financial support by Stockholm University, Master's student funding.

Summary of achievements

Total number of targets 2021–2025: 12

Geographic regions: 8 Global, 2 Africa, 2 Europe

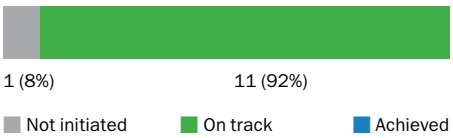
Actions during 2021:

Assess: 8 (KSR 5, 6)

Network: 3 (KSR 2, 3)

Communicate: 1 (KSR 12)

Overall achievement 2021–2025:



IUCN SSC Cactus and Succulent Plants Specialist Group





SOCIAL MEDIA AND WEBSITE
Facebook: @iucn.cssg
Instagram: @iucn_cssg
Twitter: @CssgSsc

CO-CHAIR
Bárbara Goettsch
Global Species Programme, IUCN, Cambridge, UK

CO-CHAIR
Lucas Majure
University of Florida, Florida, US

RED LIST AUTHORITY COORDINATOR
Raúl Puente
Desert Botanical Garden, Phoenix, Arizona, US

NUMBER OF MEMBERS
46

Mission statement

The mission of the Cactus and Succulent Plants Specialist Group (CSSG) is to contribute to the conservation of cactus and succulent plants through better understanding of their taxonomy, ecology and threats.

Projected impact 2021–2025

Our projected impact on species conservation status is 1,468 reassessments of cacti and 135 new assessments of other succulents including *Dudleya* and *Pachypodium*.

Targets 2021–2025

ASSESS

T-005 Assess the extinction risk of 67 species of *Agave* sensu lato (including 35 *Manfreda*, 17 *Polianthes*, 14 *Agave* and one *Prochynanthes*), seven *Hesperaloe* and 23 *Fourcraea*.

T-006 Assess the extinction risk of 46 species of *Dudleya*.

T-007 Re-assess the extinction risk of 1,477 species of Cactaceae.

T-009 Assess the extinction risk of 22 species of *Pachyphytum*.

T-010 Conduct a taxonomic review of Cactaceae.

T-015 Produce a scientific publication on the global assessment of *Agave*.

T-016 Produce a scientific publication on the global assessment of *Yucca*.

PLAN

T-011 Organise *Copiapoa* Workshop.

act

T-014 Ensure repatriation of *Copiapoa* seized in Italy.

network

T-001 Identify focal expert in illegal trade of succulents.

T-002 Review membership and expand the taxonomic and geographic representation for the group by inviting 15 new experts with emphasis on increasing the representation of members from the Americas, particularly aiming for women and people under 35.

T-004 Enhance collaboration with at least two plant Specialist Groups.

COMMUNICATE

T-017 Increase the CSSG presence in social media platforms to 5,000 per platform.

T-018 Publish the CSSG annual bilingual communication and newsletter.

Activities and results 2021

ASSESS

Red List

T-007 (KSR 7)

Reassess the extinction risk of 1,477 species of Cactaceae: 282

Result description: During this year, we have started working with the reassessment of 45 cactus species in the genus *Copiapoa* and 237 cactus species of the Sonoran Desert.

PLAN

Planning

T-011 (KSR 8)

Number of conservation plans/strategies developed: 1

Result description: The CSSG, in collaboration with Chester Zoo in the UK, the Conservation Planning Specialist Group, Concepción University in Chile, and the Chilean Ministry of the Environment, has resumed the conservation action plan for the genus *Copiapoa* in Chile that was postponed due to COVID-19. At these early stages of the workshop, the work is centred on defining its organisation and logistics via virtual meetings with the different stakeholders.

ACT

Conservation actions

T-014 (KSR 10)

Number of threatened species benefiting from *in situ* conservation action: 844

Result description: Thanks to the efforts of CSSG members Andrea Cattabriga, Pablo Guerrero and Co-Chair Bárbara Goettsch, 844 cacti from the genera *Copiapoa* and *Eriosyce* that were confiscated in Italy were





Copiapoa columna-alba at its habitat in Chile
Photos: Pablo Guerrero



Cacti from genera *Copiapoa* and *Eriosyce* confiscated in Italy and repatriated to Chile in 2021
Photo: Andrea Cattabriga

repatriated to Chile on Monday, 19 April 2021. The shipment of the plants was made possible thanks to the generous support and funding from SSC Internal Grants, B. Willow and Città Studi Botanical Garden of Milan.

NETWORK

Membership

T-001 (KSR 2)

Number of SSC members recruited: 2

Result description: We welcomed Dr. Carly Cowel, Senior Science Officer (CITES), Royal Botanical Gardens Kew, UK (Succulents, South Africa, Illegal Trade, UK CITES Scientific Authority – Flora), and Dr. Jared Margulies, Assistant Professor, Department of Geography at The University of Alabama, USA (Illegal Trade), to be part of the CSSG membership.

T-002 (KSR 2)

Number of SSC members recruited: 11

Result description: In 2021, we welcomed 11 new members. Currently, the CSSG has 54 members (with three pending registrations), and we will soon invite other experts from a list that we have been curating over the past year.

Synergy

T-004 (KSR 2)

Enhance collaboration with at least 2 plant Specialist Groups: 1

Result description: The CSSG is commencing the reassessment of the Cactaceae family. For this, the CSSG is teaming up with the Sonoran Desert Plant Specialist Group to start reassessing the approximately 246 cactus species distributed in the Southwest US and Northwest Mexico.

COMMUNICATE

Communication

T-017 (KSR 13)

Increase the CSSG presence in social media platforms to 5,000 per platform: 3,249

Result description: The CSSG has 3,249 followers across its three platforms (Facebook: 1,055; Instagram: 1,437; Twitter: 757).

T-018 (KSR 12)

Number of media articles mentioning IUCN Species theme: 2

Result description: In 2021, the CSSG successfully transitioned from two newsletters per year to one communication and one newsletter per year. This change in communication products format ensures that our members receive updates and valuable content on the CSSG work in the best possible way. The communications contain information on the progress towards meeting targets, important news, new members and opportunities (such as conferences and funding). The newsletters include opinion articles related to the conservation of succulents and cacti together with the progress made in achieving the CSSG targets, news and expansion in the membership. In addition, the CSSG sent an invitation to its members to serve in the Editorial Committee to help, along with our chief editor Jafet Nassar, support the communication products of the Specialist Group.

Acknowledgements

We are grateful for the kind support of our host institution, Desert Botanical Garden.

Summary of achievements

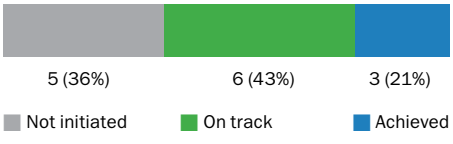
Total number of targets 2021–2025: 14

Geographic regions: 11 Global, 3 America

Actions during 2021:

Assess:	1 (KSR 7)
Plan:	1 (KSR 8)
Act:	1 (KSR 10)
Network:	3 (KSR 2)
Communicate:	2 (KSR 12, 13)

Overall achievement 2021–2025:



IUCN SSC Carnivorous Plant Specialist Group





SOCIAL MEDIA AND WEBSITE
Facebook: IUCN Carnivorous Plant Specialist Group; IUCN Carnivorous Plant Discussion Group
Website: **www.iucn-cpsg.org**

CHAIR
Robert Cantley
Borneo Exotics (Pvt) Ltd., Sri Lanka

DEPUTY CHAIR
Marcel Van den Broek
The Netherlands

RED LIST AUTHORITY COORDINATOR
Martin Cheek
Royal Botanic Gardens, Kew, UK

NUMBER OF MEMBERS
5

Mission statement

To help ensure that the conservation status of all carnivorous plants is adequately and accurately documented and assist in raising public awareness and encouraging initiation of appropriate conservation measures.

Projected impact 2021–2025

NOT STATED.

Targets 2021–2025

ASSESS

T-006 Assess 15 species of carnivorous plants.

ACT

T-005 Implement *ex situ* conservation of *Nepenthes clipeata* (Critically Endangered).

NETWORK

T-002 Recruit key staff for the Specialist Group.

T-003 Create group structure.

T-004 Recruit subgroup coordinators for the main family groups.

T-007 Create a system to report information on poaching to the proper authorities.

COMMUNICATE

T-008 Update our website, Facebook page and Facebook group for the distribution of relevant content.

Activities and results 2021

NETWORK

Capacity building

T-003 (KSR 2)

Decision on group structure achieved: Achieved

Result description: A decision on a logical structure was made.

Membership

T-002 (KSR 2)

Number of SSC members recruited: 4

Result description: The following members were recruited: Robert Cantley, Chair; Marcel van den Broek, Deputy Chair; Martin Cheek, Scientific Focal Point and Red List Coordinator; Marc Martinez, Conservation Officer.

Summary of achievements

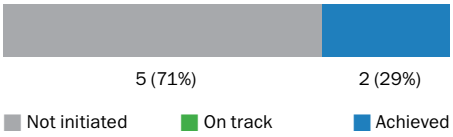
Total number of targets 2021–2025: 7

Geographic regions: 7 Global

Actions during 2021:

Network: 2 (KSR 2)

Overall achievement 2021–2025:





Nepenthes rajah Hook.f., assessed in 2000 as Endangered, is one of the priority species for updating in the IUCN Red List of Threatened Species
Photo: IUCN-SSC-CPSG archive

IUCN SSC China Plant Specialist Group



CHAIR
Hai-Ning QIN
Institute of Botany, Chinese Academy of Sciences, Beijing, China; College of Life Sciences, University of Chinese Academy of Sciences, Beijing, China

RED LIST AUTHORITY COORDINATOR
Li-Na ZHAO
Institute of Botany, Chinese Academy of Sciences, Beijing, China; College of Life Sciences, University of Chinese Academy of Sciences, Beijing, China

NUMBER OF MEMBERS
98

Mission statement

The mission of the China Plant Specialist Group (CPSG) is to contribute to increasing current knowledge on the identification and conservation of threatened species of China's flora.

Projected impact 2021–2025

Ca. 4,000 threatened species, 11% of China's flora, assessed first in 2013 and updated in 2020, will be fully documented by publications and be widely applied to guide flora conservation at national and provincial levels by organising a training course, workshops and other actions.

Targets 2021–2025

ASSESS

T-008 Publish a book on seed plants of China: checklist, uses and conservation status.

ACT

T-007 Conduct an Orchid Diversity Survey in China.

NETWORK

T-005 Reorganise China Plant Specialist Group (CPSG) membership in the quadrennium 2021–2025.

COMMUNICATE

T-006 Organise two symposiums on endangered plants online.

Activities and results 2021

ASSESS

Red List

T-008 (KSR 5)

Number of publications produced in SSC group: 1

Result description: Qin published the book *Seed plants of China: checklist, uses and conservation status*. This book contains more than 35,000 species of wild seed plants and important cultivated plants in China. The information on each species includes catalogues, resource utilisation and threatened status. Catalogue information includes name, life forms, altitude, domestic and international distribution, etc. The status of threatened species includes IUCN Red List category, whether it belongs to the List of National Key Protected Wild Plants in China and the appendix of CITES, etc. This book represents a major stepping stone on the pathway to national biodiversity survey, monitoring and assessment, resource conservation and sustainable utilisation, and is an indispensable resource for anyone working on botany, ecology research and teaching, agriculture, forestry and environment.

ACT

Conservation actions

T-007 (KSR 10)

Number of actions addressing major drivers/emerging threats of species or population loss: 8

Result description: I. Orchid conservation biology: (1) pollination biology, (2) population genetics and (3) mycorrhizal associations. II. National orchid conservation actions: (1) orchid diversity survey in China, (2) revision of the List of National Key Protected Wild Plants, (3) important ecological programmes, (4) construction of protected areas with national parks as the main body, (5) other actions.

T-007 (KSR 10)

Number of threatened species benefiting from *in situ* conservation action: 1,166

Result description: Our analyses based on botanical surveys and specimen information indicated that approximately 1,100 species (ca. 65%) are found in national



Conservation biology of *Paphiopedilum gratrixianum* Rolfe
Photo: Xiaohua Jin

nature reserves, and another approximately 66 species are found in provincial nature reserves.

T-007 (KSR 10)

Number of threatened species benefiting from *ex situ* conservation action: 802

Result description: Liu et al. (2020b) reported living collections for approximately 802 Chinese orchid species in at least one botanical garden or state-owned research institute. Based on checklists of Lin (2018) and Huang (2014), orchids from subtropical and tropical regions (southern and eastern China) are well protected in botanical gardens; however, there is a gap in the *ex situ* conservation of species in alpine and/or northern temperate regions. Among approximately 300 native orchid species in alpine regions and northern China, approximately 50 species are included in living collections in botanical gardens.

T-007 (KSR 10)

Number of quadrats for field investigation: 78,000

Result description: The orchid investigation team has completed the field investigation of about 78,000 quadrats in 16 provinces including Yunnan and Guizhou.

NETWORK

Capacity building

T-005 (KSR 2)

Number of working groups created: 3

Result description: Three working groups have been created: Red List Assessment and Publication Working Group, Red List Application Working Group, and Awareness and Capacities Working Group.

Membership

T-005 (KSR 2)

Number of SSC members recruited: 98

Result description: We reviewed the membership of the group and increased the number of youths and taxonomists by inviting 35 new experts; in addition, we invited 15 members of the CPSG during the last quadrennium to renew their membership. Most of the members are major in Plant Taxonomy and Systematics, Biodiversity, and Plant Resources. One fifth are women and 80% are senior titles. Among the members, 66 have doctoral degrees and 17 have master's degrees. Nearly 40% of the members come from scientific research institutes, 40% from universities, and the rest from botanical gardens, museums and reserves.

COMMUNICATE

Scientific meetings

T-006 (KSR 12)

Number of presentations delivered in scientific events: 5

Result description: We successfully organised the first online symposium on endangered plants on 13–14 November 2021. There were five presentations about the IUCN Red List delivered in this meeting: (1) Lesson at the works 'Red Data Book of Medicinal Plants in China' by Qi Y.D., The Institute of Medicinal Plant Development; (2) 2020 China Biodiversity Red Lists and their Future Update by Qin H.N., Institute of Botany, the Chinese Academy of Sciences; (3) Comparison of Red Lists of Plants in Northeast Asian countries by Wang H.F., Northeast Forestry University; (4) Assessment and Red List of Endangered Higher Plants in Guangdong Province by Wang R.J., South China Botanical Garden, Chinese Academy of Sciences; (5) Advances in KBA Research in China and Prospects for Investigation and Application related to Plant ES by Wu J.Y., Nanjing Institute of Environmental Sciences, Ministry of Ecology and Environment.

T-006 (KSR 12)

Number of participants: 500

Result description: More than 500 people from the Institute of Botany, Chinese Academy of Sciences, South China Botanical Garden, Kunming Botanical Research Institute, Nanjing Institute of Environmental Sciences, Chinese Academy of Agricultural Sciences, Shenzhen Fairy Lake Botanical Garden, Nanning Normal University, Nanjing Normal University, Sichuan University, Chongqing University, Beijing Normal University and other units registered to attend the meeting. A total of 32 academic reports were set up, including specially invited reports, endangered protection list and priority area identification, regional protection status, group protection status, endangered mechanism and four other topics. The presentations included the investigation and monitoring of rare and endangered protected plants and important distribution areas, the analysis of risk factors and mechanisms, the development of endangered protection list, *in situ* and *ex situ* protection actions and technologies, as well as protection effect evaluation and protection countermeasures, and involves many disciplines such as taxonomy, phylogeny, species genetics, community ecology, cultivation and so on. Dr Haining Qin pointed out in the summary that the presentations of this meeting represent the latest scientific research achievements of rare and endangered protected plants in China in recent years, and the participants benefited a lot and discussed greatly. On behalf of the organising committee, Dr Qin thanked the experts and scholars who gave presentations and said that this is the first National Symposium on endangered plants held by the Red List special committee of China planting Association and IUCN SSC China plant expert group since its establishment, and such academic exchange activities will continue in the future.

Acknowledgements

We appreciate the important support and help from the National Forestry and Grassland Administration of China (governments), Chinese Research Academy of Environmental Sciences(institution), Chinese Academy of Sciences (institution), the Convention on International Trade in Endangered Species of Wild Fauna and Flora, China Wild Plant Conservation Association (institution) and Hebei Science and Technology Press. We also thank for the support from CPSG SSC group and IUCN Secretariat.

Summary of achievements

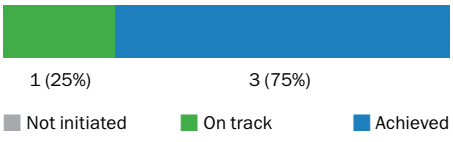
Total number of targets 2021–2025: 4

Geographic regions: 4 Asia

Actions during 2021:

Assess: 1 (KSR 5)
Act: 4 (KSR 10)
Network: 2 (KSR 2)
Communicate: 2 (KSR 12)

Overall achievement 2021–2025:



IUCN SSC Colombian Plant Specialist Group

SOCIAL MEDIA AND WEBSITE





CO-CHAIR
Cristina López-Gallego
University of Antioquia, Medellin, Colombia

CO-CHAIR
Carolina Castellanos-Castro
Alexander von Humboldt Institute, Bogota, Colombia

RED LIST AUTHORITY COORDINATOR
Nelson Salinas
New York Botanical Garden, US

NUMBER OF MEMBERS
26

Mission statement

To generate baseline information to support decision making for plant conservation by different stakeholders in Colombia.

Projected impact 2021–2025

Our Specialist Group will provide important input to the National Strategy for Plant Conservation of Colombia, in terms of Red List assessments and inclusion of threatened species in legislation, use of plant information to identify Key Biodiversity Areas (KBAs) and contribute to other spatial conservation planning, and concrete actions in our conservation plans for strategic groups (timber, palms, cycads, orchids, magnolias, cacti and others).

Targets 2021–2025

ASSESS

T-001 Publish at least 4,000 Red List assessments to contribute to the 'Colombian Plant Red List', mostly to finish assessing all country endemics and for strategic taxonomic groups.

PLAN

T-005 Design at least four conservation action plans for strategic groups to advance plant conservation in the country.

T-006 Contribute to national policy instruments focused on species conservation.

ACT

T-002 Update the four existing conservation action plans for strategic groups to advance plant conservation in the country.

T-003 Incorporate at least 50% of identified threatened species in projects to identify and validate priority areas for plant conservation (e.g. KBAs, Tropical Important Plant Areas (TIPAs) and others).

T-007 Generate knowledge to support the sustainable use of plant species.

COMMUNICATE

T-004 Design at least four concrete products that relevant stakeholders could use for plant conservation decision making in the country (e.g. technical reports, communications with recommendations, etc.).

Activities and results 2021

ASSESS

Red List

T-001 (KSR 6)

Number of new global Red List assessments completed: 700

Result description: We submitted 700 assessments to the Red List Unit on species endemic to Colombia from groups of plants with potential use, as a contribution to the IUCN Plants for People programme.

We signed an agreement with Botanic Gardens Conservation International (BGCI) to keep contributing to the Global Tree Assessment by assessing 860 trees present in Colombia and neighbouring countries.

PLAN

Policy

T-006 (KSR 9)

Number of policies where SSC members provided technical input: 1

Result description: The Colombian Plant Specialist Group (CPSG) is actively collaborating with a large initiative to promote research and conservation action for epiphytic plants of Colombia. We have helped organise public events and discussions that will produce papers and technical documents to inform national policies and legislation on existing conservation for these plants in the country.

COMMUNICATE

Communication

T-004 (KSR 13)

Number of digital communication outputs developed in relation to specific taxonomic groups: 1

Result description: Members of the CPSG, in collaboration with researchers at Royal Botanic Gardens, Kew in the UK, will produce a book chapter focused on identifying



Bromeliads and Orchids in Colombia
Photo: Cristina López-Gallego



Carnivorous and wetland plants in Colombia
Photo: Cristina López-Gallego

priorities for species conservation of useful Colombian plants: Kor, L., Lopez-Gallego, C., Castellanos-Castro, C. and Diazgranados, M. In press. Assessing extinction risk coverage and identifying geographical hotspots to guide conservation action for Colombia's useful plants. In: Negrão, R., Monro, A., Castellanos-Castro, C. and Diazgranados, M. (eds.) Useful Plants of Colombia. London, UK: Royal Botanic Gardens, Kew.

Acknowledgements

The Colombian Plant Specialist Group thanks all the support that Instituto Alexander von Humboldt and University of Antioquia provided as host institutions for all our activities. We collaborated with Royal Botanic Gardens, Kew and the IUCN Plants for People programme to produce Red List assessments and use them to produce useful inputs for conservation planning.

Summary of achievements

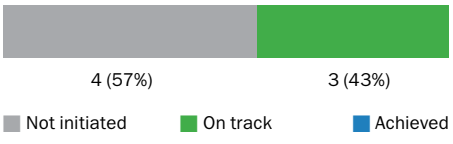
Total number of targets 2021–2025: 7

Geographic regions: 7 America

Actions during 2021:

Assess: 1 (KSR 6)
Communicate: 1 (KSR 13)

Overall achievement 2021–2025:



IUCN SSC Conifer Specialist Group



SOCIAL MEDIA AND WEBSITE

Website: **https://threatenedconifers.rbge.org.uk**

CHAIR
Yong Yang
Nanjing Forestry University, China

RED LIST AUTHORITY COORDINATOR
Philip Thomas
Royal Botanic Garden Edinburgh, UK

NUMBER OF MEMBERS
32

Mission statement

The Conifer Specialist Group (CSG) helps promote the long-term survival of the world's conifers through rigorous conservation assessments, which help to guide conservation planning and conservation action.

Projected impact 2021–2025

The Conifer Specialist Group is in the process of re-assessing all the world's conifers for the third time and aims to have all assessments completed by June 2023. Following on from that, the group will be focusing on producing an updated Conifer Action Plan.

Targets 2021–2025

ASSESS

T-003 Review, update and revise existing taxonomic framework; add and assess new taxa.

T-004 Submit 300 revised assessments with appropriate maps.

T-005 Submit 500 revised existing assessments.

PLAN

T-006 Workshop to discuss planning/outline for new Conifer Action Plan.

T-007 Draft new Conifer Action Plan.

T-008 Publish new Conifer Action Plan.

ACT

T-009 Support funding applications from national and regional organisations for conifer conservation activities.

NETWORK

T-001 Add 20 new members who have expertise not previously available within the group, e.g. pathology, genetics, forest ecology, climate change.

T-002 Re-invite previous members who want to be active during the next quadrennium.

Activities and results 2021

ASSESS

Red List

T-003 (KSR 6)

Number of new global Red List assessments completed: 0

Result description: This is an ongoing process that depends on new information becoming available, reviewed and discussed within the Specialist Group and other relevant Red List Authorities before changes are made to IUCN taxonomy. Changes that have been made are at genus level. The target will be reset for 2022 and will include up to 20 new taxa/revised species concepts that will require new/revised assessments.

T-004 (KSR 6)

Number of global Red List reassessments completed: 100

Result description: There have been delays caused by COVID-19 disruptions and problems with re-establishing membership of the group. The remainder of the target is to be achieved by 31 January 2022. One species was reviewed for potential Green Status assessment.

T-005 (KSR 6)

Number of global Red List reassessments completed: 150

Result description: The target should be completed by November 2022.

PLAN

Planning

T-006 (KSR 9)

Agreement on major thematic areas to be covered: ongoing

Result description: A potential publisher has been identified.

ACT

Conservation actions

T-009 (KSR 10)

Number of threatened species benefiting from *in situ* conservation action: 2

Result description: Two supporting letters were provided from the CSG Chair for work on Wollemi Pine (*Wollemia nobilis*) and *Taxus* in Nepal.



Fruit of Least Concern Buddhist Pine, *Podocarpus macrophyllus*
Photo: Yong Yang

NETWORK

Membership

T-001 (KSR 2)

Number of SSC members recruited: 2

Result description: Problems with the renewal process and with inviting new members mean that this target will not be achieved by 31 December 2021. The CSG Chair and RLA Coordinator will renew efforts.

T-002 (KSR 2)

Number of SSC members recruited: 2

Result description: Problems with the renewal process mean that this target will not be achieved by 31 December 2021. The CSG Chair and RLA Coordinator will renew efforts to re-enlist former members and contact new members.

Acknowledgements

The Co-Chairs would like to acknowledge the support provided by Nanjing Forestry University. The Red List Coordinator acknowledges support from the Royal Botanic Garden Edinburgh.

Summary of achievements

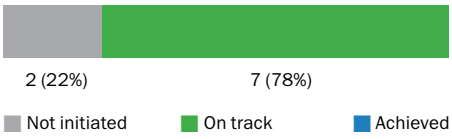
Total number of targets 2021–2025: 9

Geographic regions: 9 Global

Actions during 2021:

Assess: 3 (KSR 6)
Plan: 1 (KSR 9)
Act: 1 (KSR 10)
Network: 2 (KSR 2)

Overall achievement 2021–2025:



IUCN SSC Crop Wild Relative Specialist Group





CO-CHAIR
Nigel Maxted
School of Biosciences, University of Birmingham, Edgbaston, Birmingham B15 2TT, UK

CO-CHAIR
Mariana Yazbek
Manager at International Center for Agricultural Research in the Dry Areas (ICARDA), Lebanon

RED LIST AUTHORITY COORDINATOR
Serene Hargreaves
Royal Botanic Gardens, Kew, UK

NUMBER OF MEMBERS
57

Mission statement

The vision of the Crop Wild Relative Specialist Group (CWRSG) is the effective conservation and use of crop wild relatives (CWR) and their increased availability for crop improvement, for the benefit of the environment and human society worldwide.

Projected impact 2021–2025

By the end of 2025, we hope to have established two regional networks of *in situ* conservation sites for active conservation of CWR to complement current *ex situ* conservation activities. Our vision is a developing world in which the full potential of CWR diversity is used to maximise the development of healthy, resilient food systems, where rural communities/family farmers are recognised for their sustaining of vital conservation action, and where nutritional security is not limited by climate change or breeders' access to CWR diversity.

Targets 2021–2025

ASSESS

T-006 Implement research projects on CWR conservation and sustainable use.

T-007 Complete threat assessment of around 1,400 global priority CWR taxa.

PLAN

T-008 Plan a European regional network of CWR *in situ* conservation.

T-009 Plan regional networks of CWR *in situ* conservation outside Europe.

T-010 Plan national networks of CWR *in situ* conservation.

T-011 Improve CWR conservation policy context at global and regional levels.

T-012 Improve CWR conservation policy context at national level.

ACT

T-013 Develop tools and guidelines to help CWR conservation planning or to guide the implementation of *in situ* and *ex situ* conservation actions targeting CWR.

T-014 Establish a global network of CWR *in situ* conservation.

T-015 Establish a European regional network of CWR *in situ* conservation.

T-016 Establish regional networks of CWR *in situ* conservation outside Europe.

T-017 Establish national networks of CWR *in situ* conservation.

T-018 Advance *ex situ* conservation of representative genetic diversity of the global priority CWR diversity in genebanks.

T-019 Advance *ex situ* conservation of national priority CWR.

NETWORK

T-001 Establish effective links among various stakeholders for the implementation of CWR conservation actions.

T-002 Review membership and expand the taxonomic and geographic representation for the group by inviting new experts from Africa, Central/South America, Asia, Middle East and Oceania.

T-003 Build capacity in CWR conservation planning.

T-004 Build capacity in Red Listing.

COMMUNICATE

T-020 Publish papers on CWR conservation and use.

T-021 Maintain and update CWR related websites.

T-022 Organise webinars on CWR conservation.

Activities and results 2021

PLAN

Planning

T-008 (KSR 8)

Number of conservation plans/strategies developed: 1

Result description: Within the context of the Farmer's Pride project (http://www.farmerspride.eu/), a European analysis of priority CWR distribution and identification of



Allium altaicum Pall., in Tien Shan (China) in 2009; it is a Tertiary wild relative of common onion and primary wild relative of brunching onion, it is also a taxon group 3 relative of Chinese onion and of chives
Photo: Vojtech Holubec

candidate locations for the establishment of genetic reserves for the active *in situ* conservation of populations was finalised in 2021 (Rubio Teso, M.L., Álvarez Muñiz, C., Gaisberger, H., Kell, S.P., Lara-Romero, C., Magos Brehm, J., Maxted, N., Philips, J. and Iriondo, J.M. (2021). *European crop wild relative diversity: towards the development of a complementary conservation strategy*. Birmingham, UK: Farmer's Pride, University of Birmingham. Available at: D4.3_CWR_network_design.pdf). In Southern Africa, a paper with the results of the *in situ* and *ex situ* conservation planning of regional priority CWR was submitted to a peer-reviewed journal.

T-009 (KSR 8)

Number of conservation plans/strategies developed: 2

Result description: Conservation planning of CWR in East and West Africa is currently being carried out.

T-010 (KSR 8)

Number of conservation plans/strategies developed: 0

Result description: Conservation planning of priority CWR in Canada and Iran was initiated in 2021.

Policy

T-011 (KSR 9)

Number of policies where SSC members provided technical input: 1

Result description: Within the SADC-CWR Network project: (i) a harmonisation paper on Access and Benefit Sharing (ABS) policies of *in situ* genetic resources within CWR networks was prepared involving a task force that included two key international stakeholders [Nagoya Protocol unit of the United Nations Convention on Biological Diversity (CBD) and International Treaty Plant Genetic Resource for Food and Agriculture (ITPGRFA)]; (ii) a policy brief regarding the need to establish a regional network for conservation, sustainable use and access and benefit sharing of CWR in the Southern African Development Community (SADC) was also released in 2021 (http://www.cropwildrelatives.org/fileadmin/bioversity/publications/PB_49___Crop_Wild_Relatives_in_the_South_African_Development_Community.pdf). A policy roundtable on the establishment of a European network for *in situ* conservation and sustainable use of plant genetic resources was held as part of Session 4 of the Farmer's Pride final dissemination conference (https://farmerspridеconference.org/) that took place between 28 June and 1 July 2021. The proposal to promote and embed the European network for *in situ* conservation of plant genetic resources within a European policy framework for genetic resources conservation and sustainable use was discussed. Additionally, the roundtable aimed to provide the conference participants with a clear view of prospects for the network in terms of its long-term recognition in policy and legislation, from local to global levels (Kell, S., Dulloo, E. and Maxted, N. (2021). *Policy roundtable on the establishment of a European network for in situ conservation and sustainable use of plant genetic resources*. Birmingham, UK: Farmer's Pride, University of Birmingham. Available at: D3.6_Policy_dialogue_workshop_to_enhance_in_situ_maintenance.pdf).

T-012 (KSR 9)

Number of policies where SSC members provided technical input: 3

Result description: Within the SADC-CWR Network project, both Malawi and Tanzania prepared their National Strategic Action Plans (NSAP) for the conservation and use of CWR, while Zambia revised their existing NSAP.

ACT

Conservation actions

T-013 (KSR 10)

Number of technical documents provided to support conservation actions: 3

Result description: The tool 'Crop wild relatives in European protected areas: A tool for protected area managers' (https://www.ecpgr.cgiar.org/crop-wild-relatives-in-natura-2000) was developed to help protected area managers identify which CWR are likely to occur in the protected areas they manage. The 'Web Tool for CWR Population Management' (https://cwrpopulation-toolkit.cropwildrelatives.org/) was prepared to provide practical guidelines for the management of CWR populations *in situ* and the sites in which they are being conserved. The final version of the *Descriptors for Crop Wild Relatives conserved in situ* (*CWRI* v.1) (https://www.fao.org/documents/card/en/c/cb3256en/) was prepared and published in 2021 by the International Treaty of the Food and Agriculture Organization of the United Nations. These descriptors form an international standard to ensure consistency in the way data about CWR are documented and exchanged, namely via the Global Information System. They were the result of the work of the Treaty's staff, worldwide experts, technical staff and national focal points of the Treaty which were involved in various consultations and discussions; they were tested in several countries across the world, namely in Africa, Asia, Europe and the Group of Latin America and the Caribbean, and refined based on the feedback obtained from the various national experts contacted.

T-014 (KSR 10)

Number of areas under management for the species or group of species: 0

Result description: The global network of genetic reserves for globally important CWR has been designed and published in 2019 but not yet implemented.

T-015 (KSR 10)

Number of areas under management for the species or group of species: 0

Result description: The foundations for the establishment of the European network for *In situ* Conservation and Sustainable Use of Plant Genetic Resources have been laid and we are now building a coalition of support for its establishment.

T-016 (KSR 10)

Number of areas under management for the species or group of species: 9

Result description: The SADC Network for *In situ* Conservation of CWR was approved by the SADC Ministers responsible for agriculture, food security, fisheries and aquaculture and is expected to be implemented very soon. Nine sites in Malawi, Tanzania and Zambia were nominated as genetic reserves to conserve *in situ* national priority CWR; these sites will integrate the SADC Network for *In situ* Conservation of CWR.

T-017 (KSR 10)

Number of areas under management for the species or group of species: 3

Result description: Malawi, Tanzania and Zambia have worked closely with national parks, wildlife or forestry departments to revise the management plans of the protected areas identified in their conservation planning towards the establishment of the national network of CWR *in situ* conservation (SADC-CWR Network project). Three sites (Nyika National Park, Zomba, and Mulanje Mountain Forest Reserve) were nominated in Malawi as genetic reserves for active *in situ* conservation of CWR; three sites (Uzungwa Scarp Forest Reserve, Kyejo Forest Reserve, and Minziro Forest Reserve) were nominated in Tanzania; while Zambia nominated three national parks (Kafue, Kasanka and South Luangwa) as the key sites of national importance for *in situ* conservation of CWR.

T-019 (KSR 10)

Number of threatened species benefiting from *ex situ* conservation action: 2

Result description: Within the context of the SADC-CWR Network project, Malawi, Tanzania and Zambia collected 63, 70 and 21 *ex situ* accessions, respectively, of national priority wild relatives of rice and sorghum, amongst others.

NETWORK

Capacity building

T-003 (KSR 2)

Number of people trained in conservation planning: 31

Result description: With the Training Programme on CWR Conservation Planning prepared within the context of the Darwin Initiative-funded project 'Bridging Agriculture and Environment: Southern African Crop Wild Relative Regional Network' (SADC CWR Network for short, http://www.cropwildrelatives.org/sadc-cwr-net/), a total of 31 people were trained: 22 from amongst 12 Southern African countries, seven from outside Southern Africa (Nigeria, Peru, Saudi Arabia, Sudan and UK), and two from the SADC Plant Genetic Resources Centre.

T-004 (KSR 2)

Number of people trained in assessment tools: 1

Result description: One person was trained in using the Categories and Criteria for Red List assessment.

Membership

T-002 (KSR 2)

Number of SSC members recruited: 1

Result description: One expert from Africa was invited to join the CWRSG, and others from the target regions will be invited very soon.

Synergy

T-001 (KSR 1)

Number of in kind partnerships established and maintained: 1

Result description: The SADC Network for *In situ* Conservation of CWR was approved by the SADC Ministers responsible for agriculture, food security, fisheries and aquaculture and is expected to be implemented very soon. The foundations for the establishment of the European network for *In situ* Conservation and Sustainable Use of Plant Genetic Resources have been laid and we are now building a coalition of support for its establishment.

COMMUNICATE

Communication

T-020 (KSR 13)

Number of published papers: 18

Result description: (1) *Crop Wild Relative Newsletter* – Issue 13 (http://www.cropwildrelatives.org/fileadmin/templates/cropwildrelatives.org/upload/images/pdf/CWR_Newsletter_issue_13.pdf); (2) Álvarez-Muñiz, C., Rubio Teso, M.L., Magos Brehm, J., et al. (2021). 'Crop wild relative network showcases'. *Crop Wild Relative* 13:16–18; (3) Drucker, A.G., Tyack, N., Bartha, B., et al. (2021). 'Getting incentives right? Public willingness to pay for support mechanisms for effective conservation and use of landraces in Europe'. *Crop Wild Relative* 13:27–28; (4) Dulloo, M.E., Shava, J.G. and Bissessur, P. (2021). 'The establishment of the first southern African regional network for crop wild relative conservation and sustainable use: lessons learnt'. *Crop Wild Relative* 13:9-10; (5) Goettsch, B., Urquiza-Haas, T., Koleff, P., et al. (2021). 'Extinction risk of Mesoamerican crop wild relatives'. *Plants, People, Planet* 3(6):775–795. https://doi.org/10.1002/ppp3.10225; (6) Magos Brehm, J., Gaisberger, H., Kell, S., et al. (2021). 'Summary of the *in situ* and *ex situ* conservation priorities for the SADC region'. *Crop Wild Relative* 13:6–8; (7) Maxted, N. (2021). 'The conservation and use of CWR: the *in situ* perspective'. *Crop Wild Relative* 13:32–35; (8) Maxted, N. and Kell, S. (2021). 'Establish a European *in situ* conservation network of sites and stakeholders'. *Crop Wild Relative* 13:36–38; (9) Maxted,



Aegilops tauschii Coss., a secondary wild relative of bread and durum wheat, as well as a number of other cultivated wheats
Photo: Vojtech Holubec

N. and Kell, S. (2021). '*In situ* plant genetic resources conservation information management tools'. *Crop Wild Relative* 13:25–26; (10) Maxted, N. and Vincent, H. (2021). 'Review of congruence between global crop wild relative hotspots and centres of crop origin/diversity'. *Genetic Resources and Crop Evolution* 68:1283–1297. https://doi.org/10.1007/s10722-021-01114-7; (11) Molina, A., Álvarez-Muñiz, C., Iriondo, J.M., et al. (2021). 'Crop wild relative population management guidelines'. *Crop Wild Relative* 13:23–24; (12) Mponya, N.K., Chanyenga, T., Magos Brehm, J. and Maxted, N. (2021). '*In situ* and *ex situ* conservation gap analyses of crop wild relatives from Malawi'. *Genetic Resources and Crop Evolution* 68:759–771. https://doi.org/10.1007/s10722-020-01021-3; (13) Müller, J.V., Cockel, C.P., Gianella, M. and Guzzon, F. (2021). 'Treasuring crop wild relative diversity: analysis of success from the seed collecting phase of the 'Adapting Agriculture to Climate Change' project'. *Genetic Resources and Crop Evolution* 68:2749–2756. https://doi.org/10.1007/s10722-021-01229-x; (14) Nduche, M., Magos Brehm, J., Abberton, M., et al. (2021). 'West African Crop Wild Relative Checklist, Prioritization and Inventory'. *Genetic Resources* 2(4):55–65. https://doi.org/10.46265/genresj.EIFL1323; (15) Palmé, A., Lund, B., Kiviharju, E., et al. (2021). 'Recent progress on crop wild relative conservation in the Nordic region'. *Crop Wild Relative* 13:11–15; (16) Rahman, W., Magos Brehm, J., Maxted, N., et al. (2021). 'Gap analyses of priority wild relatives of food crop in current *ex situ* and *in situ* conservation in Indonesia'. *Biodiversity and Conservation* 30:2827–2855. https://doi.org/10.1007/s10531-021-02225-4; (17) Rubio Teso, M.L., Álvarez-Muñiz, C., Gaisberger, H., et al. (2021). 'Crop wild relative conservation in the Natura 2000 network'. *Crop Wild Relative* 13:19–22; (18) Zair, W., Maxted, N., Magos Brehm, J. and Amri, A. (2021). '*Ex situ* and *in situ* conservation gap analysis of crop wild relative diversity in the Fertile Crescent of the Middle East'. *Genetic Resources and Crop Evolution* 68:693–709. https://doi.org/10.1007/s10722-020-01017-z.

T-021 (KSR 12)

Number of CWR-related websites maintained and updated: 5

Result description: Websites developed within the context of the Farmer's Pride project (http://www.farmerspride.eu/), the SADC-CWR Network project (http://www.cropwildrelatives.org/sadc-cwr-net/), the GenRes Bridge project (http://www.genresbridge.eu/), the 'Adapting Agriculture to Climate Change: Collecting, Protecting and Preparing Crop Wild Relatives' project (https://www.cwrdiversity.org/), as well as the CWR Global Portal (http://www.cropwildrelatives.org/), were maintained and updated.

Scientific meetings

T-022 (KSR 12)

Number of scientific events organised: 4

Result description: (1) 'Crop wild relative conservation in protected areas in the SADC region' (http://www.cropwildrelatives.org/resources/webinars/): a two-day webinar held 8–9 February 2021, organised by the Alliance of Biodiversity and International Center for Tropical Agriculture (CIAT), Biodiversity and Protected Areas Management Programme (BIOPAMA) and the University of Birmingham, addressed the importance of CWR for food security and climate change resilience and how can they be conserved; (2) International Conference 'Ensuring Diversity for Food and Agriculture: Plant Genetic resources – in nature and on-farm' (http://www.farmerspride.eu/): this international conference was held 28 June–1 July 2021, organised within the context of the Farmer's Pride project, in association with the Genetic Resources section of the European Association for Research on Plant Breeding (EUCARPIA) and the European Cooperative Programme for Plant Genetic Resources (ECPGR); it addressed several aspects related to global *in situ* (including on-farm) conservation and sustainable use of plant genetic resources, and had a session dedicated to the establishment of a European network for *in situ* conservation and sustainable use of plant genetic resources, including a roundtable with key policymakers and stakeholder discussions; (3) Preview of the 'Genetic Resources Strategy for Europe' (https://www.youtube.com/watch?v=0A1M2G0d-nqA): held 12 November 2021, organised within the context of the GenRes Bridge project (http://www.genresbridge.eu/), this webinar gave the opportunity to present the Genetic Resources Strategy for Europe (where CWR are also referred to); (4) Second International Agrobiodiversity Congress Side Event 'Conserving Crop Wild Relatives (CWR) to support sustainable agriculture in Southern Africa' (https://www.eatgrowsave.org/): this two-hour webinar was held on 18 November 2021, organised within the SADC-CWR Network project, and aimed to present the key results of the project and the key lessons learnt in the establishment of the SADC Network for *In situ* Conservation of CWR.

Acknowledgements

We thank the following organisations for providing resources or support in conservation planning, conservation implementation, policy enhancement and threat assessment: United Nations Food and Agriculture Organization, ITPGRFA, World Bank, Consultative Group on International Agricultural Research (particularly the Alliance of Biodiversity International and CIAT and ICARDA), Global Environment Facility, IUCN SSC, European Commission (including Horizon 2020 Framework Programme), SADC Plant Genetic Resource Centre (SPGRC), SADC Secretariat, SADC Technical Committee, SADC Director, SADC Council of Ministers, European Parliament, European Cooperative Programme for Genetic Resources, Nordic Council of Ministers, REFORM–the INTRA-AFRICA Academic Mobility Scheme, Consejería de Medio Ambiente y Ordenación del Territorio de la Comunidad de Madrid, national governments of Denmark, Finland, Germany (German Federal Ministry of Food and Agriculture), Iceland, Lithuania, Malawi, Norway, Spain, Sweden, Tanzania, United Kingdom (Darwin Initiative), Zambia, and the Royal Botanic Gardens, Kew, MAVA and Toyota Foundations, all partners participating in the projects referred in this report, including all Farmer's Pride ambassadors.

Summary of achievements

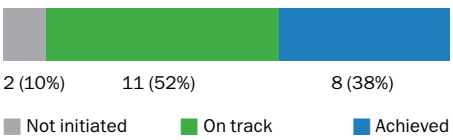
Total number of targets 2021–2025: 21

Geographic regions: 14 Global, 3 Africa, 6 Europe

Actions during 2021:

Plan: 5 (KSR 8, 9)
Act: 6 (KSR 10)
Network: 4 (KSR 1, 2)
Communicate: 3 (KSR 12, 13)

Overall achievement 2021–2025:



2021 Report

IUCN SSC Cycad Specialist Group





SOCIAL MEDIA AND WEBSITE
Facebook: Cycad Specialist Group
Website: www.cycadgroup.org

CO-CHAIR
John Donaldson
South African National Biodiversity Institute, South Africa

CO-CHAIR
M. Patrick Griffith
Montgomery Botanical Center, US

VICE-CHAIR
Cristina Lopez-Gallego
University of Antioquia, Medellin, Colombia

VICE-CHAIR
Michael Calonje
Montgomery Botanical Center, US

RED LIST AUTHORITY COORDINATOR
De Wet Bösenberg
South African National Biodiversity Institute, South Africa

NUMBER OF MEMBERS
44

Mission statement

The Cycad Specialist Group (CSG) exists to bring together the world's cycad conservation expertise, and to disseminate this expertise to organisations and agencies which can use this guidance to advance cycad conservation.

Projected impact 2021–2025

In this quadrennium, the Cycad Specialist Group will impact on cycad species conservation by: (1) ensuring that no cycad becomes extinct, by enhancing assurance colonies for Critically Endangered and Extinct in the Wild species; (2) increasing population numbers of target Critically Endangered species as part of a process to improve their conservation status from Critically Endangered to Endangered; 3) working to reverse pollinator extinctions which will also potentially change the conservation status of three Critically Endangered species; and (4) securing habitat for species and effectively protecting these sites from habitat loss and illegal collecting of plants.

Targets 2021–2025

ASSESS

T-003 Update Red List and Red List Index for all species described up to 2020.

T-009 Assess newly described taxa.

T-010 Improve the evidence base for cycad conservation and management.

PLAN

T-006 Identify priority sites for cycad conservation.

ACT

T-004 Enhance percentage of Extinct in the Wild and Critically Endangered Cycad species represented in assurance colonies.

T-005 Implement genetic analysis of priority taxa to guide conservation action.

T-008 Secure priority sites for cycad conservation.

NETWORK

T-002 Establish the Global Cycad Conservation Consortium and ensure it is operating.

COMMUNICATE

T-001 Publish official newsletter of the Cycad Specialist Group.

T-007 Promote positive cycad conservation action stories.

Activities and results 2021

ASSESS

Red List

T-003 (KSR 6)

Number of global Red List reassessments completed: 351

Result description: We submitted to the Red List Unit updated global assessments for all the cycads with available information to date. We are preparing a document with a Red List Index analysis using the three global assessments for cycads.

PLAN

Planning

T-006 (KSR 8)

Number of conservation plans/strategies developed: 3

Result description: A conservation management plan was developed for *Encephalartos eugene-maraisii*; a recovery action plan for *Encephalartos latifrons*; and an *ex situ* conservation plan for cycads in the South African National Botanical Gardens.

ACT

Conservation actions

T-004 (KSR 10)

Number of threatened species benefiting from *ex situ* conservation action: 3



Phakamani Xaba doing surveys of the Critically Endangered *Encephalartos latifrons*
Photo: John Donaldson



Collecting seed for population recovery of *Encephalartos eugene-maraisii*
Photo: John Donaldson

Result description: Multiple botanical institutions and conservation NGOs are now engaged in efforts to develop genetically representative assurance colonies. Ongoing activities include acquisition and/or exchange of pollen, seed and offsets for Extinct in the Wild and Critically Endangered species, and genetic evaluation of *in situ* and *ex situ* populations. For three *Encephalartos* species in South Africa (*E. latifrons*, *E. middelburgensis*, *E. eugene-maraisii*), successful propagation and reintroductions are being implemented.

T-005 (KSR 10)

Number of technical documents provided to support conservation actions: 1

Result description: The Global Conservation Consortium for Cycads, in collaboration with the Montgomery Botanical Center (US) and other institutions, is coordinating efforts to implement genetic analysis for priority species. Extensive sampling and preliminary analysis of threatened *Encephalartos* in Southern Africa (*ex situ* and *in situ*) and the US (*ex situ*) is underway. In addition, a publication on the conservation genetics of a North American *Zamia* species has recently been published (Griffith, M.P., et al. (2021). 'Genetic Patterns of *Zamia* in Florida Are Consistent with Ancient Human Influence and Recent Near Extirpation'. *International Journal of Plant Sciences* 183(3):169–185. https://doi.org/10.1086/717657). The results of these studies will inform both assurance colony development and reintroduction efforts.

NETWORK

Synergy

T-002 (KSR 1)

Number of 'in kind' partnerships established and maintained: 1

Result description: The Global Conservation Consortium for Cycads has been established in collaboration with Botanic Gardens Conservation International (BGCI) and has appointed a steering committee. The consortium has organised several launch meetings (US, Mexico, Caribbean) and is actively engaging regional stakeholders (botanical gardens, NGOs) in North America, Africa and South America. 'Species stewards' are being identified for the most threatened species of cycads and these stewards have committed to concrete conservation actions for their focal taxa.

COMMUNICATE

Communication

T-001 (KSR 13)

Number of digital communication outputs developed in relation to specific taxonomic groups: 1

Result description: We suspended the publication on the Cycad Specialist Group Newsletter in 2021 (because of difficulties associated with the COVID-19 pandemic) but restarted the editorial work and plan to publish a new issue in January 2022.

T-007 (KSR 13)

Number of communication products using innovative tools: 1

Result description: We published a profile for the Colombian Cycad Conservation Action Plan on the Reverse the Red website (https://www.reversethered.org/stories/cycad).

Acknowledgements

We are grateful for all of our partners and Commission members who participate in these initiatives. We are especially grateful to our US Federal funders at the National Science Foundation and the Institute of Museum and Library Services, which allowed for the *ex situ* and *in situ* genetic studies and also supporting the network through funding the Global Conservation Consortium for Cycads. We are grateful to Montgomery Botanical Center for providing the Programme Office for the CSG.

Summary of achievements

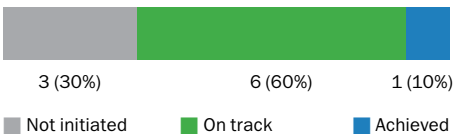
Total number of targets 2021–2025: 10

Geographic regions: 8 Global, 2 Africa, 2 America, 1 Asia

Actions during 2021:

Assess: 1 (KSR 6)
Plan: 1 (KSR 8)
Act: 2 (KSR 10)
Network: 1 (KSR 1)
Communicate: 2 (KSR 13)

Overall achievement 2021–2025:



2021 Report

IUCN SSC Freshwater Plant Specialist Group



SOCIAL MEDIA AND WEBSITE
Facebook: IUCN SSC Freshwater Plant Specialist Group

CHAIR
Richard Lansdown
Ardeola Environmental Services, UK

RED LIST AUTHORITY COORDINATOR
Melanie Bilz
Berlin, Germany

NUMBER OF MEMBERS
132

Mission statement

The Freshwater Plant Specialist Group (FPSG) exists to promote and further the conservation of plant species which are dependent upon wetlands and the habitats upon which they depend.

Projected impact 2021–2025

Not stated.

Targets 2021–2025

ASSESS

T-001 Global conservation assessment of the genus *Callitriche*.

T-002 Global conservation assessment of the genus *Cryptocoryne*.

T-005 Develop a basis for assessment of wetland-dependent plants in the Indo-Burma region.

T-006 Develop a Red List Index of Mediterranean wetland plants.

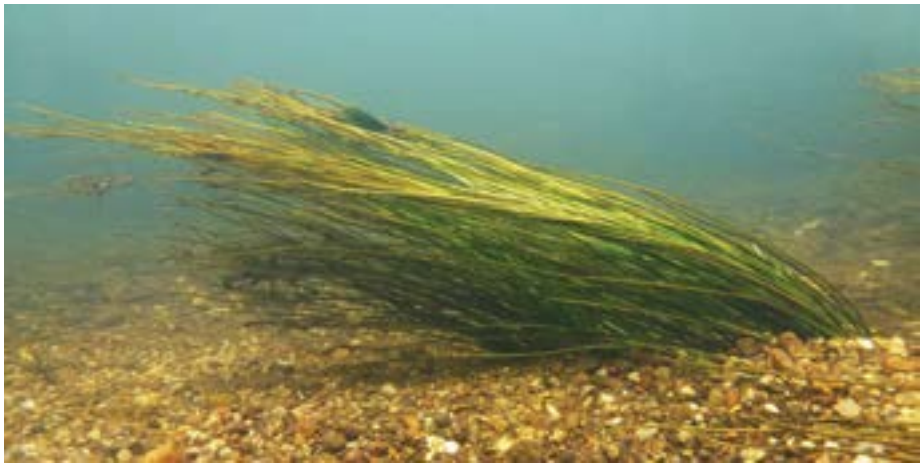
T-007 Develop a global wetland plant Red List Index.

T-008 Global conservation assessment of the Podostemaceae and Hydrostachyaceae.

T-009 Global conservation assessment of the genus *Isoetes*.

T-017 Publish global revision of the genus *Callitriche*, including description of >10 new species.

T-018 Conservation of Western Ghats endemic wetland plants - new Red List assessments.



Isoetes fluitans, Galicia, Spain
Photo: R.V. Lansdown

PLAN

T-010 Develop a global conservation plan for the Podostemaceae and Hydrostachyaceae.

T-011 Develop a system for monitoring climate change using high altitude wetland plants.

T-012 Develop a global conservation plan for *Crinum malabaricum*.

T-013 Develop a global conservation plan for the genus *Callitriche.*

T-015 Raise awareness of conservation needs of overlooked and under-represented wetland habitats.

T-016 Publication of the results of species assessment and conservation planning.

T-019 Conservation of Critically Endangered *Rotala malabarica*: A proposal for survey, awareness and monitoring.

ACT

T-014 Establish a global *ex situ* collection of *Cryptocoryne.*

NETWORK

T-003 Aim to have hosting agreement with a Botanic Garden.

T-004 Hold a meeting with key members to establish a coherent strategy for the next quadrennium and beyond.

COMMUNICATE

T-020 Support Freshwater Conservation Committee communications highlighting freshwater species at risk and threats to freshwater systems.



Callitriche lusitanica, Sardinia
Photo: R.V. Lansdown

Activities and results 2021

ASSESS

Red List

T-002 (KSR 6)

Number of global Red List reassessments completed: 98

Result description: Ninety-eight (98) assessments of the genus *Cryptocoryne* have been submitted for publication on the IUCN Red List. This includes all the species and varieties in the genus, apart from *C. verrucosa* which was described after completion of the remainder. The conservation plan for this group is now under development.

T-005 (KSR 6)

Number of new national Red List assessments published: 0

Result description: A species list for assessment has been developed but it is not clear where to go next from this point.

T-006 (KSR 7)

Development of a regional Red List Index: 0

Result description: 500 assessments for this project have been updated.

T-018 (KSR 6)

Number of new global Red List assessments completed: 0

Result description: Funding has yet to be acquired and work has not begun on this project.

Research activities

T-005 (KSR 5)

Number of scientific publications about species research that acknowledge SSC affiliation: 0

Result description: Completion of the assessments for the Mediterranean Red List Index of wetland-dependent plants is intended to lead to publication of the results.

T-017 (KSR 5)

Number of scientific publications about species research that acknowledge SSC affiliation: 4

Result description: Four articles were published in 2021 clarifying taxonomic and nomenclatural issues, as well as describing nine new species.

PLAN

Planning

T-013 (KSR 8)

Number of conservation plans/strategies developed: 0

Result description: Three conservation plans have been developed, these will be published in the next year.

T-016 (KSR 8)

Contributions to publications referencing conservation of wetland plants: 5

Result description: The group contributed to five publications with reference to global wetland plant species conservation.

ACT

Conservation actions

T-014 (KSR 10)

Number of threatened species benefiting from *ex situ* conservation action: 0

Result description: Progress on the establishment of a global collection in Singapore has been delayed and is currently on hold due to COVID-19.

COMMUNICATE

Communication

T-020 (KSR 12)

Contribute to and disseminate communications from Freshwater Conservation Committee's Species at risk report (in partnership with Shoal) within and outside SSC: ongoing

Result description: In October/November 2021, the group contributed five species nominations to the upcoming report by the Freshwater Conservation Committee and Shoal. Work is now ongoing on compiling the species accounts based on those five nominations. The Freshwater Plant Specialist Group is supporting this work with information, review and feedback.

Summary of achievements

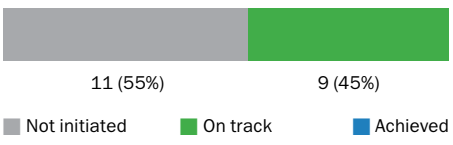
Total number of targets 2021–2025: 20

Geographic regions: 13 Global, 6 Asia, 2 Africa, 1 America, 1 Europa

Actions during 2021:

Assess: 6 (KSR 5, 6, 7)
Plan: 2 (KSR 8)
Act: 1 (KSR 10)
Communicate: 1 (KSR 12)

Overall achievement 2021–2025:



IUCN SSC Galapagos Plant Specialist Group



CHAIR
Alan Tye
UK

RED LIST AUTHORITY COORDINATOR
Alan Tye
UK

NUMBER OF MEMBERS
11

Mission statement

The Galapagos Plant Specialist Group promotes the conservation of all Galapagos native plants and plant-like organisms (including algae, fungi, lichens and similar taxa), with the intention to be inclusive rather than exclusive.

Projected impact 2021–2025

Most of our projects are directed at the conservation of highly threatened plant species and their habitats, including restoration of degraded habitats and reduced populations. During this quadrennium, we expect to have stabilised or improved the conservation status of more than ten Galapagos endemic plant species, across at least ten sites and at least five islands, by means of management of threats (e.g. invasive species), population enhancement and site restoration.

Targets 2021–2025

ASSESS

T-001 Search for presumably extinct and rare plants on Floreana and Santiago islands.

T-002 Contribute to the assessment of the distribution of some endangered endemic vascular plants.

T-003 Re-evaluate endemic vascular plants.

T-004 Red List all ca. 200 Galapagos endemic species of lichenised fungi.

T-005 Assess the population status of species of Galapagos algae deemed Data Deficient by the IUCN.

T-006 Investigate invasive species impacts on endemic flora.

T-007 Generate distribution maps and ecological information for iconic endemic plant groups.

T-009 Assess the value of water-saving technology on the recovery of threatened plant populations.

T-010 Conduct phylogenetic and morphological studies of Families Amaranthaceae, Asteraceae and Zygophyllaceae of the Galapagos.

T-012 Evaluate the conservation status of endangered populations of endemic plants on the islands of Santa Cruz, Isabela and Floreana.

PLAN

T-011 Formulate management recommendations for three invasive plant species (*Rubus niveus*; Guava, *Psidium guajava*; and Quinine, *Cinchona pubescens*) to protect endangered populations of endemic plants.

ACT

T-008 Restore threatened and endangered plant populations in protected areas and populated zones.

T-013 Restore endangered populations of *Scalesia pedunculata* (Santa Cruz) and Heart-leafed Scalesia *(Scalesia cordata*; Isabela).

Activities and results 2021

ASSESS

Red List

T-004 (KSR 6)

Number of new global Red List assessments completed: 1

Result description: In 2021, an additional Galapagos lichen species, Fragile Ramalina *(Ramalina fragilis*; see https://www.iucnredlist.org/species/97459969/97462842), was Red Listed as Vulnerable during a workshop by the IUCN Lichen Specialist Group and the Global Fungal Red List Initiative (http://iucn.ekoo.se/en/iucn/welcome). With Galapagos Spiny Gladiator Lichen *(Acantholichen galapagoensis*) previously listed in 2017 (see https://www.iucnredlist.org/species/95836378/95838134), we now have two endemic Galapagos lichen species included in the Global IUCN Red List. As part of an agreement between IUCN and Arizona State University, the Global Red List of Lichenised Fungi has been made available through the Consortium of North American and Latin American Lichen Herbaria (https://lichenportal.org/cnalh/ and https://lichenportal.org/chlal/, respectively) and can be accessed here: https://lichenportal.org/cnalh/projects/index.php?pid=556. All new assessments of globally Red Listed species of lichenised fungi are being added to these checklists in the Lichen Consortium as soon as the assessments are published. The assessment of endemic species of lichenised fungi



Leucocarpus sp
Photo: Patricia Jaramillo

from the Galapagos continues. We built a database with assessment criteria for the ca. 200 endemic species now known from the archipelago. The assessment criteria have been entered in the IUCN Species Information Service (SIS) and we are in the process of adding the profiles for all species to the Global Fungal Red List Initiative. Using the information from the Galapagos Biodiversity inventory, we are working on a publication that will define how Red List criteria can best be applied to endemic lichen species in the Galapagos. Among the ca. 200 species, several groups of lichens can be identified that are subjected to similar threats and to assess these species together it appears to be more efficient to identify guilds of species with similar ecology and thus subject to similar ecological impacts. A student at Arizona State University's Barret Honors College, Niles Clipson, is now working on this project as part of an honour's thesis. It is anticipated that results of this work will also benefit the upcoming IUCN workshop of the Lichen Specialist Group, which will focus on establishing guidelines to assure that IUCN Red Listing criteria can be applied to lichenised fungi in a way that does justice to the complex biology of these organisms (e.g. IUCN concepts like 'mature individuals', 'generation time', etc., are very challenging to apply to a group of organisms like lichens, where reproduction and means of dispersal are



Galvezia sp
Photo: Patricia Jaramillo



Scalesia retroflexa
Photo: Anna Calle

poorly understood and organisms are not single individuals, but complex symbiotic systems).

T-005 (KSR 6)

Number of global Red List reassessments completed: 50

Result description: Three expeditions were conducted during 2021 to collect more specimens for correct identification. Ongoing work on identification of species is taking place.

Research activities

T-001 (KSR 5)

Number of research projects completed or supported by SSC members per taxonomic group and region: 0

Result description: During 2021, a draft of a new review article was produced on the taxonomy, distribution and conservation of *Psychotria rufipes-P. angustata* from Florena Island. It constitutes the main basis for taking conservation actions. During 2022, we plan to write a proposal in search of funds for field work and publications.

T-009 (KSR 5)

Number of research projects completed or supported by SSC members per taxonomic group and region: 0

Result description: In 2021, the Galapagos Verde 2050 project (GV2050) published a paper on the cost-effectiveness of water-saving technologies for restoration in the Galapagos. This year, 1,200+ endemic and native plants were planted with water-saving technologies and 6,000+ individuals planted in previous years were monitored during 170 visits to GV2050 study sites.

T-010 (KSR 5)

Number of research projects completed or supported by SSC members per taxonomic group and region: 2

Result description: In 2021, the entire genome of *Scalesia atractyloides* was sequenced by José Cerca and Mike Martin, and two publications are expected for 2022. Three genetic permits for projects studying *Scalesia*, *Lecocarpus* and the hybridisation between endemic species and between endemic and introduced species were authorised by the Ministry of Environment, Water and Ecological Transition. A thesis on the genus *Tribulus* (Zygophyllaceae) by PhD student Daniel Reyes is under way.

T-012 (KSR 5)

Number of research projects completed or supported by SSC members per taxonomic group and region: 5

Result description: In 2021, research projects were successfully carried out on the islands of Santa Cruz, Floreana, San Cristóbal and Isabela for the following endemic species: *Scalesia pedunculata*,

Heart-leafed Scalesia *(S. cordata)* and *Miconia robinsoniana*, and the following invasive species: *Rubus niveus* and Quinine (*Cinchona pubescens*).

PLAN

Planning

T-011 (KSR 8)

Number of conservation plans/strategies developed: 4

Result description: Management recommendations about blackberry (*Rubus niveus*), Quinine (*Cinchona pubescens*) and Siam Weed (*Chromolaena odorata*) were formulated and passed on to the Galapagos National Park Directorate in 2021. A national workshop on the advances in development of a biological control agent for *Rubus niveus* was postponed to 2022 due to the COVID-19 pandemic.

ACT

Conservation actions

T-008 (KSR 10)

Number of areas under management for the species or group of species: 7

Result description: In 2021, the natural regeneration of *Galvezia leucantha* var. *leucantha* was observed for the first time since recovery efforts by the GV2050 project began. These new seedlings were protected by fences. Thirty individuals of *Lecocarpus lecocarpoides* grown *ex situ* produced 5,000+ seeds. The search for individuals of *Scalesia retroflexa* in Santa Cruz Island began, with one expedition already conducted. Production of Radiate-headed Scalesia (*Scalesia affinis*) plants started in plant nursery. The GV2050 planted 1,200+ endemic and native plants on 7 islands. At the end of 2021, the Galapagos National Park Directorate approved a new project dedicated to the recovery of threatened plant species that forms part of the Galapagos Verde 2050 Programme. As part of this project, we will begin the re-assessment of all the endemic plants of the Galapagos in 2023, focusing first on priority species for the GV2050.

T-013 (KSR 10)

Number of species with increased or prevented decrease in population or range size, as a result of conservation actions: 7

Result description: In 2021, the following endemic species and their populations benefited from control of invasive species, mainly *Rubus niveus*: *Scalesia pedunculata*, Heart-leafed Scalesia (S. cordata), *Miconia robinsoniana*, *Cyathea weatherbyana*, Galapagos Justicia (*Justicia galapagana*), *Psidium galapageium* and *Croton scouleri*. The following endemic species have been reproduced in the greenhouse and planted at conservation sites: *Scalesia pedunculata* and Heart-leafed Scalesia (S. cordata).

Acknowledgements

The main organisations that carried out or supported our work during 2021, by employing staff, providing permits and logistical assistance, and partaking in collaborative projects, were: the Charles Darwin Foundation for the Galapagos Islands, Galapagos National Park Directorate, Instituto Nacional de Biodiversidad (Ecuador), Arizona State University and Eastern Washington University. We also thank the following organisations for their generous financial assistance, without which our work in 2021 would have been impossible: Comon Foundation, Foundation Franklinia, Galapagos Conservancy, Keidanren Nature Conservation Fund and Lindblad Expedition-National Geographic Fund.

Summary of achievements

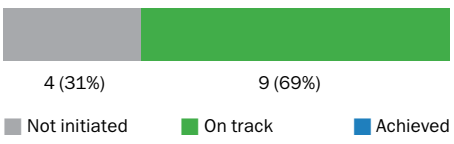
Total number of targets 2021–2025: 13

Geographic regions: 13 America

Actions during 2021:

Assess: 6 (KSR 5, 6)
Plan: 1 (KSR 8)
Act: 2 (KSR 10)

Overall achievement 2021–2025:



2021 Report

IUCN SSC Global Tree Specialist Group





CO-CHAIR
Sara Oldfield
Freelance, 5 Marshall Road, Cambridge, CB1 7TY, UK

CO-CHAIR
Adrian Newton
School of Applied Sciences, Bournemouth University, Talbot Campus, Fern Barrow, Poole, Dorset, UK

RED LIST AUTHORITY COORDINATOR
Malin Rivers
Botanic Gardens Conservation International, Richmond, UK

NUMBER OF MEMBERS
97

SOCIAL MEDIA AND WEBSITE
Website: https://globaltrees.org/iucn-ssc-global-tree-specialist-group/

Mission statement

The aims of the Global Tree Specialist Group (GTSG) are to promote and implement global Red Listing for trees and to act in an advisory capacity to the Global Trees Campaign.

Projected impact 2021–2025

Publication of conservation assessments for all tree species (around 58,000) on the IUCN Red List as a basis for enhanced conservation awareness, planning and action.

Targets 2021–2025

ASSESS

T-001 Publish a Global Tree Assessment (GTA) report highlighting information on conservation status of all tree species.

T-002 Publish a high impact journal publication on the conservation status of the world's trees.

T-004 Work with Botanic Gardens Conservation International (BGCI), other SSC Plant Groups and other partners to undertake 18,000 updated or new Red List assessments for trees.

T-006 Publish a Red List of global timber species.

T-010 Undertake a Key Biodiversity Areas (KBA) analysis of tree data.

T-011 Publish the Red List of Dipterocarpaceae of Borneo.

T-013 Hold tree Red List assessment meetings to review species of Asia and South America.

T-016 Publish a paper on links between the Red List of Ecosystems and the Red List of Trees.

T-017 Publish a paper in a high impact journal on the impact of the international timber trade on tree species.

T-021 Publish a peer-reviewed journal article that outlines the process of tree data sharing between NatureServe and the IUCN Species Information Service (SIS), to facilitate the completion of Red List assessments for US tree species, highlighting the assessment results.

PLAN

T-018 Initiate tree species conservation planning for selected tree groups – *Acer*, *Magnolia*, *Quercus* and dipterocarps – working with BGCI's Global Consortia.

ACT

T-007 Establish a new role for GTSG in expanded Global Trees Campaign partnership facilitating tree conservation action by Group members.

NETWORK

T-005 Develop and implement a new GTSG website.

T-008 Expand GTSG with 20 new members, increasing GTSG expertise on *in situ* conservation and conservation policy.

T-012 Train 400 people in Red List assessment for tree species.

T-014 Hold a conference to promote the results of Red List assessments for all tree species and call for increased action.

T-015 Implement a revised structure for GTSG with appropriate leadership and taxonomic/geographical/thematic subgroups formed.

T-019 Strengthen liaison with CITES, the International Tropical Timber Organization (ITTO) and other appropriate groups to promote increased action for globally threatened timber species.

COMMUNICATE

T-003 Publish a Red List of Madagascar Trees.

T-020 Produce four GTSG newsletters annually.

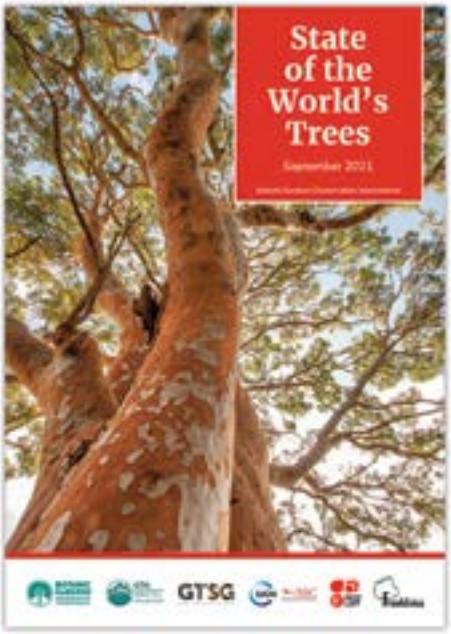
Activities and results 2021

ASSESS

Red List

T-001 (KSR 6)

Number of technical documents provided to support Red List assessments/reassessments: 1



Result description: On 1 September 2021, BGCI published the *State of the World's Trees* report, which shows that 30% of all tree species – more than 17,500 species – are threatened with extinction.

T-004 (KSR 6)

Number of new global Red List assessments completed: 7,475

Result description: In 2021, we implemented or supported publication of 7,475 new Red List assessments for trees on the IUCN Red List of Threatened Species. In addition, 2,427 submitted assessments await processing by the IUCN Red List Unit.

T-006 (KSR 6)

Number of technical documents provided to support Red List assessments/reassessments: 1

Result description: The Red List of Timber Trees is currently in preparation, encompassing over 4,000 species with published IUCN Red List assessments. Timber use is the most common recorded use among the world's tree species; in addition, logging is one of the two most common threats to trees. Therefore, this publication will be of high importance, highlighting the conservation status of the world's timber trees. The report includes both commercially traded as well as subsistence use timber trees. It will also provide recommendations for conservation action, including encouraging sustainable use and forest management. The results of this report should be used to inform policy makers and guide conservation efforts to catalyse conservation action for species that are under threat, to ensure that no species becomes extinct.

T-011 (KSR 6)

Number of technical documents provided to support Red List assessments/reassessments: 1

Result description: In October 2021, BGCI published *The Red List of Bornean Endemic Dipterocarps*, which documents the conservation status of all 162 species of dipterocarp tree endemic to Borneo. This shows that 62%, or 99 species, are at risk of extinction in the wild, with the major threats being conversion of lowland forest to agro-industrial plantations and logging.

Research activities

T-002 (KSR 5)

Number of scientific publications about species research that acknowledge SSC affiliation: 0

Result description: Various articles are in preparation including a 'Scientists' warning to humanity on tree extinctions'.

T-017 (KSR 5)

Number of scientific publications about species research that acknowledge SSC affiliation: 0

Result description: This paper is in preparation.

T-021 (KSR 5)

Number of scientific publications about species research that acknowledge SSC affiliation: 1

Result description: A manuscript on North American tree species has been submitted to the special issue of *Plants, People and Planet* on the GTA.

NETWORK

Capacity building

T-012 (KSR 2)

Number of people trained in assessment tools: 60

Result description: In 2021, 60 people working on the GTA, in East Africa, Indonesia, Haiti, Brazil, Puerto Rico, and botanists working on Guiana Shield assessments, were trained.

Membership

T-008 (KSR 2)

Number of SSC members recruited: 9

Result description: In 2021, nine new members joined.

COMMUNICATE

Communication

T-003 (KSR 12)

Number of media articles mentioning IUCN Species theme: 1

Result description: *The Red List of Trees of Madagascar*, published by BGCI in 2021, provides the first comprehensive assessment of the conservation status of Malagasy trees. Madagascar has 3,118 tree species, 93% of which are endemic to the island. In total, 320 native tree species are assessed as Critically Endangered, of which 59 species are tagged as 'Critically Endangered possibly extinct in the wild', 915 native tree species are assessed as Endangered and 605 are assessed as Vulnerable. Almost all threatened species are assessed using Criterion B, owing to a small and restricted geographic range, occurrence in few locations and experiencing continuing decline. Over 94% of the assessments represented the first IUCN Red List assessment for the species. The report also includes analyses of the extent of *in situ* and *ex situ* conservation measures, identifies the most threatened habitat for trees (lowland rainforest) and the distribution of threatened trees. The states of SAVA, DIANA, Analanjirofo and Anosy have the highest proportion of tree species and are sites in particular need of tree conservation effort.

T-020 (KSR 12)

Number of Species e-bulletin, Save Our Species newsletter, SSC Groups' newsletter editions produced: 3

Result description: Three GTSG newsletters were published in 2021.

Acknowledgements

We are most grateful to BGCI for providing the Secretariat for the GTSG, and for the generous support from botanic gardens including The Morton Arboretum and Rio de Janeiro Botanic Garden. We also wholeheartedly thank Fondation Franklinia.

Summary of achievements

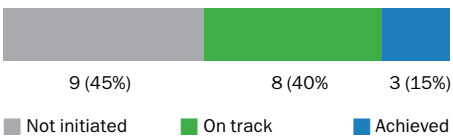
Total number of targets 2021–2025: 20

Geographic regions: 17 Global, 1 Africa, 1 America, 1 Asia

Actions during 2021:

Assess: 7 (KSR 5, 6)
Network: 2 (KSR 2)
Communicate: 2 (KSR 12)

Overall achievement 2021–2025:



2021 Report

IUCN SSC Hawaiian Islands Plant Specialist Group



SOCIAL MEDIA AND WEBSITE
Website: https://laukahi.org/hawaii-rare-plant-restoration-group/

CHAIR
Lauren Weisenberger
U.S. Fish and Wildlife Service, Honolulu, Hawaii, US

RED LIST AUTHORITY COORDINATOR
Matthew Keir
State of Hawaii Department of Land and Natural Resources, Division of Forestry and Wildlife, Honolulu, Hawaii, US

NUMBER OF MEMBERS
203

Mission statement

The mission of the Hawaiian Islands Plant Specialist Group (HIPSG) is to prevent the extinction of native Hawaiian plants and provide for their recovery through a cooperatively administered off-site plant conservation system, in collaboration with on-site management partners to sample, propagate, and reintroduce rare plants; and to advance the preservation of native plants and their habitats through effective communication and public education.

Projected impact 2021–2025

Continue to work collaboratively to prevent species extinctions through *in situ* management and *ex situ* propagation, develop best management practices to support those efforts, communicate urgent needs and work together to address them, and identify next steps for the conservation of native habitats in Hawai'i.

Targets 2021–2025

ASSESS

T-002 Red List single island endemic species.

PLAN

T-003 Complete recovery plans for federally endangered species.

ACT

T-005 Manage species (monitor, collect, outplant, protect).

NETWORK

T-001 Recruit 10 new members.

COMMUNICATE

T-004 Share best management practices (BMP) documents among members.

Activities and results 2021

ASSESS

Red List

T-002 (KSR 6)

Number of new global Red List assessments completed: 58

Result description: Single-island endemic species from the island of Kaua'i were published in 2021.

PLAN

Planning

T-003 (KSR 8)

Number of plans invited/endorsed by national governments/conservation authorities: 0

Result description: Plans have been drafted for most species; there are still 20 species that need to be drafted. No plans have been published.

ACT

Conservation actions

T-005 (KSR 10)

Number of threatened species benefiting from *in situ* conservation action: 100

Result description: The Plant Extinction Prevention Program (PEPP) conducted *in situ* management actions for over 100 species this year. The exact number can be provided in January 2022.

NETWORK

Membership

T-001 (KSR 2)

Number of SSC members recruited: 11

Result description: 11 new members joined in 2021.

COMMUNICATE

Communication

T-004 (KSR 12)

Number of BMPs published or revised: 1

Result description: The BMP, Naming Rare Plant Population, Subpopulations, Sites, and Plants, was published at the beginning

View of Nihoa from Tanager Peak
Photo: Lauren Weisenberger





Outplanting on Molokaʻi by PEPP
Photo: Ane Bakutis

of the year. Two other BMPs are being drafted, including one on botanical vouchers, and another on the permitting process for working with federally listed plants.

Acknowledgements

Mahalo nui loa to all our partners and everyone supporting the conservation and actively conducting conservation activities to protect plants and native ecosystems in Hawaiʻi.

Summary of achievements

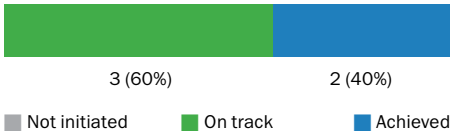
Total number of targets 2021–2025: 5

Geographic regions: 5 America

Actions during 2021:

Assess:	1 (KSR 6)
Plan:	1 (KSR 8)
Act:	1 (KSR 10)
Network:	1 (KSR 2)
Communicate:	1 (KSR 12)

Overall achievement 2021–2025:



IUCN SSC Korea Plant Specialist Group

KPSG



CHAIR
Chin-Sung Chang
College of Agriculture and Life Sciences, Seoul National University, 1 Gwanak-ro, Gwanak-gu, Seoul 08826, Republic of Korea

RED LIST AUTHORITY COORDINATOR
Chin-Sung Chang
College of Agriculture and Life Sciences, Seoul National University, 1 Gwanak-ro, Gwanak-gu, Seoul 08826, Republic of Korea

NUMBER OF MEMBERS
8

Mission statement

To support the conservation of Korean plant diversity, for present and future generations, through interdisciplinary collaboration, applied conservation biology and professional development.

Projected impact 2021–2025

The Korea Plant Specialist Group (KPSG) plans to bring together members with all relevant governmental and non-governmental organisations about plant conservation in the Korean peninsula to achieve the conservation targets for the next quadrennium.

Targets 2021–2025

ASSESS

T-001 Assess subendemic vascular species of the Korean Peninsula.

T-002 Red List: complete assessment of Korean endemic plants.

T-006 Plan regional network organisation to assess regional Red List in East Asia.

PLAN

T-004 Conservation activities: implement conservation actions related to *ex situ* and *in situ* conservation, including plant introductions.



Population monitoring for the endangered species *Codonopsis minima* at Mt. Halla, Jeju-do in 2021
Photo: Hui KIM



Population monitoring for the endangered species *Scrophularia takeshimensis* at Ulleung island in 2021
Photo: Hui KIM



KPSG - Korea National Arboretum meeting for EABCN Working group. Aug 22, 2022
Photo: Hui KIM



IUCN Red List Assessor Training workshop. June 2022
Photo: Hui KIM



KPSG and Korea National Arboretum had a meeting for the administrative support for threatened plants in forest area
Photo: Hui KIM

NETWORK

T-003 Provide technical advice on biodiversity policy to the national institutions and universities in Korea.

T-005 Expand KPSG membership.

Activities and results 2021

ASSESS

Red List

T-001 (KSR 6)

Number of new global Red List assessments completed: 0

Result description: KPSG listed candidate species for the IUCN Red List at a global scale. This list will be open to other members to select species for the next stage.

T-002 (KSR 6)

Number of new global Red List assessments completed: 0

Result description: KPSG took part in a Red List workshop with the National Institute of Biological Resources and IUCN SSC to complete the assessment of Korean endemic vascular plants.

Research activities

T-006 (KSR 5)

Number of publications produced in internal journals of SSC groups: 1

Result description: We published the following journal article: Chang, C.-S., Kwon, S.-Y. and Kim, H. (2021). 'Status and Quality Analysis on the Biodiversity Data of East Asian Vascular Plants Mobilized through the Global Biodiversity Information Facility (GBIF)'. *Journal of Korean Society of Forest Science* 110(2):179–188. https://doi.org/10.14578/jkfs.2021.110.2.179

PLAN

Planning

T-004 (KSR 8)

Number of conservation plans/strategies developed: 2

Result description: Periodic meetings were held with the National Institute of Biological Resources and Korea National Arboretum.

NETWORK

Membership

T-005 (KSR 2)

Number of SSC members recruited: 3

Result description: KPSG recruited three experts as regular members.

Synergy

T-003 (KSR 4)

Number of governments supported to develop species conservation policies: 1

Result description: KPSG had a meeting with the forestry administration to share the idea of species conservation on 8 October 2021.

Acknowledgements

Korea National Arboretum, National Institute of Biological Resources, Chollipo Arboretum, T.B. Lee Herbarium Seoul National University.

Summary of achievements

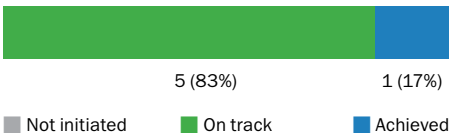
Total number of targets 2021–2025: 6

Geographic regions: 6 Asia

Actions during 2021:

Assess: 3 (KSR 5, 6)
Plan: 1 (KSR 8)
Network: 2 (KSR 2, 4)

Overall achievement 2021–2025:



IUCN SSC Macaronesian Islands Plant Specialist Group





CO-CHAIR
Mónica Moura
Universidade dos Açores, São Miguel, Açores, Portugal

CO-CHAIR
Juli Caujapé-Castells
Jardín Botánico "Viera y Clavijo", Unidad Asociada al CSIC, Cabildo de Gran Canaria, Canarias, Spain

VICE-CHAIR
Maria Manuel Romeiras
University of Lisbon, Lisbon

VICE-CHAIR
Francisco Fernándes
Jardim Botânico da Madeira, Eng.º Rui Vieira, Madeira, Portugal

RED LIST AUTHORITY COORDINATOR
Luís Silva
Universidade dos Açores, São Miguel, Açores, Portugal

NUMBER OF MEMBERS
14

Mission statement

The IUCN SSC Macaronesian Islands Plant Specialist Group (MIPSG) will act as a mechanism for driving and implementing urgent conservation actions across the region, supported by solid and updated scientific evidence, in a collaborative framework that encompasses regional Universities, Botanic Gardens and Administrations.

Projected impact 2021–2025

The targets for the 2021-2025 period clearly address several of the major knowledge problems faced by the insular floras of Macaronesia and worldwide. The application of the multidisciplinary data from projects led by the participating researchers to both widespread and narrowly distributed endemics will help unveil overlooked taxa and upscale the scientific background of the existing conservation strategies, with positive impacts on the red list assessments of the most endangered taxa.

Furthermore, we expect that the existing collaborative international research setting created throughout the last decades by the different participants in the specialist group will help build the needed political context to influence properly funded conservation decisions, and provide the citizenship with informed guidelines to help preserve the great natural heritage of Macaronesia.

Targets 2021–2025

ASSESS

T-001 Complete and publish new Red List assessments on Macaronesian plants on the IUCN Red List of Threatened Species website.

T-007 Monitor populations of Critically Endangered and Endangered taxa and diagnose their current threat status.

PLAN

T-009 Ensure upscaling the application of multi-disciplinary research results in the planning of reinforcements, reintroductions and/or assisted migrations of plant endemics.

ACT

T-002 Population-level Monitoring and Analysis: Establish monitoring programmes for selected species and groups of species targeting the monitoring of populations of Critically Endangered and Endangered taxa.

T-003 Special initiatives to tackle major conservation crises: Bring focused attention to resolving major crises in biodiversity conservation – target species *Musschia isambertoi*.

T-004 Special initiatives to tackle major conservation crises: Bring focused attention to resolving major crises in biodiversity conservation, ensuring upscaling the application of multi-disciplinary research results in the planning of reinforcements, reintroductions and/or assisted migrations of endemics.

T-006 Conduct *in situ* and *ex situ* conservation (seeds, herbarium and living collections) of Critically Endangered and Endangered plants and preventive sampling of seeds of more widely distributed plant taxa.

T-012 Carry out DNA banking and analyses of Critically Endangered and Endangered plants for inclusion in conservation planning and institutional information systems.



Azores landscape
Photo: Mónica Moura

NETWORK

T-010 Network with research institutions and political actors related to the conservation of insular floras.

T-011 Organise capacity building workshops and courses for staff, and attract Master's and Doctoral students to collaborate with other teams in the Specialist Group.

COMMUNICATE

T-008 Develop different outreach programmes aimed at stimulating actions and social awareness about the importance and degree of threat of insular floras.

Activities and results 2021

PLAN

Planning

T-009 (KSR 8)

Number of conservation plans/strategies developed: 15

Result description: In Gran Canaria, the teams of projects NEXTGENDEM (MAC2/4.6d/236, https://www.nextgendem.eu/es/), MACFLOR (MAC2/4.6d/190, MAC2/4.6d/386; https://macflor.com/) and NEXTPOL advanced in the construction of web pages with databases and information systems aimed at multi-disciplinary research and conservation of the Macaronesian flora. Many results were presented at the X Congress of the Spanish Society for Plant Conservation (SEBiCoP, https://www.sebot.org/congresos/).

ACT

Conservation actions

T-002 (KSR 10)

Number of species with increased or prevented decrease in population or range size, as a result of conservation actions: 1

Result description: The Madeira group developed an internal IUCN grant to monitor the population of *Musschia isambertoi* (Campanulaceae), complemented with seed collection from as many plants as possible and propagation, using either seeds from the natural habitat or from the Madeira Botanical Garden Seed Bank.

T-006 (KSR 10)

Number of seed accessions collected and preserved in the seed bank: 311

Result description: A total of 135 seed accessions of 26 Canarian endemic taxa from Gran Canaria and 124 accessions of 25 Cape Verdean endemic taxa from Santiago were deposited in the seed bank of the Botanic Garden "Viera y Clavijo"–Unidad Asociada al CSIC (JBCVC-UACSIC) under the project NEXTGENDEM. Vouchers of most populations were deposited in the Santiago and LPA Herbaria. The usefulness of Rasazurin to assess seed viability was tested in Pimentero de Temisas (*Solanum lidii*; Solanaceae), and the viability of seeds of Crestagallo de Pinar (*Isoplexis isabelliana*; Plantaginaceae) was successfully checked after more than 30 years of storage at the facilities of the JBCVC-UACSIC. In the Azores Seed Bank, a yearly *ex situ* seed banking campaign was implemented, with 52 taxa added to the facilities, including three Endangered taxa and one Vulnerable taxon. Fifteen taxa were subjected to germination trials, including one Critically Endangered and one Endangered taxon, which resulted in dozens of individuals being returned to their natural populations.

T-012 (KSR 10)

Number of threatened species benefiting from *ex situ* conservation action: 211

Result description: A total of 2,291 individuals of 174 Canarian endemic taxa from Gran Canaria and 1,143 individuals of 27 Cape Verdean endemic taxa from Santiago were sampled and deposited in the Canarian Flora DNA Bank at the Botanic Garden



Geranium maderense
Photo: Projeto REGIS



Helianthemum bystropogophyllum (Cistaceae)
a CR endemic from Gran Canaria sampled
for NEXTGENDEM project
Photo: Marco Díaz-Bertrana

Andryala crithmifolia
Photo: Projeto REGIS





Umbilicus schmidtii in Serra Malagueta (Santiago, Cabo Verde)
Photo: David Padilla



Sampling for NEXTGENDEM project in Cabo Verde
Photo: David Padilla

"Viera y Clavijo"–Unidad Asociada al CSIC (project NEXTGENDEM, MAC2/4.6d/236). Vouchers of most populations were deposited in the Santiago and LPA Herbaria. Also under the NEXTGENDEM MAC2/4.6d/236 project, amplification and sequencing of 943 *rbcL* and 805 *matK* sequences from Cape Verdean and Canarian endemics was carried out, for deposit and analyses in the NEXTGENDEM information systems operated by the Cabildo de Gran Canaria. Collaborations were conducted with other members of the group and external institutions to investigate the biogeography of several Macaronesian endemics, especially within *Lotus* (Fabaceae) and *Aeonium* (Crassulaceae).

NETWORK

Synergy

T-010 (KSR 1)

Number of in kind partnerships established and maintained: 7

Result description: In Gran Canaria, the group of the JBCVC-UACSIC reinforced the need to sign an official convention with the Canarian Government to support and provide funding to continue and to enhance the missions of the Seed Bank, DNA Bank, Herbarium and Ethnobotany bank (submitted in 2013, pending since that year). Furthermore, several meetings were held between the teams of the NEXTGENDEM project (MAC2/4.6d/236, https://www.nextgendem.eu/es/) and the Biodiversity Data Bank of the Canary Islands (BIOTA, https://www.biodiversidadcanarias.es/biota/) to improve knowledge of distribution of the endemic Canarian flora, link databases of BIOTA and NEXTGENDEM, and pave the way for further collaborations in scientific publications and projects. Other efforts involved meetings of JBCVC-UACSIC and Cape Verde National Agricultural Research and Development Institute (INIDA) officials with different institutions based in Cape Verde, and participation in the HEXAGONE structural project in Sao Miguel (Açores).

COMMUNICATE

Communication

T-008 (KSR 13)

Number of communication products using innovative tools: 20

Result description: In Gran Canaria, the Botanic Garden "Viera y Clavijo"–Unidad Asociada al CSIC organised its 'month of science' in November, with a series of lectures offered by its scientific staff in universities, schools and institutes across the island. This programme was complemented with activities in the Botanic Garden led by the staff in the Environmental Education department, aimed at children and families. Several articles and interviews with relevant conservation actors were published in the online biodiversity forum Greentank (https://www.greentank.es/) as well as on the Facebook page (https://www.facebook.com/JardinBotanicoCanarioVierayClavijo/) and in the social media of project NEXTGENDEM (https://twitter.com/NextgendemTech; https://www.instagram.com/nextgendem/).

Acknowledgements

The group from Azores acknowledges the Regional Government of the Azores for providing financial and administrative support and the LIFE Programme for funding the projects LIFE VIDALIA (LIFE17 NAT/PT/000510), LIFE IP AZORES NATURA (LIFE17 IPE/PT/000010), LIFE BEETLES (LIFE 18 NAT/PT/000864) and LIFE SNAIL (LIFE20 NAT/PT/001377), which are implementing conservation actions toward species of interest to this Specialist Group. The group from Gran Canaria acknowledges the Cabildo de Gran Canaria and the projects NEXTGENDEM-MAC2/4.6d/236 (https://www.nextgendem.eu/es/) and NEXTPOL for financial support, and the Fundación Canaria Amurga-Maspalomas and the public corporation GESPLAN SA for collaboration and logistical support. The group from Madeira acknowledges the financial support of project REGIS – Conservação de Recursos Genéticos Florestais na Madeira (https://www.iniav.pt/projetos/regis).

Summary of achievements

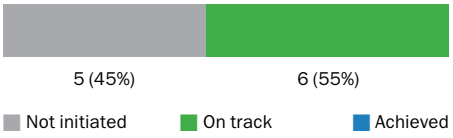
Total number of targets 2021–2025: 11

Geographic regions: 5 Africa, 10 Europe

Actions during 2021:

Plan: 1 (KSR 8)
Act: 3 (KSR 10)
Network: 1 (KSR 1)
Communicate: 1 (KSR 13)

Overall achievement 2021–2025:



IUCN SSC Madagascar Plant Specialist Group



CHAIR
Mijoro Rakotoarinivo
Plant Biology and Ecology Department, Faculty of Sciences, University of Antananarivo, Madagascar

RED LIST AUTHORITY COORDINATOR
Sylvie Andriambololonera
Missouri Botanical Garden, Madagascar Program – Research Unit, Antananarivo 101, Madagascar

NUMBER OF MEMBERS
56

Mission statement

The mission of the Madagascar Plant Specialist Group (MPSG) is to increase the knowledge on Madagascar plant diversity (flora and habitats) by assessing and/or reviewing their conservation status (especially for IUCN and CITES), and promote their conservation by identifying conservation priorities, giving recommendations for their survival, and reinforcing people's efforts toward the conservation of plant diversity.

Projected impact 2021–2025

By providing basic information on species threats and human pressure, the SSC MPSG contributes to the protection of plant diversity and promotes biodiversity conservation in Madagascar. As more and more species face extinction in the wild, efforts to protect wildlife are becoming increasingly fundamental.

Targets 2021–2025

ASSESS

T-001 Assess the extinction risk of the endemic and native flora of Madagascar.

T-005 Increase the knowledge of plant status in Key Biodiversity Areas.

ACT

T-007 Promote the use of indigenous and endemic trees in ecosystem restoration.

NETWORK

T-004 Enhance the membership and the capacity of the SSC Madagascar Plant Specialist Group.

COMMUNICATE

T-002 Develop a national strategy for plant conservation in Madagascar.

T-006 Propose scientific basis for national legislation and policy on the conservation of the Malagasy flora.

Activities and results 2021

ASSESS

Red List

T-001 (KSR 6)

Number of global Red List reassessments completed: 340

Result description: The conservation status of 340 species was assessed in 2021, bringing to 4,780 the number of vascular plants that have so far been documented in Madagascar according to the IUCN Red List criteria. The assessments of the 340 species were mostly possible thanks to projects carried out in collaboration with MPSG partners: (1) BGCI (Botanic Gardens Conservation International) has published the latest assessments conducted as part of the 'Tree campaign' project carried out between 2017–2021; (2) Missouri Botanical Garden assessed the orchid species that are threatened by a mining project in the Moramanga area; (3) the G3D consortium (Sustainable Management of *Diospyros* and *Dalbergia*) for the conservation of Madagascar's precious woods, which has assessed 43 species of ebony, *Diospyros*, native to Madagascar.

NETWORK

Membership

T-004 (KSR 2)

Number of SSC members recruited: 30

Result description: As part of the membership renewal for the 2021–2025 quadrennium, 56 SSC MPSG members have already renewed their registration in the IUCN portal as of mid-December 2021. During 2021, the MPSG made an effort to extend the association to many researchers residing and working outside of Madagascar but specialising in the study and conservation of the island's plants (about 15 non-Malagasy researchers currently).



Ravenea dransfieldii (Arecaceae), EN. The species is threatened by the habitat loss but also by the leaves collecting for thatching and weaving
Photo: Mijoro Rakotoarinivo



Powderyt fruits of *Diospyros gracilipes* (Ebenaceae). Despite the species is currently assessed as LC (Least Concern) in the Red List categories, it is highly exploited as source of timber in Madagascar
Photo: Tiana Randriamboavonjy

COMMUNICATE

Communication

T-002 (KSR 13)

Number of print communications materials distributed in relation to specific taxonomic groups: 2

Result description: Two reports have been published in 2021: (1) in collaboration with BGCI (Botanic Gardens Conservation International), the MPSG released *The Red List of Trees of Madagascar*, which provided the first comprehensive assessment of the conservation status of the 3,118 trees species of Madagascar. The report, published in March 2021, highlights the enormous amount of work done over the past three years on the Red List assessments, as 94% of these trees are assessed for the first time. Furthermore, 63% of trees are threatened with extinction in Madagascar, but unfortunately only 16% of these species benefit from *ex situ* conservation measures, still far from the target set by the Global Strategy for Plant Conservation (75%). The report can be viewed and downloaded from the BGCI website; (2) with the support of the IUCN SSC internal grant, the MPSG, represented by Faranirina, elaborated a report highlighting the most relevant information to know for the better conservation of the native flora of Madagascar. The data of nearly 4,400 species of vascular plants, evaluated in the IUCN Red List at the beginning of 2021, were analysed to identify the main types of pressures on the flora of Madagascar, as well as the current trends of threatened plants, either in terms of geography or taxonomy. The results revealed that 60% of Madagascar's flora are threatened with extinction; most of these are tree and forest species. Logging, including timber harvesting, slash-and-burn agriculture and fires are identified as the main threats to the flora of Madagascar. This work attempts to transmit some recommendations for the conservation and preservation of the Malagasy flora. It is an opportunity to underline the importance of the legislation on threatened plants in the implementation of the fight against illicit and irrational exploitation. The document also suggests further necessary investigations for the flora, including in particular data collection on the populations of plants in their natural environment, for a more accurate assessment of the risks of extinction of the plant diversity and to better inform priority actions of conservation.

Acknowledgements

The SSC MPSG would like to express its gratitude to the partners and collaborators for their support. The Madagascar Tree Assessments project was facilitated by Emily Beech from Botanic Gardens Conservation International (BGCI), with the support of many MPSG members from Missouri Botanical Garden and Royal Botanic Gardens, Kew. We also thank the Re:Wild Foundation for its funding of a project on the status of the flora of Madagascar. Finally, our sincere thanks to the staff of the Ministry of Environment and Sustainable Development of Madagascar for their encouragement and interest in the conservation of Madagascar's plants.

Summary of achievements

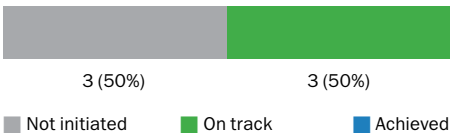
Total number of targets 2021–2025: 6

Geographic regions: 6 Africa

Actions during 2021:

Assess: 1 (KSR 6)
Network: 1 (KSR 2)
Communicate: 1 (KSR 13)

Overall achievement 2021–2025:



2021 Report

IUCN SSC Mangrove Specialist Group



CHAIR
Joe Shing Yip Lee
Simon FS Li Marine Science Laboratory, The Chinese University of Hong Kong, Shatin, Hong Kong

RED LIST AUTHORITY COORDINATOR
Jean W.H. Yong
Department of Biosystems and Technology, Swedish University of Agricultural Sciences, Alnarp, Sweden

NUMBER OF MEMBERS
57

SOCIAL MEDIA AND WEBSITE
Facebook: @IUCNMSG2013
Twitter: @IUCN_Mangrove
Website: https://www.zsl.org/iucn-ssc-mangrove-specialist-group

Mission statement

No formal mission statement.

Projected impact 2021–2025

The Mangrove Specialist Group (MSG) aims to complete the assessment of the ~80 species of mangroves for Red Listing purposes, and to contribute significantly to the Red List of Ecosystems process for mangroves. We also look forward to contributing significantly to global mangrove restoration work, including but not limited to our participation in the Global Mangrove Alliance.

Targets 2021–2025

ASSESS

T-001 Complete assessment of 80 species of mangroves.

T-002 Participate in the Red List of Ecosystems.



Least Concern *Scyphiphora hydrophyllacea* flowers, Pulau Ubin, Singapore
Photo: John Yong



Lumnitera racemosa flowers, Bali, Indonesia
Photo: John Yong

Activities and results 2021

ASSESS

Red List

T-001 (KSR 6)

Number of global Red List reassessments completed: 0

Result description: Funding had previously been obtained for a face-to-face workshop to reassess 80 species of mangrove for the IUCN Red List. Because of COVID-19, this activity has been delayed. This Red List workshop will happen once in-person meetings become a possibility again for the group.

T-002 (KSR 6)

Contribute to Red List of Ecosystem assessments: 0

Result description: We have been coordinating with the IUCN Red List of Ecosystems team in recruiting members of the Mangrove Specialist Group to contribute to the assessment of ecosystems in various identified bioregions of the world. A few meetings have already occurred to explain the assessment process to the participants.

Acknowledgements

We thank the Environment and Conservation Fund, Hong Kong, for a grant towards the IUCN MSG Symposium and the Red Listing Workshop, originally scheduled to be held in Hong Kong in 2022 (cancelled due to the pandemic).

Summary of achievements

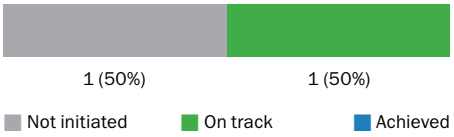
Total number of targets 2021–2025: 2

Geographic regions: 2 Global

Actions during 2021:

Assess: 1 (KSR 6)

Overall achievement 2021–2025:





Least Concern *Bruguiera gymnorhiza* flowers, Merbok, Malaysia
Photo: John Yong

IUCN SSC Mascarene Islands Plant Specialist Group





CO-CHAIR
Vikash Tatayah
Mauritian Wildlife Foundation, Vacoas, Republic of Mauritius

CO-CHAIR
Stéphane Baret
Société Publique Locale Écologie et Développement Durable des Espaces Naturels, La Réunion, France

RED LIST AUTHORITY COORDINATOR
Kersley Pynee
National Parks and Conservation Service, Ministry of Agro-Industry and Food Security, Réduit, Republic of Mauritius

NUMBER OF MEMBERS
30

Mission statement

To conserve native plants of the Mascarene Islands.

Projected impact 2021–2025

For La Réunion island, set up: (1) a system for automatic assessment of the status of protected plant populations, according to the different concrete actions (new plantations), at (a) the level of managed areas and (b) the island scale; (2) a series of localised arboreta (at the watershed-wide, for relevance to ecotypes and traceability), including rare, protected species, for future conservation action projects. For Mauritius: an increasing number of the endemic flora of Mauritius and Rodrigues assessed for the IUCN Red List; multiple collaborations between local NGO, private, government, and international institutions initiated or reinforced; improved capacity and increasing initiatives to save most threatened plants from extinction; institutions and members contributing to key national policies and dialogues; and raising awareness of the increasing threat of development, alien species, deforestation to biodiversity.

Targets 2021–2025

ASSESS

T-001 Conduct Red List assessment for 25 endemic plants of Mauritius and Rodrigues by 2025.

NETWORK

T-002 Recruit three new members annually in Mauritius and Rodrigues.

Activities and results 2021

ASSESS

Red List

T-001 (KSR 6)

Number of species that have been assessed through the different tools: 13

Result description: Thirteen (13) species assessments were submitted to the Red List Unit or are being reviewed.

NETWORK

Membership

T-002 (KSR 2)

Number of SSC members recruited: 5

Result description: Five new members were recruited to the group in 2021.

Acknowledgements

Vincent Boullet and Christian Fontaine for their skills and assistance in this work. We also acknowledge the departmental council, the SPL EDDEN, the national park, the botanical garden, and of course, the volunteers and numerous ONGs such as Plant ali, AVE2M, APN, working on the field in habitat restoration and the safeguarding of local plants and habitats. On Mauritius, the MIPSG wishes to acknowledge all partners working on species and ecosystems conservation (National Parks and Conservation Service, Forestry Service, Mauritius Herbarium, University of Mauritius, CIEL group, Ebony Forest, Medine Group, Air Mauritius, European Union, British High Commission, UNDP, BIOPAMA, WIOSAP, CEPF, BGCI, Conservatoire Botanique National de Brest (France), Durrell Wildlife Conservation Trust (UK), Missouri Botanical Garden (US)) and in Rodrigues (Forestry Service, François Leguat Reserve, European Union, UNDP, Mauritius Commercial Bank, Australian High Commission, Air Mauritius, Philadelphia Zoo and Chester Zoo), among others.







Bois Pasner (*Zanthoxylum paniculatum*) was, for the first recorded time ever, successfully propagated by graft in Rodrigues
Photos: Alfred Begue



Summary of achievements

Total number of targets 2021–2025: 2

Geographic regions: 2 Africa

Actions during 2021:

Assess: 1 (KSR 6)
Network: 1 (KSR 2)

Overall achievement 2021–2025:



2 (100%)

Not initiated | On track | Achieved

2021 Report

IUCN SSC Medicinal Plant Specialist Group





CO-CHAIR
Danna Leaman
Independent consultant; Research Associate, Canadian Museum of Nature, Ottawa, Ontario, Canada

CO-CHAIR
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RED LIST AUTHORITY COORDINATOR
Danna Leaman
Independent consultant; Research Associate, Canadian Museum of Nature, Ottawa, Ontario, Canada

NUMBER OF MEMBERS
104

SOCIAL MEDIA AND WEBSITE
Twitter: **MPSG@PlantSsc**
Website: https://www.iucn.org/our-union/commissions/group/iucn-ssc-medicinal-plant-specialist-group

Mission statement

The Medicinal Plant Specialist Group (MPSG) is a global network of specialists contributing within our own institutions and in our own regions, as well as worldwide, to the conservation and sustainable use of medicinal plants. The MPSG was founded in 1994 to increase global awareness of conservation threats to medicinal plants, and to promote sustainable use and conservation action.

Projected impact 2021–2025

A significant increase in knowledge of the conservation status of priority species of medicinal and aromatic plants, planning and actions to conserve and sustainably use these species, and broader industry and consumer awareness of and participation in the conservation of threatened species.

Targets 2021–2025

ASSESS

T-001 Complete global assessments of all North American medicinal plant species.

PLAN

T-004 Contribute technical expertise to policy development and implementation for medicinal plant conservation and sustainable use.

ACT

T-005 Contribute to sustainable use of priority species of medicinal plants.

NETWORK

T-002 Maintain six formal partnerships providing in kind support to MPSG targets 2021–2025.

T-003 Expand capacity for applying IUCN assessment tools within MPSG membership.

COMMUNICATE

T-006 Contribute to the 19th meeting of the Conference of the Parties to CITES (CITES CoP19) and 15th meeting of the Conference of the Parties to the Convention on Biological Diversity (CBD CoP15) side events.

Activities and results 2021

ASSESS

Red List

T-001 (KSR 6)

Number of new global Red List assessments completed: 93

Result description: Initial progress has been made on potentially threatened species within this group. Ninety-three assessments were completed in 2021, bringing the total number for this project up to 161. The remainder is slated for automated assessment in 2023 with a review workshop to occur at a date yet to be determined.

PLAN

Policy

T-004 (KSR 9)

Number of policies where SSC members provided technical input: 3

Result description: (1) CITES Non-detriment Finding online training is based on documents co-authored by MPSG: https://www.9steps-cites-ndf.org; (2) CBD Global Strategy for Plant Conservation: the FairWild Standard, of which MPSG was a co-creator, continues to be a significant contributor to the achievement of Target 12: All Wild Harvested Plant-based Products Harvested Sustainably (https://www.cbd.int/doc/publications/cbd-ts-95-en-lr.pdf),



Baobab (*Adansonia digitata* L.), native to drier parts of tropical and Southern Africa. The IUCN Red List status of this species has not yet been assessed. In 2021, the Medicinal Plant SG evaluated the potential for sustainable wild harvest of this species in Ghana and Burkina Faso using a risk analysis matrix, developed to support the FairWild Standard certification scheme
Photos: pxhere (tree) and T.K. Naliaka - Wikicommons (fruit with seeds)



as well as contribute to the delivery of the CBD's post-2020 Global Biodiversity Framework; (3) CITES Medicinal and Aromatic Plants agenda item: issues of the conservation and sustainable use of medicinal and aromatic plants are discussed and input provided to CITES CoP19 (November 2022), a Non-detriment findings (NDF) workshop in 2023 and the Plants Committee meetings.

ACT

Technical advice

T-005 (KSR 11)

Number of sustainable use practices supported: 3

Result description: MPSG contributed to further development and implementation of the FairWild Standard for Sustainable Wild Collection; development of a Sustainability Toolkit for the botanical herbs industry, supporting this initiative of the Sustainable Herbs Program of the American Botanical Council; application of the FairWild Standard to a broader scope of taxa (including wild-harvested fungi), and landscapes.

NETWORK

Capacity building

T-003 (KSR 2)

Number of people trained in assessment tools: 3

Result description: One MPSG member was trained in Red List assessment, active in South Asia; one MPSG member was trained in Conservation Planning; one MPSG member is engaged in assessing climate change vulnerability.

Synergy

T-002 (KSR 1)

Number of 'in kind' partnerships established and maintained: 6

Result description: The ABQ BioPark partnership (via SSC) advanced Red List assessments globally; the FairWild Foundation partnership (via MOU) advanced work on sustainable use of wild-harvested medicinal plants globally; the NatureServe partnership (informal) advanced Red List assessment of North American medicinal flora; the TRAFFIC partnership (informal) advanced work on Red List assessment and sustainable use of CITES-listed and other medicinal plant species in international trade; the United Plant Savers partnership advanced work on Red List assessment and sustainable use of North American medicinal plant species and communication of results; the Sustainable Herbs Program (American Botanical Council) advanced work on sustainable use via development of an industry toolkit.

Acknowledgements

We thank the following individuals, donors and other organisations for support during this quadrennium: New Mexico BioPark Society/Albuquerque BioPark for employing a full-time Red List assessor (who has so many other amazing skills) and for choosing to focus on medicinal plants; NatureServe US for contributions to and partnership in conservation status assessments of medicinal plants in North America; the FairWild Foundation for engaging the expertise of the Medicinal Plant Specialist Group in evaluating the risk/vulnerability of commercially harvested medicinal plants to over-harvest, as well as employing our other technical expertise; TRAFFIC International for support in developing and implementing projects on sustainable use of threatened species of medicinal plants, CITES Non-detriment Finding guidance, and launching the Wildcheck initiative; Dr Uwe Schippmann for creating and maintaining the MAPROW database that is central to much of our work; and our far-flung members who persevere in efforts to conserve and sustainably use medicinal plants.

Summary of achievements

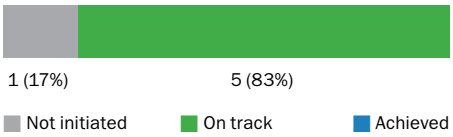
Total number of targets 2021–2025: 6

Geographic regions: 4 Global, 1 America

Actions during 2021:

Assess: 1 (KSR 6)
Plan: 1 (KSR 9)
Act: 1 (KSR 11)
Network: 2 (KSR 1, 2)

Overall achievement 2021–2025:



IUCN SSC Mediterranean Plant Specialist Group



CHAIR
Bertrand de Montmollin
Rue Charles-Knapp 30, 2000 Neuchâtel, Switzerland

RED LIST AUTHORITY COORDINATOR
Errol Véla
Université de Montpellier, Montpellier, France

NUMBER OF MEMBERS
45

Mission statement

The Mediterranean Plant Specialist Group works to advance Mediterranean plant conservation through: implementation of field conservation projects for Critically Endangered Mediterranean plants with authorities and local populations; identification of Important Plant Areas in Mediterranean countries; raising the plant conservation profile in the Mediterranean; networking with botanists and conservationists; sharing best practices in plant conservation; education and raising awareness of the public and stakeholders at regional, national and local levels.

Projected impact 2021–2025

The objective of the Mediterranean Plant Specialist Group (MPSG) for this quadrennium is to implement *in situ* and *ex situ* conservation actions for at least 50 taxa that are in one of the highest IUCN Red List threat categories (Critically Endangered and Endangered), so as to ensure their long-term conservation, if possible, in their natural environment. Their threat categories should thus be improved in the long term.

Targets 2021–2025

ASSESS

T-001 Conduct global Red List assessment of five Mediterranean endemic plant species by year.

T-005 Publish scientific articles on plant conservation.

T-007 Produce a list of Mediterranean restricted range endemic plant taxa not yet assessed and potentially threatened (by country).

T-008 Conduct a regional Red List for *Psammophilus* taxa.

T-009 Identify plant Key Biodiversity Areas (KBAs).

T-010 Promote and establish national Red Lists for plants.

PLAN

T-011 Establish plant micro-reserves.

T-012 Establish plant species conservation plans.

ACT

T-013 Implement *in situ* conservation actions.

T-014 Implement *ex situ* conservation actions.

T-015 Provide technical consultations to support conservation actions.

T-016 Support sustainable use practices.

NETWORK

T-002 Establish and maintain partnerships with other networks.

T-003 Improve the geographic coverage of MPSG members (at least one member per country).

T-004 Collaborate with IUCN offices, National or Regional Committees.

COMMUNICATE

T-017 Create and maintain a MPSG website.

T-018 Organise the Mediterranean Plant Conservation Week every second year.

T-019 Present communications on Mediterranean plant conservation.

T-020 Establish a photo database for threatened or rare Mediterranean endemic plants.

Activities and results 2021

ASSESS

Planning

T-009 (KSR 6)

Number of plant KBAs identified or modified: 4

Result description: Four new plant KBAs were identified and delineated in Jordan.

Red List

T-001 (KSR 6)

Number of new global Red List assessments completed: 6



Seed bank for rare and threatened plants of Crete at the Mediterranean Agronomic Institute of Chania (Crete)
Photo: MIC/Louis-Marie Préau

Lotus tetraphyllus L.,
an endemic plant of Balearic Islands
Photo: MPSG/B. de Montmollin



Result description: Six new global Red List assessments were submitted but have not yet been accepted.

T-010 (KSR 7)

Number of plant national Red Lists initiated or maintained: 1

Result description: A national plant Red List was initiated in Greece.

Research activities

T-005 (KSR 5)

Number of research projects completed or supported by SSC members per taxonomic group and region: 3

Result description: Three publications on Mediterranean plant conservation projects were produced by MPSG members.

PLAN

Planning

T-011 (KSR 8)

Number of plant micro-reserves established: 4

Result description: Four plant micro-reserves were established in Lebanon.

T-012 (KSR 8)

Number of conservation plans/strategies developed: 6

Result description: Six plant conservation plans were initiated (Crete, Sardinia).

ACT

Conservation actions

T-013 (KSR 10)

Number of threatened species benefiting from *in situ* conservation actions: 5

Result description: Five species are benefiting from *in situ* conservation actions (Crete, Sardinia).

T-014 (KSR 10)

Number of threatened species benefiting from *ex situ* conservation action: 8

Result description: Eight species are benefiting from *ex situ* conservation actions.

Technical advice

T-015 (KSR 10)

Number of technical consultations provided to support conservation actions: 6

Result description: Six consultations were provided to support conservation actions.

NETWORK

Membership

T-003 (KSR 2)

Number of SSC members recruited: 6

Result description: Six new members were accepted.

Synergy

T-002 (KSR 1)

Number of in kind partnerships established and maintained: 2

Result description: We increased our partnership with the Critical Ecosystem Partnership Fund (CEPF). A partnership was initiated with the Network of Mediterranean Plant Conservation Centres (GENMEDA).

T-004 (KSR 3)

Number of collaborations: 0

Result description: We regularly collaborate with the IUCN Centre for Mediterranean Cooperation.

COMMUNICATE

Scientific meetings

T-018 (KSR 12)

Number of scientific events coordinated: 1

Result description: We organised the 3rd Mediterranean Plant Conservation Week (Crete, September 2021).

T-019 (KSR 12)

Number of presentations delivered in scientific events: 15

Result description: Fifteen (15) presentations were delivered on Mediterranean plant conservation in scientific events.

Acknowledgements

Special thanks to: (1) CEPF Med (Critical Ecosystem Partnership Fund for the Mediterranean Hotspot) for its financial support and commitment to the conservation of the Mediterranean flora; (2) the MAICh (Mediterranean Agronomic Institute of Chania, Crete) for its technical and logistical support and enthusiasm; (3) the Hortus Botanicus Karalitanus (Botanical Garden of the University of Cagliari, Sardinia) for its scientific and technical support; (4) the MAVA Foundation for its financial support in many projects.

Summary of achievements

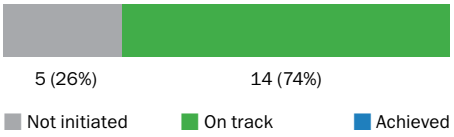
Total number of targets 2021–2025: 19

Geographic regions: 19 Global

Actions during 2021:

Assess: 4 (KSR 5, 6, 7)
Plan: 2 (KSR 8)
Act: 3 (KSR 10)
Network: 3 (KSR 1, 2, 3)
Communicate: 2 (KSR 12)

Overall achievement 2021–2025:



IUCN SSC Orchid Specialist Group





CO-CHAIR
Michael F. Fay
Royal Botanic Gardens, Kew, UK

CO-CHAIR
Amy Hinsley
University of Oxford, Oxford, UK

RED LIST AUTHORITY COORDINATOR
Hassan Rankou
Royal Botanic Gardens, Kew, UK

NUMBER OF MEMBERS
145

SOCIAL MEDIA AND WEBSITES
Facebook: IUCN SSC Orchid Specialist Group
Instagram: @orchidspecialistgroup
Twitter: @IUCN_Orchids
Websites: https://www.orchidspecialistgroup.com; https://www.iucn.org/ssc-groups/orchids-sg/plants-fungi/orchid-specialist-group; https://globalorchidtrade.wixsite.com/home/orchids-trade

Mission statement

Orchidaceae are the largest family of flowering plants, and they occur in a wide range of ecosystems and habitats. A charismatic group, many species are important in horticulture. Habitats of orchids are, however, threatened throughout the world, and the Orchid Specialist Group (OSG) is dedicated to their conservation and sustainable use.

Projected impact 2021–2025

By the end of 2025, the OSG will have made significant progress towards addressing some key gaps in baseline knowledge related to orchid conservation. This includes assessing the conservation status of at least 750 species and completing targeted assessments relating to species in *ex situ* collections, threats from trade and changes in phenology. We will have used these data to develop policy recommendations and communication strategies to improve regulation of orchid trade and to develop strategies for *ex situ* conservation of the family.

Targets 2021–2025

ASSESS

T-001 Complete global Red List assessments of 750 species in the family Orchidaceae by 2025.

T-009 Create a global *ex situ* collections list for orchids.

T-010 Develop a list of species in active commercial trade to underpin prioritisation of future work, including Red Listing.

T-013 Produce baseline reports on three under-investigated commercial orchid trades: Europe's edible salep orchid trade, Nepal's medicinal orchid trade, and Indonesia's ornamental lady slipper orchid trade.

T-014 Develop a phenological assessment using herbarium and related data to establish a baseline and shifts, if any, for native orchids including taxa with specific pollinator requirements and pollinator generalists in the North American Region.

T-015 Create a baseline report of latitudinal shifts for the invasive orchid *Zeuxine strateumatica* in the continental USA.

PLAN

T-016 Compile sequence data for 75% of orchid genera in the Indo-Burma Biodiversity Hotspot.

ACT

T-011 Develop code of conduct for orchid hobbyist societies to discourage illegal trade.

NETWORK

T-002 Complete induction of two (or more) additional Red List Authorities (RLA) for the Orchid Specialist Group by 2022.

T-003 Organise and hold IOCC 8, the 8th International Orchid Conservation Congress (2023 or 2024).

T-005 Nominate and (following ratification by SSC) complete induction of new Co-Chair for Orchid Specialist Group.

T-008 Organise and coordinate an *ex situ* workshop at the IOCC 8, the 8th International Orchid Conservation Congress (2023 or 2024).

T-012 Expand trade group to five new countries where commercial orchid trade is common.

COMMUNICATE

T-004 Produce two (or more) newsletters per year for OSG.

T-006 Present the talk 'Orchid Conservation in the 21st Century: What can the Orchid Specialist Group do?' at (virtual) World Orchid Conference in Taiwan.

T-007 Develop and launch stand-alone website for the Orchid Specialist Group.

Activities and results 2021

ASSESS

Red List

T-001 (KSR 6)

Number of new global Red List assessments completed: 174

Result description: In 2021, 174 global assessments (nine Critically Endangered, 47 Endangered, 42 Vulnerable, 16 Near



Anacamptis pyramidalis (pyramidal orchid; France) is a widespread European orchid, that often forms large colonies when grassland is managed sympathetically
Photo: Michael F. Fay

Threatened, 36 Least Concern, 24 Data Deficient) were added, 98 of which are for species from Africa/Madagascar. We expect this number to climb in subsequent years of the quadrennium as a result of the appointment of regionally focused RLAs (see target T-002). Thus, we are on track to reach the target by the end of 2025.

Research activities

T-010 (KSR 5)

Number of research projects completed or supported by SSC members per taxonomic group and region: 0

Result description: The OSG Trade subgroup held a meeting to discuss the listing and has begun to develop a list of selection criteria, as well as necessary information that must be collected for each species. Data collection for edible orchids has started.

T-013 (KSR 5)

Number of research projects completed or supported by SSC members per taxonomic group and region: 0

Result description: A preliminary report has been prepared for Indonesia; data collection is underway in Nepal and the Eastern Mediterranean.

T-014 (KSR 5)

Number of research projects completed or supported by SSC members per taxonomic group and region: 1

Result description: Our approach begins with our appreciation of the northern regions of Canada and the continental US (Alaska only), orchid taxa already reported from these regions, their pollination systems, and the pollinator families in the North including Diptera, Hymenoptera and Lepidoptera. Because the presence of an existing pollinator system is critical to the success or possible adaptation of any natural movement of orchids from South to North, we begin with a literature review of what has been published about pollinators and their conservation issues in the North/Arctic/High Arctic of North America.

PLAN

Planning

T-016 (KSR 8)

Proportion of genera with sequence data: 50%

Result description: We have already attained 50% coverage of all Indo-Burma Biodiversity Hotspot genera, and the next 25% will be sequenced over the course of the next two years in collaboration with members of the OSG Asia Subgroup.

ACT

Conservation actions

T-011 (KSR 10)

Number of technical documents provided to support conservation actions: 0

Result description: Work with orchid societies in four countries was carried out in November and December to investigate receptiveness of societies to a code of conduct, and trial potential text.

NETWORK

Capacity building

T-002 (KSR 2)

Number of people trained in assessment tools: 6

Result description: In addition to the RLA Coordinator, we now have RLAs based in Africa, Asia, Australasia, Madagascar, North American and Caribbean, and South America, and induction is on track. They are all now registered as RLAs with the IUCN Red List Unit.

T-005 (KSR 2)

Number of people trained in management skills: 1

Result description: Co-Chair Amy Hinsley was ratified by SSC and is now fully functioning in the role.

T-008 (KSR 2)

Number of people trained in other fields: ongoing.

Result description: Planning for the *ex situ* workshop is at an early stage, since the 8th International Orchid Conservation Congress won't take place until 2024.

Membership

T-012 (KSR 2)

Number of SSC members recruited: 3

Result description: New members recruited from Bhutan, Turkey and Viet Nam.

Synergy

T-003 (KSR 2)

Congress successfully hosted: Ongoing.

Result description: Planning is still at an early stage. Given the ongoing situation with COVID-19, the congress is likely to take place in 2024 (not 2023).

COMMUNICATE

Communication

T-004 (KSR 13)

Number of digital communication outputs developed in relation to specific taxonomic groups: 3

Result description: Newsletter issues released in March, May and September 2021.

T-006 (KSR 13)

Number of SSC members' presentations developed in relation to specific taxonomic groups: 1

Result description: Co-Chair Mike Fay presented a talk on the work of the Orchid Specialist Group at the World Orchid Congress.

T-007 (KSR 13)

Number of digital communication outputs developed in relation to specific taxonomic groups: 1

Result description: The stand-alone website for the Orchid Specialist Group was launched in 2021, and is now being regularly updated with news items, newsletters and other publications, etc.

Summary of achievements

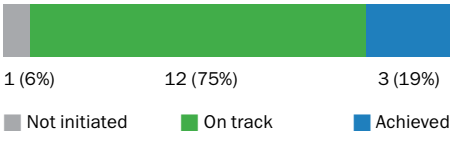
Total number of targets 2021–2025: 16

Geographic regions: 11 Global, 2 America, 2 Asia, 1 Europe

Actions during 2021:

Assess: 4 (KSR 5, 6)
Plan: 1 (KSR 8)
Act: 1 (KSR 10)
Network: 5 (KSR 2)
Communicate: 3 (KSR 13)

Overall achievement 2021–2025:



2021 Report

IUCN SSC Palm Specialist Group



CHAIR
Thomas Couvreur
Institut de Recherche pour le Développement, UMR DIADE, Montpellier, France

RED LIST AUTHORITY COORDINATOR
Ariane Cosiaux
Institute of Geography and Sustainability, University of Lausanne, Lausanne, Switzerland

NUMBER OF MEMBERS
22

Mission statement

To conserve palms by assessing the threats that they face and developing programmes to protect palm species for the future.

Projected impact 2021–2025

We envision to have increased Red Listing of palm species worldwide, in particular species with Least Concern status.

Targets 2021–2025

ASSESS

T-001 Expedite Red Listing of Least Concern palms.

T-002 Red List western Ecuadorian palm species.

T-003 Red List Indian palms for Indian palm website.

T-004 Generate population and distribution data to support Red Listing of Brazilian palms.

T-006 Rapid inventory of palms, especially rattans, in National Parks of Côte d'Ivoire using UAV (drone).

T-007 Red List New Guinea palms.

T-008 Red List Vanuatu palm species.

T-009 Red List Hispaniolan *Coccothrinax* palms.

ACT

T-005 Ecology and phenology of the threatened rattan species *Eremospatha dransfieldii* in Côte d'Ivoire and Ghana.

Activities and results 2021

ASSESS

Red List

T-001 (KSR 5)

Number of new global Red List assessments completed: 100

Result description: Together with Botanic Gardens Conservation International (BGCI), we have been compiling Least Concern species of palms. This will continue in 2022.

T-002 (KSR 6)

Number of new global Red List assessments completed: 0

Result description: The student has compiled the data and undertaken the preliminary assessments. We have yet to undertake the final assessments for submission to IUCN. These will be planned for 2022.

T-004 (KSR 6)

Number of global Red List reassessments completed: 0

Result description: This project is moving forward (though because of COVID-19, it has been slow), and we expect to submit some assessments in 2022.

T-007 (KSR 6)

Number of global Red List reassessments completed: 72

Result description: Assessments for 72 species of New Guinean palm have been published on the IUCN Red List in 2021, primarily through the work of Tiberius Jimbo (Papua New Guinea Forest Research Institute) and the Global Tree Assessment led by BGCI, supported by the Palms of New Guinea Project at the Royal Botanic Gardens, Kew. Georeferenced occurrence data and preliminary assessments have been compiled for all remaining species; with our ongoing collaboration, we anticipate many more formal submissions to the Red List in due course.

T-008 (KSR 6)

Number of global Red List reassessments completed: 11

Result description: To date, 11 species have been assessed. The remaining ones will be done soon.

Geonoma venosa, a palm species endemic to north western Ecuador, part of the Choco rain forest. It is Critically Endangered, only known from one locality in the Bosque Protector Los Cedros
Photo: Thomas Couvreur



Attalea colenda, a near endemic palm from western Ecuador
Photo: Thomas Couvreur





The scaly fruits of *Raphia gabonensis*, an endemic and Endangered species to Gabon
Photo: Thomas Couvreur

T-009 (KSR 5)

All Hispaniolan *Coccothrinax* assessed: 0

Result description: The team is searching for funding. No results yet.

Research activities

T-006 (KSR 5)

Number of scientific publications about species research that acknowledge SSC affiliation: 0

Result description: A manuscript entitled 'The palms flora of West Africa: Côte d'Ivoire, Ghana, Togo and Benin' is in progress.

ACT

Conservation actions

T-005 (KSR 11)

Number of threatened species benefited directly or indirectly by sustainable use programmes: 1

Result description: We have collected rhizome of *Eremospatha dransfieldii* for nursery purposes. Awareness was raised in local communities in order to observe the phenology that will help us to get the fruits.

Acknowledgements

We thank the SSC Internal Grants scheme for funding on the Red Listing of West Ecuadorian palms. This research is also partly funded by an ERC Consolidator Grant (GLOBAL).

Summary of achievements

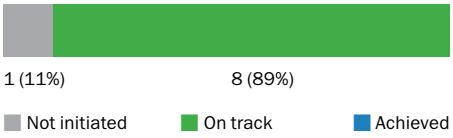
Total number of targets 2021–2025: 9

Geographic regions: 1 Global, 2 Africa, 3 America, 1 Asia, 2 Oceania

Actions during 2021:

Assess: 7 (KSR 5, 6)
Act: 1 (KSR 11)

Overall achievement 2021–2025:



IUCN SSC Seagrass Species Specialist Group





SOCIAL MEDIA AND WEBSITE
Twitter: @ISeagrass

CO-CHAIR
Brooke Sullivan
University of Washington, Seattle, Washington, US

CO-CHAIR
Frederick T. Short
University of New Hampshire, Durham, New Hampshire, US

RED LIST AUTHORITY COORDINATOR
Brooke Sullivan
University of Washington, Seattle, Washington, US

NUMBEMEMBERS
72

Mission statement

The Seagrass Species Specialist Group (SSSG) contributes to and encourages seagrass science and conservation, with the goal of protecting seagrass species biodiversity worldwide and preserving the functions and values of seagrass habitat, including its role in protecting threatened species that depend on seagrasses for their survival.

Projected impact 2021–2025

Ex situ research is urgently needed for seagrass in all bioregions. Systemic impacts to global seagrass communities, including negative feedback from globalisation and climate change, have been documented for over 100 years. Increased access to low-impact habitat mapping and restoration strategies (for instance GIS and drones) has increased global access to the basic information needed to conserve and recover regional seagrass assets. Seagrass habitat mapping is also a powerful tool for recognising stochastic and chronic patterns in seagrass population size and extents. There is marked increased research of seagrass broadly, including topics of restoration and conservation in all bioregions of the world.

Targets 2021–2025

ASSESS

T-004 Complete 10 global Red List seagrass species assessments each year for four years (40 in total).

PLAN

T-007 Develop a global seagrass conservation plan prioritising globally threatened seagrasses.

ACT

T-006 Offer an annual consultation to support conservation actions to organisations and institutions globally engaged with seagrass conservation.

NETWORK

T-001 Train two group members as Red List assessors.

T-002 Establish at least one formal partnership that will provide financial and institutional support to the Seagrass Species Specialist Group.

T-003 Reach out to 150 existing and former members to strengthen networking, participation in meetings, engage global support and commitment to SSSG post-pandemic.

T-008 Train six bioregional team leaders in IUCN Green Status assessment.

COMMUNICATE

T-005 Activate Twitter as a tool for communicating weekly successes and recruiting members in global seagrass biodiversity and conservation.

Activities and results 2021

ASSESS

Red List

T-004 (KSR 6)

Number of global Red List reassessments completed: 14

Result description: Assessments completed for the following: *Thalassia testudinum*, *Ruppia mexicana*, *Ruppia didyma*, *Halodule beaudettei*, *Halodule emarginata*, *Halophila engelmannii*, *Halophila baillonii*, *Syringodium filiforme*, *Halophila beccarii*, *Posidonia australis*, *Heterozostera nigricaulis*, *Heterozostera polychlamys*, *Heterozostera tasmanica* and *Heterozostera chilensis*.

PLAN

Planning

T-007 (KSR 8)

Number of conservation plans/strategies developed: 0

Result description: Considerations for integrating the Project Seagrass 'SeagrassSpotter' tool and general membership in a publication.

ACT

Technical advice

T-006 (KSR 10)

Number of technical consultations provided to support conservation actions: 1

Result description: In 2021, we provided support for a Sri Lankan seagrass study, funded for EUR 50,000.



Seagrass in the coastal waters in Tanzania, East Africa. Including *Thalassia hemprichii* (foreground) and *Thalassodendron ciliatum* (extending off shore)
Photo: Frederick Short

Seagrass, a feeding area for nurse sharks in Caye Caulker, Belize, Caribbean. *Thalassia testudinum*, *Syringodium filiforme* and *Halodule wrightii*
Photo: Frederick Short





Seagrass growing with surf kelp on the open Pacific Ocean side of Baja Peninsula, Mexico. *Phyllospadix torreyi*
Photo: Frederick Short

NETWORK

Capacity building

T-001 (KSR 2)

Number of people trained in assessment tools: 2

Result description: We trained two new members to assist with GIS and species data collection.

T-008 (KSR 2)

Number of people trained in assessment tools: 2

Result description: Green Status species assessment information will be provided to the general membership in January and August with specific trainings.

Membership

T-003 (KSR 2)

Number of SSC members recruited: 100

Result description: We held one annual meeting of members.

COMMUNICATE

Communication

T-005 (KSR 12)

Twitter posts: 93

Result description: From July–December 2021 we posted 69 tweets, and this number and impressions are growing.

Summary of achievements

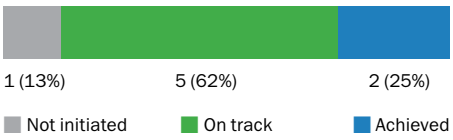
Total number of targets 2021–2025: 8

Geographic regions: 8 Global

Actions during 2021:

Assess:	1 (KSR 6)
Plan:	1 (KSR 8)
Act:	1 (KSR 10)
Network:	3 (KSR 2)
Communicate:	1 (KSR 12)

Overall achievement 2021–2025:



IUCN SSC Seed Conservation Specialist Group







CO-CHAIR
Marian M. Chau
Terraformation, Kailua-Kona, Hawai'i, US. Kalehua Seed Conservation Consulting, Hawai'i, US

CO-CHAIR
Uromi Manage Goodale
Guangxi University, Nanning, China

DEPUTY CHAIR
Dustin Wolkis
National Tropical Botanical Garden, Kalaheo, Hawai'i, US

NUMBER OF MEMBERS
100

SOCIAL MEDIA AND WEBSITE
Facebook: IUCN Seed Conservation Specialist Group
Twitter: @IUCN_Seeds
Website: **https://seedconservationsg.org/**

Mission statement

The mission of the Seed Conservation Specialist Group (SCSG) is to promote seed conservation by providing a network for knowledge sharing in different ecosystems around the world, and aiding in prioritisation, capacity building, and development of best practices.

Projected impact 2021–2025

By the end of 2025, we expect that the network established by SCSG in the last quadrennium will continue to identify gaps, not only in expertise, but also in the seed conservation of vulnerable species. We are intentionally prioritising diversity and expanding our efforts to encourage improvements to seed banking processes in underrepresented IUCN statutory regions of Africa, Eastern Europe, North and Central Asia, Meso- and South America, Oceania, and East Asia. Through gap assessments, guidelines for seed conservation, other publications, and the growth of our network, we hope that our efforts will contribute towards at least a 15% increase in species from each ecological region being conserved for the future through effective seed banking.

Targets 2021–2025

ASSESS

T-006 Complete and publish a regional and topical gap analysis of seed conservation expertise.

T-007 Assess Red List data on *ex situ* actions for plant species (prioritising those with urgent needs), and work with taxonomic and regional plant Specialist Groups/Red List Authorities to improve inclusion of seed conservation in Red List assessments.

T-008 Improve the existing Botanic Gardens Conservation International PlantSearch database by seeking SCSG members to help update data.

T-009 Using the Botanic Gardens Conservation International PlantSearch database, conduct a gap analysis on taxonomic representation in seed conservation.

T-010 Assess the feasibility and potential for a global database on seed conservation research, best practices and needs, prioritising threatened species.

T-011 Increase visibility of SSC by including SSC affiliation in relevant publications by SCSG members.

ACT

T-012 Create IUCN Guidelines on Seed Conservation in English, linking to existing resources created by SCSG member and other organisations.

T-013 Begin translating the Guidelines on Seed Conservation into other languages.

NETWORK

T-001 Actively recruit SCSG members, especially from underrepresented regions and Key Biodiversity Areas, to achieve global membership.

T-002 Increase engagement of our members by creating Seed Conservation Specialist Group (SCSG) committees for quadrennium targets.

T-003 Explore fundraising options and develop a plan to start a Non-Governmental Organisation.

T-004 Work with the Plant Conservation Committee to identify a Focal Point for Seed Conservation in seed-plant and *ex situ* related Specialist Groups and Red List Authorities.

T-005 Expand the Seed Conservation Directory of Expertise to include underrepresented regions.

COMMUNICATE

T-014 Create the SCSG Newsletter.

T-015 Improve the SCSG website.

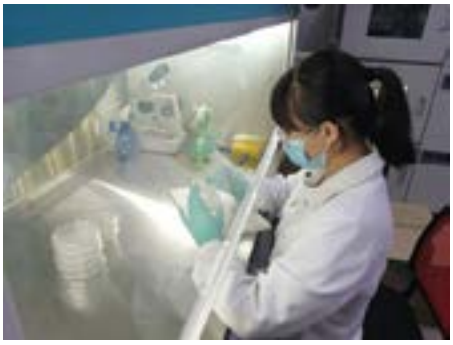
T-016 Increase the SCSG web and social media presence.

T-017 Offer annual SCSG Membership meetings within broader scientific conferences, or as virtual meetings.

Seed capsules of pua kala (*Argemone glauca*), a native Hawaiian plant
Photo: Marian Chau



Guangxi University masters student Rong Huang collecting *Ficus* seed germination data
Photo: Rong Huang



Emily Saling harvesting *Polyscias racemosa* fruit in McBryde Garden, National Tropical Botanical Garden
Photo: Dustin Wolkis



Activities and results 2021

ASSESS

Research activities

T-006 (KSR 5)

Number of scientific publications about species research that acknowledge SSC affiliation: 0

Result description: In 2021, we developed analytical expertise and a core operations strategy for the project and finalised the experimental design for a survey on seed conservation expertise.

T-011 (KSR 5)

Number of scientific publications about species research that acknowledge SSC affiliation: 13

Result description: In 2021, we tracked 13 publications in which authors provided SCSG and SSC affiliation. Although we have reached our goal of 10 publications, we will continue to promote and track this goal throughout the quadrennium.

NETWORK

Membership

T-001 (KSR 2)

Number of SSC members recruited: 0

Result description: In 2021, we did an analysis of SSC and SCSG membership by statutory regions, identified regional membership gaps, and devised a recruitment strategy to enhance diversity and representation within our membership.

Synergy

T-002 (KSR 3)

Number of committees: 0

Result description: In 2021, we developed a committee framework aligned with the components of the species conservation cycle and recruited a core volunteer group from last quadrennium's membership. In 2022, we will expand the committees from the new quadrennium's membership.

T-004 (KSR 3)

Number of Seed Conservation focal points designated: 0

Result description: In 2021, we coordinated with Cátia Canteiro, Plant and Fungi Conservation Coordinator, and made plans to host a webinar in 2022 for other SSC Specialist Groups, to recruit Focal Points for Seed Conservation.

T-005 (KSR 3)

Number of new countries represented in the directory: 0

Result description: In 2021, we established a framework for new people to join the Seed Conservation Directory of Expertise and made this publicly available. In 2022, we will conduct a targeted outreach campaign to improve representation and diversity within the directory.

T-005 (KSR 3)

Number of new directory participants: 0

Result description: In 2021, we established a framework for new people to join the Seed Conservation Directory of Expertise and made this publicly available. In 2022, we will conduct a targeted outreach campaign to improve representation and diversity within the directory.

COMMUNICATE

Communication

T-014 (KSR 12)

Number of Species e-bulletin, Save Our Species newsletter, SSC Groups' newsletter editions produced: 1

Result description: In 2021, we published the inaugural issue of the SCSG Newsletter on our website and conducted an outreach campaign on social media. The Newsletter page on our website has been viewed over 200 times. We also translated it into Spanish and Portuguese.

T-015 (KSR 12)

Maintain number of annual visitors to the SCSG website: 1,162

Result description: In 2021, we had 1,162 unique visitors to the SCSG website.

T-015 (KSR 12)

Maintain number of annual page views on the SCSG website: 2,241

Result description: In 2021, we had 2,441 page views on the SCSG website.

T-015 (KSR 12)

Add at least 1 new resource page or showcased project on the SCSG website: 1

Result description: In 2021, we created new content by adding a Newsletter page under our Resources on the SCSG website (https://seedconservationsg.org/newsletter).

T-016 (KSR 12)

Increase in social media followers: 84

Result description: In 2021, we added 49 members in our Facebook Group and 35 followers on our Twitter account.

Acknowledgements

Botanical Gardens Conservation International: we thank BGCI for serving as the Secretariat for SCSG, hosting our Directory of Expertise and contributing staff time. National Tropical Botanical Garden: we thank the National Tropical Botanical Garden for providing staff time in support of SCSG targets. Guangxi University: we thank Guangxi University for contributing staff time towards the SCSG targets. Kalehua Seed Conservation Consulting: we thank Kalehua Seed Conservation Consulting for contributing staff time towards the SCSG targets.

Summary of achievements

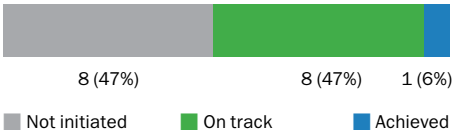
Total number of targets 2021–2025: 17

Geographic regions: 17 Global

Actions during 2021:

Assess: 2 (KSR 5)
Network: 5 (KSR 2, 3)
Communicate: 5 (KSR 12)

Overall achievement 2021–2025:



2021 Report

IUCN SSC Sonoran Desert Plant Specialist Group





CO-CHAIR
Helen Rowe
Northern Arizona University, Flagstaff, Arizona, US

CO-CHAIR
Alberto Burquez Montijo
Universidad Nacional Autónoma de México, Mexico

RED LIST AUTHORITY COORDINATOR
Linda Howard
Center for Biology and Society, Arizona State University, Arizona, US

NUMBER OF MEMBERS
23

Mission statement

The mission of the IUCN SSC Sonoran Desert Plant Specialist Group (SDPSG) is to assess the extinction risk of all Sonoran Desert plant species, educate the public about Sonoran Desert species and threats, and implement conservation plans supported by the Red Listing process.

Projected impact 2021–2025

By the end of 2025, we strive to have made substantial progress towards the ambitious agenda of assessing all Sonoran Desert species. At the same time, we expect to make progress in surveying and removing high priority invasive species through greater coordination. Conservation planning will begin concurrently with the Red List assessments on high priority species chosen through the process of prioritising Sonoran Desert plants for assessment and by working with other specialist groups to create a comprehensive list of threatened species across taxa.

Targets 2021–2025

ASSESS

T-001 Coordinate with other groups to coordinate on overlapping species.

T-002 Complete assessments for 250 Fabaceae species.

T-004 Submit three funding proposals to support assessments and expert workshops.

T-005 Complete a draft list of Fabaceae species endemic to the Sonoran Desert.

T-010 Develop threats map of the Sonoran Desert to assist in drafting assessments.

PLAN

T-008 Initiate conservation planning for threatened plant species in the Sonoran Desert using IUCN conservation planning guidance.

ACT

T-009 Map distribution and remove priority invasive plant species in the Sonoran Desert.

T-011 Advance *in situ* and *ex situ* conservation (seeds and living collections) of Critically Endangered and Endangered plants and preventive sampling of seeds of more widely distributed plant taxa.

NETWORK

T-006 Hold annual SDPSG meetings (possibly during regional meetings).

COMMUNICATE

T-003 Create and finalise logo.

T-007 Include sessions/discussion panels on the activities and deliverables of the SDPSG in the Arid Lands Symposium or other relevant regional or international meetings.

Activities and results 2021

ASSESS

Red List

T-001 (KSR 6)

Number of new global Red List assessments completed: 1

Result description: We coordinated with many groups on overlapping species, including Royal Botanic Gardens, Kew, New Mexico BioPark, and the SSC Global Tree Specialist Group.

T-002 (KSR 6)

Number of global Red List reassessments completed: 1

Result description: We have made substantive progress on drafting assessments for Fabaceae species. We hope to complete these next year and begin the process of expert review.



Coulter's lupine
Photo: Marianne Jensen



Little-leaved palo verde, Sonoran Desert
Photo: Steve Jones



Kallstroemia grandiflora
Photo: Marianne Jensen

T-004 (KSR 6)

Number of new global Red List assessments completed: 2

Result description: We applied for a National Science Foundation grant in February 2021 and a Bureau of Land Management grant in May 2021 that would have supported assessments and expert workshops.

Research activities

T-005 (KSR 5)

Number of research projects completed or supported by SSC members per taxonomic group and region: 1

Result description: We completed a draft list of Fabaceae species endemic to the Sonoran Desert.

T-010 (KSR 5)

Number of research projects completed or supported by SSC members per taxonomic group and region: 1

Result description: We have completed the initial threats map for the Sonoran Desert. We have a manual process for using the threats map in assessments and are working to automate some of this work. This will continue to be a tool that we can improve and augment.

PLAN

Planning

T-008 (KSR 8)

Number of conservation plans/strategies developed: 0

Result description: Co-chair Dr Helen Rowe participated in the SSC Species Conservation Planning Group facilitation training.

ACT

Conservation actions

T-009 (KSR 10)

Number of actions addressing major drivers/emerging threats of species or population loss: 1

Result description: In partnership with the McDowell Sonoran Conservancy and other organisations in the Central Arizona Conservation Alliance (CAZCA), we have removed priority invasive plants from over 50 acres in 2021.

NETWORK

Membership

T-006 (KSR 2)

Number of SSC members recruited: 1

Result description: We held an annual meeting in October 2021 to provide updates and discuss next steps with members and partners.

COMMUNICATE

Communication

T-003 (KSR 13)

Number of communication products using innovative tools: 1

Result description: The logo of the SDPSG has been completed.

T-007 (KSR 12)

Number of presentations delivered in scientific events: 3

Result description: We presented at the McDowell Sonoran Conservancy Parsons Field Institute Update in May 2021 and to the Arizona Native Plant Society annual meeting in November 2021. In addition, the chair hosted a workshop to engage regional natural resource managers, botanists and researchers to review the draft threats map of the Sonoran Desert.

Acknowledgements

We'd like to thank Clay Meredith at New Mexico BioPark for the development of the new rapid assessment tool and for providing us with output from the tool. We'd like to thank the McDowell Sonoran Conservancy for assistance by volunteers on mapping species and assistance with developing the threats map. We'd like to thank students at NAU for work in drafting assessments and developing the threats map.

Summary of achievements

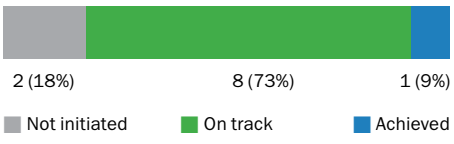
Total number of targets 2021–2025: 11

Geographic regions: 4 Global, 7 America

Actions during 2021:

Assess:	5 (KSR 5, 6)
Plan:	1 (KSR 8)
Act:	1 (KSR 10)
Network:	1 (KSR 2)
Communicate:	2 (KSR 12, 13)

Overall achievement 2021–2025:



IUCN SSC Southern African Plant Specialist Group





CO-CHAIR
Iain Darbyshire
Royal Botanic Gardens, Kew, UK

CO-CHAIR
Hermenegildo Matimele
Durrell Institute of Conservation and Ecology (DICE), University of Kent, UK; National Herbarium (LMA), Instituto de Investigação Agrária de Moçambique (IIAM), Mozambique

RED LIST AUTHORITY COORDINATOR
Lize von Staden
Nelson Mandela University, Department of Botany, Port Elizabeth, South Africa

NUMBER OF MEMBERS
42

Mission statement

To assess the conservation status of plants endemic to Southern Africa and to ensure their sustainable use and adequate protection through mainstreaming of information pertaining to threatened plants into government policies and development planning.

Projected impact 2021–2025

In the current quadrennium, the Southern African Plant Specialist Group aims to inform and enable effective conservation and land use planning through the identification of critical species and ecosystems through multi-country Red Listing programmes and the documenting of critical sites for this important biodiversity, through identifying and promoting Key Biodiversity Areas and Important Plant Areas. We will deliver targeted *in situ* and *ex situ* conservation and sustainable use programmes for species identified as at particular risk from habitat change and over-exploitation across the southern African region.

Targets 2021–2025

ASSESS

T-001 Complete assessments for 50 endemic and near endemic plant taxa in Mozambique.

T-002 Initiate assessments of ca. 100 endemic and near endemic plant taxa in Malawi.

T-003 Initiate assessments of 180 endemic and near endemic plant taxa in Namibia.

T-004 Complete assessments for 213 *Conophytum* taxa in South Africa.

T-006 Complete assessment of Important Plant Areas for Mozambique.

T-007 Complete assessment of Important Plant Areas in South Africa.

T-008 Complete Red List of Ecosystems assessment and second iteration Key Biodiversity Area (KBA) network for Mozambique.

T-018 Map ecosystem types for Namibia in preparation for Red List assessment.

T-020 Develop a priority list of Southern African threatened species for *ex situ* cultivated plant collections of recalcitrant and priority critical habitat species that can't be banked.

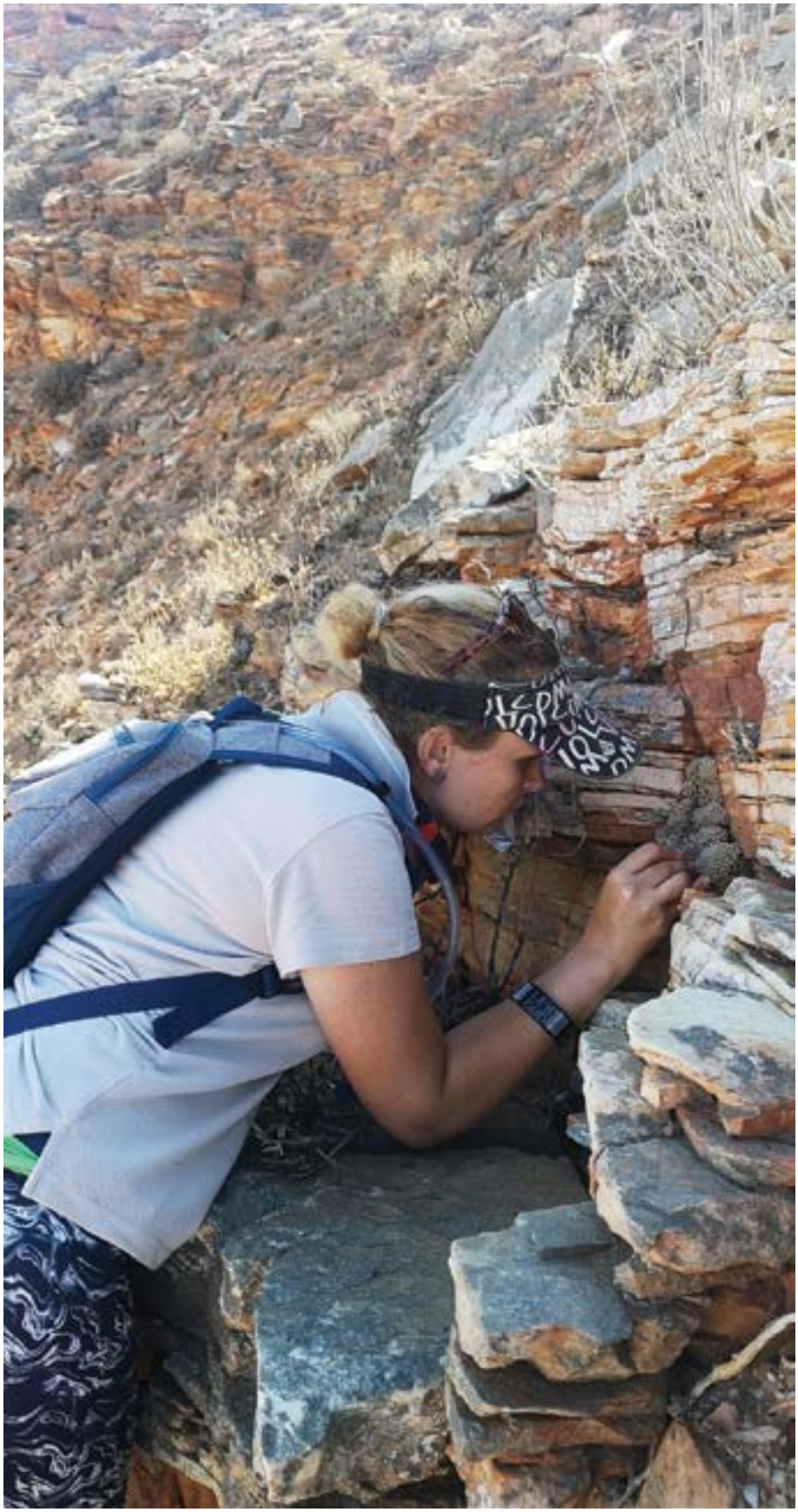
ACT

T-005 Develop a new area of work on sustainable use focusing on selected medicinal plants that are traded across borders in southern Africa.

T-010 South Africa seed banking programme: (1) develop priority list of South African threatened species for seed banking; (2) bank 1,000 seed collections of South African spp. of which 700 are new to the Millennium Seed Bank Partnership (MSBP); (3) seed bank illegally harvested succulent species – 45 target spp. and 50 spp. from habitat.

T-011 Mozambique seed banking programme: (1) develop priority list of Mozambican threatened species for seed banking; (2) bank 700 seed collections for *ex situ* conservation of which 600 are new to the MSBP.

T-012 Pilot involving citizen members of the South African Botanical Society to restore priority degraded Important Plant Areas.



Collection of seed for succulent plants experiencing significant declines due to illegal collection
Photo: Ismail Ebrahim

T-013 Develop an *in situ* conservation project on the *Icuria*-dominated coastal forests in Northern Mozambique.

T-014 Contribute to *in situ* conservation planning in the Licuati and Chimanimani Important Plant Areas of Mozambique, to support improved protection for key habitats and their species.

T-015 Develop a species recovery programme: (1) develop a template for species recovery plans; (2) implement selected species recovery projects.

COMMUNICATE

T-009 Promote citizen science monitoring via the iNaturalist platform by providing training and participating in the global City Nature Challenge and Great Southern Bioblitz events.

Activities and results 2021

ASSESS

Red List

T-001 (KSR 6)

Number of new global Red List assessments completed: 17

Result description: Seventeen assessments were published in 2021; a further 17 were reviewed and passed and are pending publication in 2022. Thirteen assessments were finalised in 2021 but are awaiting review.

Research activities

T-006 (KSR 6)

Number of new Key Biodiversity Areas confirmed in the World database of KBAs (WDKBA): 57

Result description: Fifty-seven (57) Important Plant Areas were identified, mapped and documented across Mozambique; text was submitted in November 2021 for a book that will be published in English and Portuguese in 2022. The headline results are that the sites together occupy fewer than 3% of the total land area of Mozambique, but together support important populations of over 80% of



A species of *Conophytum*, one of the most threatened genera of plants due to illegal collection
Photo: SAPSG archives

Mozambique's threatened plants. However, fewer than half of the sites are currently afforded any formal protection.

T-008 (KSR 6)

Number of Key Biodiversity Areas in the World Database of KBAs (WDKBA) updated after reassessment for species: 0

Result description: As part of the ongoing KBA assessment of Mozambique, a revised version of the mapping and description of ecosystems of Mozambique has been drafted in 2021 and is being readied for publication in 2022. When the map of ecosystems is completed, a Red List assessment of the ecosystems will be carried out.

Policy

T-007 (KSR 6)

Number of national plans incorporating Key Biodiversity Areas in their spatial planning: 0

Result description: Important Plant Area criteria have been applied nationally in South Africa, led by Kaveesha Naicker of the South African National Biodiversity Institute (SANBI) Custodians of Rare and Endangered Wildflowers (CREW) team, with over 7,700 sites initially identified as having met one or more of the criteria. Kaveesha is now working on the prioritisation of sites within this long-list to identify focal sites for monitoring and management. The results are to be published in 2022.

ACT

Conservation actions

T-010 (KSR 10)

Number of threatened species benefited directly or indirectly by sustainable use programmes: 595

Result description: Species were collected April–December 2021.

T-011 (KSR 10)

Number of threatened species benefiting from *ex situ* conservation: 27

Result description: Seed collections of 27 species: 15 species collected under the Threatened Biodiversity Hotspots Programme, and 12 species collected under the Global Tree Seed Bank Programme.

T-013 (KSR 10)

Number of threatened species benefiting from *in situ* conservation action: 3

Result description: Alice Massingue of Universidade Eduardo Mondlane has secured funding from the Mohammed Bin Zayed Fund to carry out research and conservation work on the *Icuria dunensis* forests, together with surveys of the associated Critically Endangered species *Warneckea sessilicarpa*. Fieldwork will commence in 2022. Surveys also continued at the Mulimone *Icuria* forest near the Kenmare Moma Titanium Minerals Mine, leading to the discovery of the globally threatened species *Brachystegia oblonga* and *Scorodophloeus torrei* at this important site. However, significant encroachment into the forest from local farmers was also noted and Instituto de Investigação Agrária de Moçambique (IIAM) are working with Kenmare to try to reduce this impact and better protect the remaining forest.

T-015 (KSR 10)

Number of threatened species benefiting from *in situ* conservation action: 3

Result description: A *Marasmodes undulata* recovery programme is in progress. A Silver Tree (*Leucadendron argenteum*) species recovery research project is in progress. A Mulanje Cedar (Widdringtonia whytei) and companion species restoration project is in progress. Funding is secured for the Botanical Restoration Unit.

COMMUNICATE

Communication

T-009 (KSR 13)

Number of digital communication outputs developed in relation to specific taxonomic groups: 1

Result description: As of 16 February, iNaturalist southern Africa reached 1,193,565 plant observations. These were submitted for 19,652 species by 12,263 observers with 4,906 identifiers (https://www.inaturalist.org/observations?place_id=113055&subview=map&iconic_taxa=Plantae). South Africa alone has 22,000 taxa, of which 88% are already on iNaturalist.

We successfully participated in the Great Southern Bioblitz (https://www.inaturalist.org/projects/great-southern-bioblitz-2021-southern-africa-umbrella) where City of Cape Town, Overstrand, Garden Route and eThekwini all contributed over 5,000 observations, for a southern African total of 60,753 observations by 1,000 observers, featuring over 7,238 species. Worldwide, South Africa achieved three out of the top five places in the Bioblitz. Earlier in the year we participated in the City Nature Challenge (https://www.inaturalist.org/projects/city-nature-challenge-southern-africa-2021) where five South African and two Botswana cities participated. Just under 1,900 observers contributed 113,124 observations featuring 8,155 species. In light of the COVID-19 pandemic, the City Nature Challenge was not a competition, yet Cape Town topped the global charts.

Summary of achievements

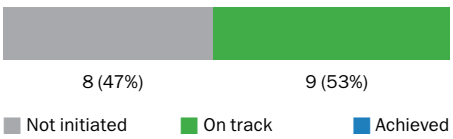
Total number of targets 2021–2025: 17

Geographic regions: 17 Africa

Actions during 2021:

Act: 3 (KSR 10)
Communicate: 1 (KSR 12)

Overall achievement 2021–2025:



IUCN SSC Temperate South American Plant Specialist Group



CHAIR
Pablo Demaio
Systematic Botany, Catamarca National University, Catamarca, Argentina

RED LIST AUTHORITY COORDINATORS
Luis Oakley
Rosario National University, Rosario, Santa Fe, Argentina

NUMBER OF MEMBERS
23

Mission statement

With more than 19,800 species of plants under the scope of the Temperate South American Plants Specialist Group (TSAPSG), and considering that the strategic plan for SSC indicates that the assessment of plants needs to be substantially enlarged to represent adequately the diversity of life, we are focusing our efforts to assess: endemic species, whose vulnerability is more likely because of their restricted distribution; wild harvested species, who are actually under different pressure of use; and trees.

Projected impact 2021–2025

We expect by the end of 2025, in collaboration with the Argentinian Society of Botany, to improve our procedures of assessment, adding new members to the Specialist Group, completing Red List assessment of at least 100 plant species, collaborating with other Specialist Groups in reviewing assessments, and starting a web page to publicise the group's activities.



Vasconcelea quercifolia
Photo: Pablo Demaio



Alnus acuminata
Photo: Pablo Demaio



Handroanthus impetiginosus
Photo: Pablo Demaio

Targets 2021–2025

ASSESS

T-002 Complete global Red List assessments of 50 species in the Family Asteraceae by 2025.

T-005 Collaborate as reviewers for global Red List assessments of other plant Specialist Groups.

NETWORK

T-001 Train two group members as Red List assessors by 2024.

T-004 Recruit at least five new members by 2025.

COMMUNICATE

T-003 Develop a Temperate South American Plant Specialist Group website by 2023.

Activities and results 2021

ASSESS

Red List

T-005 (KSR 6)

Number of new global Red List assessments completed: 19

Result description: We collaborated in reviewing 19 assessments at the request of the IUCN Global Tree Specialist Group.

Acknowledgements

We want to acknowledge Global Wildlife Conservation (Re:wild), whose financial contribution allows us to carry out assessment workshops. We also want to thank the Argentinian Society of Botany for their support and cooperation with the assessment process. Finally, we want to acknowledge the authorities and officials of the SSC for their permanent support and advice.

Summary of achievements

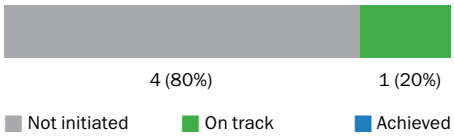
Total number of targets 2021–2025: 5

Geographic regions: 5 America

Actions during 2021:

Assess: 1 (KSR 6)

Overall achievement 2021–2025:



IUCN SSC West Asia Arabian Plant Specialist Group



CHAIR
Thuraya Said Khamis Al Sariri
Ministry of Environment and Climate Affairs, Muscat, Oman

RED LIST AUTHORITY COORDINATOR

NUMBER OF MEMBERS
25

Mission statement
Not stated.

Projected impact 2021–2025
The group aims to bring interested parties together to address the targets for plants and habitat conservation of the Global Strategy for Plant Conservation and the post-2020 Global Biodiversity Framework. This Group will help, through the involvement of experts, to investigate, develop and provide solutions for issues facing the conservation of plant species in the West Asian Arabian Region. It will agree standards, protocols and share best practices for individual countries to achieve targets for the conservation and preservation of their plant diversity, as well as build capacity of botanists and conservationists in our region.

Targets 2021–2025

ASSESS

T-003 Ensure global assessments for Arabian endemic plants and trees are made available in the IUCN Species Information Service (SIS) database.

PLAN

T-004 Apply IUCN conservation planning on a targeted set of the most threatened and flagship plant species in the West Asia and Arabian region.

T-005 Develop a report on the conservation status and strategy for conservation of crop wild relatives (CWR) in the region.

NETWORK

T-002 Carry out West Asia and Arabian region-specific online plant IUCN Red List training courses.

T-006 Increase the network capacity on communication through the West Asia and Arabian Online Plant Hub.

COMMUNICATE

T-001 Develop the West Asia and Arabian Online Plant Hub.

Activities and results 2021

NETWORK

Capacity building

T-002 (KSR 2)

Number of people trained in assessment tools: 0

Result description: We conducted a survey for all group members to know and inventory their field of experience for the different fields related to group work.

T-006 (KSR 2)

Number of people trained in communication skills: 0

Result description: We are still working to arrange for this training.

Acknowledgements
We would like to thank the IUCN Regional Office for West Asia (ROWA), Quranic Botanic Garden Qatar, the SSC Chair, Cátia Canteiro, Ehab Eid and all the members of the group for their support and cooperation.

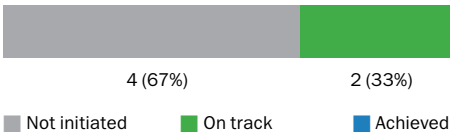
Summary of achievements
Total number of targets 2021–2025: 6

Geographic regions: 6 Asia

Actions during 2021:

Network: 2 (KSR 2)

Overall achievement 2021–2025:



2021 Report

IUCN SSC Western Ghats Plant Specialist Group







SOCIAL MEDIA AND WEBSITE
Facebook: The Western Ghats Plant Specialist Group
Instagram: @iucn_wgpsg

CO-CHAIR
Anita Varghese
Keystone Foundation, The Nilgiri, Tamil Nadu, India

CO-CHAIR
Aparna Watve
Biome Conservation Foundation, Pune, Maharashtra, India

DEPUTY CHAIR
Rengaian Ganesan
Ashoka Trust for Research in Ecology and Environment, Bengaluru, Karnataka, India

RED LIST AUTHORITY COORDINATOR
Aparna Watve
Biome Conservation Foundation, Pune, Maharashtra, India

NUMBER OF MEMBERS
59

Mission statement

The mission of the Western Ghats Plant Specialist Group (WGPSG) is to improve current knowledge on taxonomy and ecology of plants of the entire region of the Western Ghats and thereby enhance their conservation status in the long term.

Projected impact 2021–2025

Our mission is to improve the conservation status of wild plants in the Western Ghats. There are several experts working on plant conservation in this region and the WGPSG gives us a common platform. Population-level assessments of the Critically Endangered and endemic flora are urgently needed to assess threats. We will collate regional assessments of threats to plants and bring that information into the Red List database. This will help raise awareness about the major threats to plants in this region, to prioritise and recommend conservation actions and to implement species recovery programmes.

Targets 2021–2025

ASSESS

T-001 Facilitate extinction risk assessments following the IUCN Red List of Threatened Species methodology for several key genera and species of Western Ghats and publish the finalised assessments on the IUCN Red List of Threatened Species™.

T-002 Facilitate assessments following the IUCN Red List of Threatened Species methodology for selected genera and species with high diversity in Western Ghats (e.g. *Ceropegia*, *Impatiens*) and publish the finalised assessments on the IUCN Red List of Threatened Species™.

T-011 Assess threats to habitats in collaboration with local research NGOs, especially to estimate the status of invasive species.

T-012 Identify Key Biodiversity Areas for Plants in collaboration with Forest departments, local NGOs, citizen groups and others. Support declaration of Important Plant Conservation Areas.

ACT

T-004 Undertake *ex situ* and *in situ* conservation efforts in collaboration with scientifically managed nurseries, arboretums and botanical gardens.

T-008 Undertake documentation of sustainable use practices for species, plants and livelihood linkages (wild plants in use for self and market).

NETWORK

T-010 Conduct regular field courses in plant taxonomy and conservation science for graduate level students. Conduct regular courses for citizens and professionals in related fields for biodiversity conservation action.

COMMUNICATE

T-003 Advocate for more plant conservation work across the region among educational institutions, local/regional governments and corporate bodies.

T-013 Maintain an email distribution list for workshops planned/held. Maintain a Whatsapp group and social media presence with focus on local language campaigns.

Activities and results 2021

ASSESS

Red List

T-001 (KSR 6)

Number of global Red List reassessments completed: 18

Result description: Eighteen assessments are finalised and submitted/published.



Rhododendron arboreum ssp. nilagiricum
endemic to Western Ghats
Photo: Aditya Gadkari

T-002 (KSR 6)

Number of global Red List reassessments completed: 18

Result description: Eighteen assessments are finalised and submitted.

Research activities

T-011 (KSR 6)

Number of new invasive species accounts on the Global Invasive Species Database (GISD): ongoing

Result description: Dr Aparna Watve and Dr Ankur Patwardhan provided scientific support to the NGO Research and Action in Natural Wealth Administration (RANWA), for understanding the impact of invasive species (especially *Chromolaena odorata*) in the Mahabaleshwar Panchgani Ecologically Sensitive Area in June–December 2021. Citizen mapping of invasive species of the Nilgiris district was undertaken to create an Atlas of invasives of the region. Dr Aparna undertook field visits to assess threats to localised *Myristica* swamps of the Konkan region.

T-012 (KSR 6)

Number of new Key Biodiversity Areas confirmed in the World Database of KBAs (WDKBA): ongoing

Result description: Myristica Swamp forests are one of the most endangered of ecosystems in the Western Ghats. A patch of this has been conserved in Maharashtra state which protects populations of endangered Myristicaceae.

ACT

Technical advice

T-004 (KSR 10)

Number of technical consultations provided to support conservation actions: 1

Result description: Discussions on management of nurseries for endemic trees were conducted between members and planning of species cycle was made. A cycle of work from assess-plan to act was discussed.

T-008 (KSR 11)

Number of sustainable use practices supported: ongoing

Result description: Wild edible species of the region (440) were compiled from the literature. Dr Suchandra Dutta, a member of WGPSG, has been consistently raising awareness about edible plants from wild and home gardens, collecting primary data and encouraging local knowledgeable individuals to document associated traditional knowledge of wild edible plants (see for example: https://www.facebook.com/media/set/?vanity=suchandra.dutta.56&set=a.10160853208102542).

NETWORK

Capacity building

T-010 (KSR 2)

Number of people trained in assessment tools: 20

Result description: Students were trained in assessments and conservation planning for endemic species.

COMMUNICATE

Communication

T-003 (KSR 13)

Number of communication products using innovative tools: 1

Result description: One of the member institutions, Naoroji Godrej Centre for Plant Research (NGCPR), has completed an online digital herbarium of endemic plants of the Western Ghats. Agharkar Research Institute has made short films on rare species and important habitats.

T-013 (KSR 13)

Number of digital communication outputs developed in relation to specific taxonomic groups: 1

Result description: The IUCN SSC WGPSG page regularly posts endemic species and information of relevance to conservation.

Acknowledgements

We gratefully acknowledge the grant from Franklinia Foundation for 'Strengthening conservation action for selected endangered native tree species of the Western Ghats, India' in 2021. We gratefully acknowledge the grant from Re:wild for the project 'Assessment of evolutionarily distinct species of the Western Ghats for preparing conservation management plans', work to be carried out in collaboration with the IUCN SSC Freshwater Plants Specialist Group (start of grant January 2022).

Summary of achievements

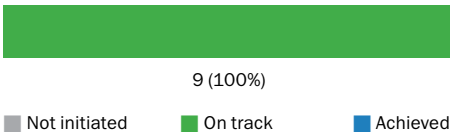
Total number of targets 2021–2025: 9

Geographic regions: 9 Asia

Actions during 2021:

Assess: 4 (KSR 6)
Act: 2 (KSR 10, 11)
Network: 1 (KSR 2)
Communicate: 2 (KSR 13)

Overall achievement 2021–2025:



IUCN SSC Conservation Genetics Specialist Group





CO-CHAIR
Gernot Segelbacher
University of Freiburg, Germany

CO-CHAIR
Mike Bruford
School of Biosciences, Cardiff University, Wales

NUMBER OF MEMBERS
80

SOCIAL MEDIA AND WEBSITE
Twitter: @congenetics
Website: https://www.cgsg.uni-freiburg.de

Mission statement

The Conservation Genetics Specialist Group (CGSG) will establish guidance for pressing genetic policy and management issues. CGSG also provides genetic advice on policy and management within IUCN's Species Survival Commission (SSC) and expert knowledge and assistance to SSC Specialist Groups. CGSG will facilitate a fuller appreciation, evaluation and conservation of genetic diversity and resources at all levels, providing a forum for all stakeholders to value and conserve this crucial element of Planet Earth's life systems.

Targets 2021–2025

ASSESS

T-003 Develop a guidance document for the use of genetics in Red Listing.

PLAN

T-001 Publish an IUCN Guidance document for monitoring changes in genetic diversity.

T-002 Develop a guidance document on biobanks and planning for conservation of intra-specific genetic diversity.

T-005 Develop a policy brief on Digital Sequence Information (DSI).

T-006 Develop a guidance document on how to include hybrids in conservation planning.

ACT

T-004 Publish a position statement for the use of genetics in defining conservation units.

COMMUNICATE

T-007 Raise awareness of the importance of genetic diversity in policy.

Activities and results 2021

ASSESS

Red List

T-003 (KSR 6)

Number of technical documents provided to support Red List assessments/reassessments: 0

Result description: Scientific papers have been submitted to inform how genetic data can be included in Red Listing.

PLAN

Planning

T-001 (KSR 8)

Number of technical documents to support the development of conservation plans/strategies: 0

Result description: The IUCN Guidance document is currently in the layout process and we expect it to be published in spring 2022.

T-002 (KSR 8)

Number of technical documents to support the development of conservation plans/strategies: 0

Result description: The guidance document on biobanks and planning for conservation of intra-specific genetic diversity is under development.



Workshop with CGSG members on genetic management guidelines in South Africa in October 2021
Photo: Isa-Rita Russo

T-006 (KSR 8)

Number of technical documents to support the development of conservation plans/ strategies: 0

Result description: The guidance document on how to include hybrids in conservation planning is under development.

Policy

T-005 (KSR 9)

Number of policies where SSC members provided technical input: 1

Result description: Policy brief published in January 2022.

ACT

Policy

T-004 (KSR 10)

Number of position statements addressing major drivers/emerging threats of species or population loss: 0

Result description: The position statement for the use of genetics in defining conservation units is under development.

Summary of achievements

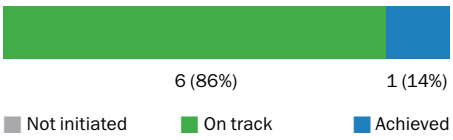
Total number of targets 2021–2025: 7

Geographic regions: 7 Global

Actions during 2021:

Assess: 1 (KSR 6)
Plan: 4 (KSR 8, 9)
Act: 1 (KSR 10)

Overall achievement 2021–2025:



IUCN SSC Conservation Planning Specialist Group



CHAIR
Onnie Byers
Global Conservation Network, 12101 Johnny Cake Ridge Road, Apple Valley, Minnesota 55124, US

NUMBER OF MEMBERS
242

SOCIAL MEDIA AND WEBSITE
Facebook: @ConservationPlanningSG
Instagram: @iucn_conservationplanningsg
Twitter: @IUCN_CPSG
Website: www.cpsg.org

Mission statement

The mission of the IUCN SSC Conservation Planning Specialist Group (CPSG) is to save threatened species by increasing the effectiveness of conservation efforts worldwide. For over 40 years, we've accomplished this by using scientifically sound, collaborative processes that bring together people with diverse perspectives and knowledge to catalyse positive conservation change. We provide species conservation planning expertise to governments, Specialist Groups, zoos and aquariums, and other wildlife organisations.

Projected impact 2021–2025

To increase global species conservation planning capacity and the number of effective conservation plans in place for threatened species.

Targets 2021–2025

PLAN

T-001 Help groups to select species for conservation planning attention, by providing ready access to relevant approaches, tools and case studies.

T-002 Accelerate identification and activation of pathways to effective conservation for selected species (including, but not limited to, those threatened with extinction).

T-003 Make A2P (Assessing to Plan) more effective in activating pathways and more useful to a wider range of planning practitioners and situations.

T-004 Strengthen the tools and processes used for single-species conservation planning activities.

T-005 Carry forward the A2P process' pathways to effective action and create an effective methodology for integrated multi-species conservation planning.

T-006 Increase the value to SSC planning of the IUCN SSC Species Conservation Planning Tools Library.

T-007 Provide tools and processes for evaluating and, where appropriate, incorporating *ex situ* options into species conservation and collection planning.

T-008 Develop and deliver effective training in the design and facilitation of species conservation planning processes.

T-009 Scale up coaching and mentoring programme for more competent and confident species conservation planning process designers, facilitators and technical experts able to lead in threatened species planning processes globally.

T-010 Demonstrate a scaling up of effective species conservation planning occurring globally.

T-011 Establish a professional learning network of species conservation planners, enabling the ongoing capacity growth and the development and refinement of planning guidelines, tools and processes.

T-012 Encourage inclusion of species conservation planning in national, regional and global policy.

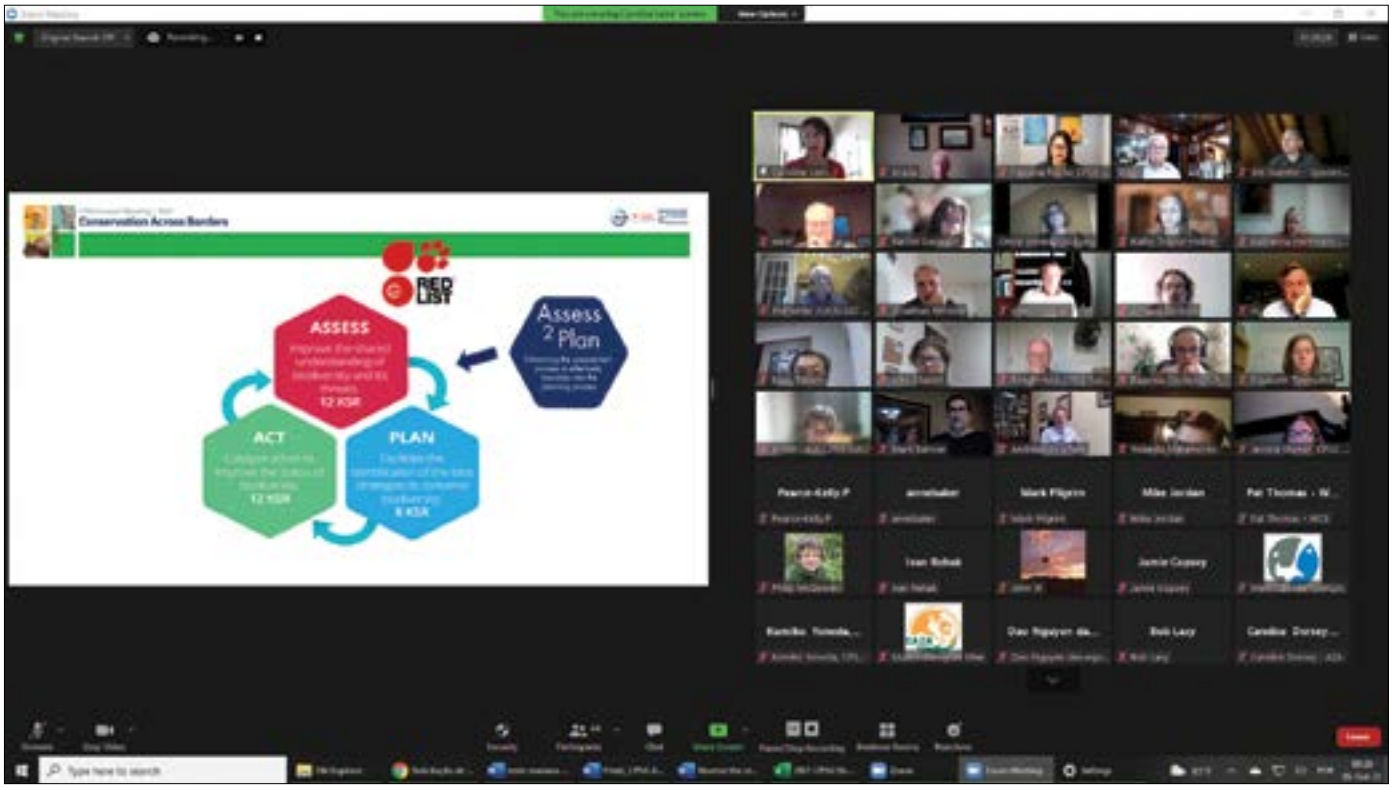
T-013 Support national commitments to achieving biodiversity targets by providing direct species conservation planning and capacity building support to national governments and indigenous communities.

T-014 Improve ability to provide tailored support to governments and indigenous communities on species conservation planning matters.

T-015 Maintain suitable systems for evaluating the impact of conservation planning on species.

T-016 Maintain a database and library of planning information for CPSG and the wider SSC.

T-017 Explore the assembly and integration of an expanded body of information that will enhance the species conservation planning process.



2021 CPSG Strategic Committee Meeting
Photo: CPSG

T-018 Collaborate with appropriate information sources to implement and promote open and accessible data sharing for enhanced species conservation planning.

T-019 Collaborate with the information technology community and other sectors where appropriate to construct new tools and methods for interdisciplinary data assembly and analysis.

Activities and results 2021

PLAN

Planning

T-001 (KSR 8)

Library of tools and case studies to support groups to prioritise species for planning and action: 1 ongoing.

Result description: CPSG's Assess to Plan (A2P) process continues to evolve and improve, most recently with the 2021 publication of the report titled *Assessing to Plan: Next Steps Towards Conservation Action for Threatened Snakes & Lizards of Mainland South Asia*.

T-001 (KSR 8)

Updated CPSG tools library: Ongoing.

Result description: We are currently undertaking a major revision of Tools Library content, updating the list of tools used most frequently as part of CPSG's Steps for Species Conservation Planning. In addition, we are refining our general template for how information about each tool will be presented.

T-002 (KSR 8)

Increase number of CPSG teams delivering A2P analyses and planning workshops: 1

Result description: European team currently running A2P in Denmark for hoverflies (started 2021).

T-002 (KSR 8)

Promote A2P to Specialist Groups and governments: Completed for 2021.

Result description: In 2021, the Assess to Plan (A2P) process was included in CPSG's introductory materials distributed to governments via IUCN Regional Offices. Also in 2021, A2P webinars were made available to other SSC Specialist Groups.

T-004 (KSR 8)

Continued collaboration with the Species Conservation Toolkit Initiative (SCTI): Completed for 2021.

Result description: Continued application of the Species Conservation Toolkit Initiative's software for population viability analysis, Vortex, to an increasingly complex array of species (e.g. univoltine insects including butterflies in North America) and conservation planning applications (e.g. explicit analysis of hybridisation with Coyotes (*Canis latrans*) as a threat to long-term persistence of the Red Wolf (*Canis rufus*) in the south-eastern United States).

T-005 (KSR 8)

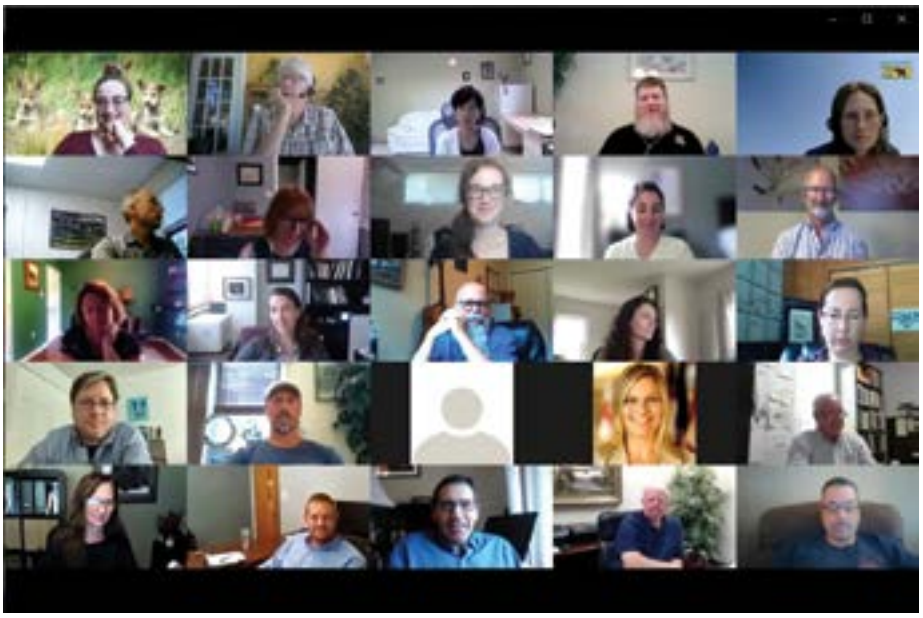
A specific case study in which a candidate set of tools/process can be tested for applicability to effective multi-species planning: 1

Result description: CPSG's Assess to Plan (A2P) process continues to evolve and improve, most recently with the 2021 publication of the report titled *Assessing to Plan: Next Steps Towards Conservation Action for Threatened Snakes & Lizards of Mainland South Asia*. In addition, a European team is currently running A2P in Denmark for hoverflies (started 2021), using lessons learnt from previous A2P processes to help systematise and automate the steps focused on information assembly and analysis.

T-006 (KSR 8)

New and appropriate materials developed by CPSG (One Plan Approach resources, etc.) are added to the Tools Library: Ongoing.

Result description: We are currently undertaking a major revision of Tools Library content, updating the list of tools used most frequently as part of CPSG's Steps for Species Conservation Planning. In addition, we are refining our general template for how information about each tool will be presented.



Red Wolf Recovery Planning Workshop, Day 1: 31 August 2021
Photo: Phil Miller

T-008 (KSR 8)

Establish training courses accessible to SSC members and beyond for all CPSG planning processes and tools: Ongoing.

Result description: The training programme is now well established. Approximately 800 individuals have successfully completed facilitation skills training between 2018–2021. In addition to the Facilitation Skills online course that we run twice annually, we are launching our Wildlife Disease Risk Analysis online course in March 2022.

T-008 (KSR 8)

Create a certification scheme to provide explicit recognition of knowledge gain by those individuals who have completed the training successfully: Completed for 2021.

Result description: Course completion certificates are in place for all our training. Those on the Development Path also receive a certificate on completion of the programme. A certificate of reflective practice is in place for those individuals who complete the training and then wish to demonstrate their ability to put their training into practice. A course certification scheme is in place. More than 800 individuals have completed this process to date. Development Path certification is also now in place with seven individuals receiving their certificates for completing the mentoring programme in 2021.

T-009 (KSR 9)

Planner and Technical Development Path mentoring programmes in place and able to respond to a scaling up of capacity need as required: Completed for 2021.

Result description: Seven CPSG Species Conservation Planning Facilitators successfully completed the programme in 2021. A further 16 mentees are now on the programme, 12 of which focused on the Facilitator Development Path, and four linked to the Technical Development Path. Facilitator and Technical Development Path competency checklists are now developed to provide a structure for mentees and mentors to use to plan out professional development areas of focus.

T-009 (KSR 9)

CPSG Planner accreditation scheme in place to identify individuals who can demonstrate a level of competency in species conservation planning knowledge and skills to the design and facilitation of planning processes: Completed for 2021.

Result description: The process for 'sign off' of mentees as CPSG Species Conservation Planning Facilitators is now in place. A decision was made not to adopt an 'official accreditation scheme' for now, instead favouring a combination of feedback from mentees and mentors to determine whether or not the mentee has demonstrated their competencies and abilities to work independently of support. Seven mentees reached this standard and were recognised at CPSG's 2021 Annual Meeting.

T-010 (KSR 10)

Processes in place to monitor and evaluate the enhancement of professional development factors (e.g. knowledge, skills, perceived self-efficacy) in those individuals we train and mentor: Ongoing.

Result description: An annual training survey monitors these variables. Reporting for 2021 is to be completed by April 2022. Note a paper summarising our training and monitoring work has been accepted and will be published in 2022. The 2021 survey is complete with 65 trainees responding.

T-010 (KSR 10)

Customised training programmes developed for national governments to enable them to build and maintain the capacity of their staff to put planning principles and steps into practice: 1

Result description: In 2021, we tailored a course for government personnel from Lebanon.

T-010 (KSR 10)

Systems in place to monitor and evaluate increase in species conservation planning occurring as a result of increase training; goal of ensuring 10,000 species are covered by conservation plans: 539

Result description: Respondents to our annual training surveys of 'graduates' of our training programme have listed 215 species that they facilitated and/or designed planning processes for in 2021. In 2021, a further 324 species were identified by trainees. These figures are clearly only a percentage of the total number of species impacted, as only a proportion of trainees respond to the survey.

T-011 (KSR 8)

CPSG-Connect network providing a platform on which a community of planning practice can be developed: Completed for 2021.

Result description: The network consists of ca. 200 members. CPSG Planning Clinics launched as an additional resource to help build capacity for planning within the network. The clinics provide an opportunity for people who have completed our training to raise questions concerning specific species conservation planning projects they are involved in, and for them to receive expert input. CPSG Facilitation Practice sessions have also been established to provide opportunities for (virtual) facilitation tools practice. The network is strengthened with additional participants on our training courses having now completed the training and actively seeking opportunities to put their training into practice.



Critically Endangered Red Wolf (*Canis rufus*)
Photo: B. Bartel, USFWS

T-011 (KSR 8)

Planning guidance and additional resources informed by and communicated through the expanding planning community: Completed for 2021.

Result description: Planning clinics established and Facilitation Tools Practice Sessions also in place as outlined under previous capacity building result.

T-013 (KSR 9)

Produce and distribute (to IUCN offices, government agencies, other appropriate authorities) documents introducing CPSG tools, processes and capacity development opportunities: Completed for 2021.

Result description: A document introducing CPSG was distributed to governments via IUCN Regional Offices.

T-014 (KSR 9)

Collaborate with at least one national government to develop country-specific guidance and training materials and promote these as an option to other national governments: Ongoing.

Result description: Discussions began with the Australian Government in 2021.

T-015 (KSR 8)

Track and evaluate long-term trajectories of species post-planning: Ongoing.

Result description: Methodology to maintain suitable systems for evaluating the impact of conservation planning on species was published in 2021.

T-017 (KSR 8)

Identify appropriate disciplines and fields that can contribute critical information to the enhanced planning process: Ongoing.

Result description: We are closely collaborating with Impact by Design Inc. to utilise their expertise in applying Theory of Change principles and techniques to the problem of understanding anthropogenic drivers of activities that lead to increased mortality of chimpanzees. In addition, we are partnering with the Saint Louis Zoo in the design of a Species Conservation Planning incubator. Effective conservation of endangered wildlife requires understanding the threats to species persistence and the complex human factors that drive those threats. The Species Conservation Planning Incubator will bring together diverse professional and academic expertise to study these key relationships and develop novel strategies for addressing species extinction.

T-017 (KSR 8)

Create a better understanding of the specific information sets necessary for inclusion in the enhanced case study: Ongoing.

Result description: Through collaboration with the Jane Goodall Institute and the Wild Chimpanzee Foundation in Liberia, we are mapping key elements of the linked chimpanzee-human system that governs removal of chimpanzees for the bushmeat trade. We seek to generate robust estimates of chimpanzee population change (decline) in the study area in and around Liberia's Grebo-Krahn National Park, and the contribution to that decline made by bushmeat hunting by local human communities.

T-017 (KSR 8)

Engage key representatives from identified disciplines to collaborate with CPSG for the purpose of developing more integrated conservation planning tools and processes: Ongoing.

Result description: Through this collaborative applied research project, we have partnered with the Wild Chimpanzee Foundation in Liberia as a key local expert in gathering behavioural and sociological data among residents of human communities living near the project area (Grebo-Krahn National Park). Along with research partners Impact by Design Inc. and the Jane Goodall Institute, we have now put together a group that we hope will generate important new insights into the human behavioural drivers of bushmeat hunting in Liberia.

T-017 (KSR 8)

Develop a specific case study that offers opportunities for creating an expanded information set for enhanced planning: Ongoing.

Result description: We are working with Impact by Design Inc. and the Jane Goodall Institute to develop a case study in the integration of wildlife population quantitative risk assessment tools with evidence-based human behaviour change methodologies. We have chosen the Western Chimpanzee (*Pan troglodytes verus*) population in and around Grebo-Krahn National Park in south-eastern Liberia as our test case. Through previous work in this project, we have identified hunting chimpanzees for bushmeat as the primary threat to local population persistence, and therefore the target activity for this integrated research.

Acknowledgements

We thank Global Conservation Network, the donors who make up this network make everything we do possible.

Summary of achievements

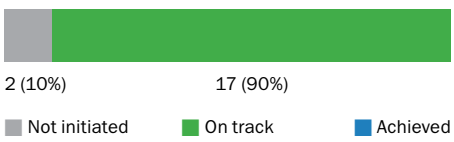
Total number of targets 2021–2025: 19

Geographic regions: 19 Global

Actions during 2021:

Plan: 23 (KSR 8, 9, 10)

Overall achievement 2021–2025:



IUCN SSC Conservation Translocation Specialist Group



CHAIR
Axel Moehrenschlager
IUCN SSC Conservation Translocation Specialist Group, Canada

NUMBER OF MEMBERS
98

SOCIAL MEDIA AND WEBSITE
Website: https://iucn-ctsg.org

Mission statement

The IUCN SSC Conservation Translocation Specialist Group (CTSG) aims to empower responsible conservation translocations that save species, strengthen ecosystems and benefit humanity.

Projected impact 2021–2025

In alignment with CTSG's 10-year strategic plan, available at iucn-ctsg.org, the group will progress in each of its six strategic pillars, bringing advancements in Science, Guidance, Policy, Training, Action, and Outreach, respectively. Overall, we endeavour to advance knowledge to innovate solutions to problems that endangered species and ecosystems face. We will create guidelines of best-practice on emerging globally relevant topics, and work with taxon specialist groups to advance customized best practice documents. We will work with governments to entrench guidance documents in regional or national policies. We will expand our international training program to five continents in person, while accelerating the content and accessibility of online training information. Ultimately, we are focussed on actions that arise from the aforementioned strategies and will work with stakeholders globally to advance responsible, efficient, and effective conservation translocations that aid species and recipient ecosystems. Finally, we will escalate the opportunity to share the stories, the challenges, and ultimately the successes that arise when courageous action is taken to actively restore species and ecosystems.

Targets 2021–2025

PLAN

T-003 Launch the CTSG Plan to 2030, with new mission, vision and logo.

T-005 Launch the Global Amphibian Conservation Translocation Guidelines.

T-007 Assist the development and launch of the English government's Code for Conservation Translocations.

T-010 Enhance online conservation translocation training.

T-011 Produce a Guiding Principle Document for Responsible Use of Confiscated, Rehabilitated, or Rescued Organisms for Responsible Conservation Translocations.

ACT

T-004 Publish a 2021 Global Conservation Translocation Perspective Case Study Book.

T-006 Publish a 'Conservation Translocation' book with Cambridge University Press.

T-008 Support the planning, development and implementation of conservation translocations in the wild for 50+ species.

NETWORK

T-001 Host a Global Conservation Translocation Conference.

T-002 Support a Global Plant Conservation Translocation Conference.

T-009 Give in-person training on three continents.

Activities and results 2021

PLAN

Planning

T-003 (KSR 8)

Number of conservation plans/strategies developed: 1

Result description: The plan was launched and the new vision, mission and logo are in place.

T-005 (KSR 8)

Number of conservation plans/strategies developed: 1

Result description: We had a successful launch of the *IUCN Guidelines for amphibian reintroductions and other conservation translocations* (available at: https://portals.iucn.org/library/node/49485).

T-010 (KSR 8)

Create and post CTSG training modules on CTSG website to enhance online training for global governments and practitioners: 1

Result description: Refreshed new content for extensive CTSG modules was online



Group of released Javan Ebony Langurs at Coban Talun
Photo: Iwan Kurniawan

by 31 December (available at: https://iucn-ctsg.org), with contributors from New Zealand, Spain, Italy and Canada.

Policy

T-007 (KSR 9)

Number of policies where SSC members provided technical input: 1

Result description: There was a successful launch of the English *Reintroductions and other conservation translocations: code and guidance for England*, which apply our IUCN *Guidelines for Reintroductions and Other Conservation Translocations*. The Code was developed with Natural England and the UK Department for Environment, Food and Rural Affairs (DEFRA). See: https://www.gov.uk/government/publications/reintroductions-and-conservation-translocations-in-england-code-guidance-and-forms.

T-011 (KSR 9)

Number of documents provided to support/guide policy making: 1

Result description: We have made excellent progress; initial draft documents are completed. We are working towards SSC Steering Committee approval in 2022.

ACT

Conservation actions

T-004 (KSR 10)

Number of technical documents provided to support conservation actions: 1

Result description: *Global conservation translocation perspectives: 2021. Case studies from around the globe* was published and distributed worldwide. It is available for download at https://iucn-ctsg.org.

T-006 (KSR 10)

Number of technical documents provided to support conservation actions: 1

Result description: The book *Conservation Translocations* has been submitted to Cambridge University Press. Anticipated publication is in December 2022.

T-008 (KSR 10)

Number of conservation translocations conducted: 5

Result description: Advanced planning/action took place for: (1) Guam Kingfisher (*Todiramphus cinnamominus*) – Guam; (2) Mountain Bongo (*Tragelaphus eurycerus isaaci*) – Kenya; (3) Eurasian Beaver (*Castor fiber*) – Greece; (4) Hawaiian honeycreepers – US; (5) Scottish Wildcat (*Felis silvestris silvestris*) – Scotland.

NETWORK

Synergy

T-001 (KSR 3)

Conference held: 1

Result description: Planning is well advanced for a conference in Perth in November 2023.

T-002 (KSR 3)

Conference supported spearheaded by Rome academic partners: 1

Result description: The conference is set for Rome in June 2022.

Acknowledgements

We wish to acknowledge the SSC leadership and Secretariat for its excellent work in the planning, support, and acknowledgement of CTSG activities. Moreover, we would like to thank and congratulate other taxonomic and thematic specialist groups for their achievements and for collaborations with us. We also give special thanks to supporters of our 2021 *Conservation Translocation Perspectives* publication, especially the Wildlife Reserves of Singapore, Aspinall Foundation, and Environment Agency of Abu Dhabi. Special thanks go to Pritpal Soorae for his decades of innovation and commitment as Program Officer. Finally, huge thanks to all CTSG members, instructors, and task force leaders for advancing progress that is making a real difference for species, for ecosystems, and for people around the world which enjoy subsequent health, educational, economic, cultural, and spiritual benefits.

Summary of achievements

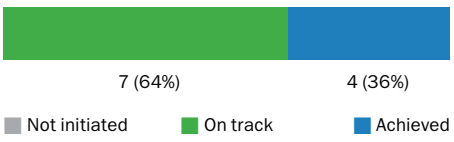
Total number of targets 2021–2025: 11

Geographic regions: 5 Global, 1 America, 1 Asia, 3 Europe, 1 Oceania

Actions during 2021:

Plan: 5 (KSR 8, 9)
Act: 3 (KSR 10)
Network: 2 (KSR 3)

Overall achievement 2021–2025:



IUCN SSC Invasive Species Specialist Group



SOCIAL MEDIA AND WEBSITE
Facebook: @IUCNSSCISSG
Twitter: @IUCN_ISSG
Website: www.issg.org

CHAIR
Piero Genovesi
ISPRA Institute for Environmental Protection and Research, Via Vitaliano Brancati 48, 00144 Rome, Italy

DEPUTY CHAIR
Shyama Pagad
University of Auckland, New Zealand

NUMBER OF MEMBERS
198

Mission statement

The Invasive Species Specialist Group (ISSG) aims to reduce threats to natural ecosystems and the native species they contain by increasing awareness of invasive alien species, and of ways to prevent, control or eradicate them.

Projected impact 2021–2025

The ISSG promotes and facilitates the exchange of invasive species information and knowledge across the globe and ensures the linkage between knowledge, practice and policy so that decision making is informed. The two core activity areas of the ISSG are policy and technical advice, and information exchange through our online resources and tools and through networking.

Targets 2021–2025

ASSESS

T-001 Global Register of Introduced and Invasive Species (GRIIS): Carry out 2022 scheduled updates of all national checklists.

T-003 Enhance the Global Register of Introduced and Invasive Species (GRIIS).

T-007 Update Sustainable Development Goals (SDG) Indicator 15.8.1.

NETWORK

T-002 Global Register of Introduced and Invasive Species (GRIIS): Expand networks of country editors.

COMMUNICATE

T-004 Complete integration of the Environmental Impact Classification for Alien Taxa (EICAT) on the Global Invasive Species Database (GISD).

T-005 Populate EICAT assessments, finalising at least 100 assessments in 2022.

T-006 Contribute to discussion on the Convention on Biological Diversity (CBD) Global Biodiversity Framework for what concerns Invasive Alien Species (IAS).

Activities and results 2021

ASSESS

Communication

T-003 (KSR 5)

Addition of key annotations to the GRIIS compendium: 100

Result description: Through various funded projects, data on key annotations such as dates of introduction, pathways of introduction and impacts have been compiled and recorded in the GRIIS master Research Database.

Policy

T-001 (KSR 5)

Numbers of country checklists updated: 130

Result description: The complete global coverage of the Global Register of Introduced and Invasive Species entails the update of 198 national checklists and is extended over a two-year period. The process began in 2021 and we have processed over 130 checklists for update.

COMMUNICATE

Communication

T-004 (KSR 12)

EICAT framework visible on the GISD website; species assessments online: 50%

Result description: EICAT assessments produced, and EICAT search options implemented in GISD.

T-005 (KSR 12)

Number of assessments online: 30%

Result description: Over 30 assessments were published in 2021.

T-006 (KSR 12)

Engagement with the CBD and key persons: 100%



Slider turtles (*Trachemys scripta*), commonly traded as pets, have been introduced to many countries by people releasing them to the wild, then becoming invasive
Photo: ISSG archives



Communicating children key messages on invasive species
Photo: ISSG archives

Result description: The ISSG, through its Chair and global membership, has and is playing a key role in constructive discussions at different fora related to the development and wording of the Post-2020 invasive alien species target.

Acknowledgements

The Invasive Species Specialist Group would like to acknowledge the membership in supporting the group to actively raise the profile of this key threat through their work. Several members of the ISSG are leading the writing of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) Invasive Alien Species Assessment as lead authors, review editors, etc. Over 450 country experts, many of them ISSG members, have contributed to the GRIIS project as editors and contributors of data. The ISSG would like to acknowledge the Italian Institute for Environmental Protection and Research, ISPRA (Istituto Superiore per la Protezione e la Ricerca Ambientale), for hosting the Global Invasive Species Database and providing IT support. The ISSG would like to acknowledge the support of La Trobe University for hosting the GRIIS Research Database and IT support; this has been made possible through Prof. Melodie McGeoch who is the science lead for the ISSG in the development of IAS indicators. We would also like to acknowledge the University of Auckland for its over two decades of support to the ISSG. ISSG would also like to acknowledge the funding support from IUCN Headquarters for the update of the SDG Policy indicator 15.8.1.

Summary of achievements

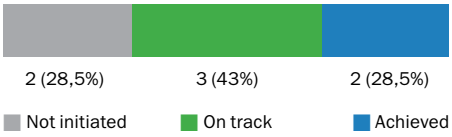
Total number of targets 2021–2025: 7

Geographic regions: 7 Global

Actions during 2021:

Assess: 2 (KSR 5)
Communicate: 3 (KSR 12)

Overall achievement 2021–2025:



IUCN SSC Species Monitoring Specialist Group



CHAIR
P.J. Stephenson
Laboratory for Conservation Biology, Department of Ecology & Evolution, University of Lausanne, Lausanne, Switzerland

NUMBER OF MEMBERS
86

SOCIAL MEDIA AND WEBSITE
Twitter: @Monitor_Species
Website: **https://www.speciesmonitoring.org**

Mission statement

The IUCN SSC Species Monitoring Specialist Group (SMSG) aims to enhance biodiversity conservation by improving the availability and use of data on species populations, their habitats and threats.

Projected impact 2021–2025

The Species Monitoring Specialist Group helps build capacity for biodiversity monitoring in a range of stakeholder groups, from government departments to companies to NGOs, and also in taxonomic Specialist Groups. That increased capacity for data access and use will improve adaptive management of conservation projects, which in turn will improve the status of species. However, we cannot predict precisely how many species will have their conservation status improved as a result of our work.

Targets 2021–2025

ASSESS

T-001 Enhance species monitoring and Red List data quality and volume through the testing of monitoring methods and the development and dissemination of lessons, tools and guidelines.

T-002 Support the development and testing of the Green Status of Species (GSS).

T-003 Integrate the IUCN Red List Index and the Green Status of Species into monitoring tools and guidelines developed by the group so as to encourage uptake by civil society and business as well as countries.

NETWORK

T-004 Develop and implement partnerships that result in projects and products that enhance species monitoring.

T-005 Engage IUCN members and Secretariat teams in group projects.

Activities and results 2021

ASSESS

Green Status

T-002 (KSR 6)

Number of new Green Status of Species assessments completed: 2

Result description: The Chair contributed to two GSS assessments (African Penguin, *Spheniscus demersus*; Sahafary Sportive Lemur, *Lepilemur septentrionalis*) included in the latest IUCN Red List (2021-3) as a result of an SMSG project.

Red List

T-003 (KSR 7)

Number of NGOs and companies using group tools and guidelines that advocate using the Red List Index or Green Status of Species: 1

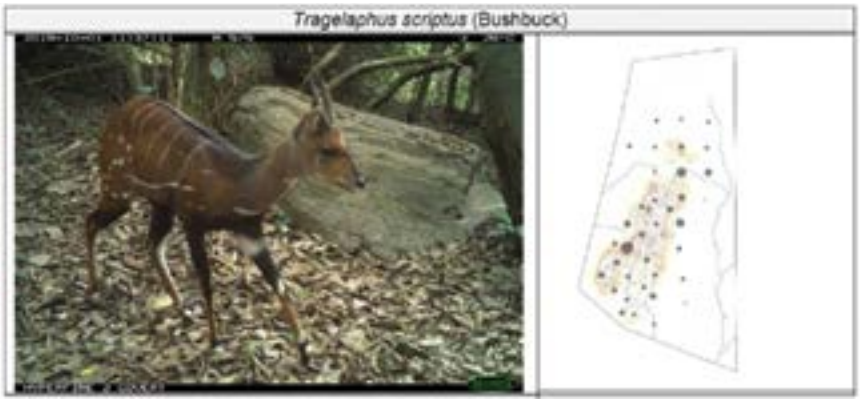
Result description: The group's ongoing project with the IUCN Global Business and Biodiversity Programme has led to the development of a biodiversity strategy and monitoring guidelines for the coffee company Nespresso, with encouragement to use both the Red List and Green Status of Species (*see* Stephenson & Carbone, 2021c, *below*).

Research activities

T-001 (KSR 5)

Number of scientific publications about species research that acknowledge SSC affiliation: 9

Result description: This year there were major advances in testing and comparing monitoring methods at project sites (e.g. Shai Hills, Ghana) and through literature reviews. There was also major progress in the development of monitoring guidelines with the Chair being lead author on the IUCN *Guidelines for planning and monitoring corporate biodiversity performance*. A research project supervised by the Chair and led by Ines Moreno explored biodiversity data and capacity gaps and causes in East Africa (results to be published in 2022). A grant was also secured from the Swiss government to start a new research project led by the group Chair that will lead to the development of a decision support tool to help multiple stakeholders access



A bushbuck captured by a camera trap in Shai Hills Reserve Ghana, and the species distribution map the speciliast group has helped develop for reserve managers
Photo: Kofi Amponsah-Mensah

biodiversity data and tools. Key papers this year as a direct result of the Chair's work or group projects included: (1) Badalotti, A., et al. (2021). 'Improving the monitoring of conservation programmes: lessons from a grant-making initiative for threatened species'. *Oryx* 56:288–294. https://doi.org/10.1017/S0030605320000538; (2) Grace, M.K., et al. (2021). 'Testing a global standard for quantifying species recovery and assessing conservation impact'. *Conservation Biology* 35(6):1833–1849. https://doi.org/10.1111/cobi.13756; (3) Hochkirch, A., et al. (2021). 'A strategy for the next decade to address data deficiency in neglected biodiversity'. *Conservation Biology* 35(2):502–509. https://doi.org/10.1111/cobi.13589; (4) Moussy, C., et al. (2022). 'A quantitative global review of species population monitoring'. *Conservation Biology* 36: e13721. https://doi.org/10.1111/cobi.13721; (5) Stephenson, P.J. (2021). 'Monitoring should not be a barrier to conservation success: a response to Sanders et al.'. *Oryx* 55(5):656. https://doi.org/10.1017/S0030605321000624; (6) Stephenson, P.J. and Carbone, G. (2021a). *Guidelines for planning and monitoring corporate biodiversity performance*. Gland, Switzerland: IUCN. https://doi.org/10.2305/IUCN.CH.2021.05.en; (7) Stephenson, P.J. and Carbone, G. (2021b). 'New guidelines allow companies to plan and monitor biodiversity performance at the corporate level'. *Oryx* 55(4):491–492. https://doi.org/10.1017/S0030605321000442; (8) Stephenson, P.J. and Carbone, G. (2021c). *Nespresso and Biodiversity*. Gland, Switzerland: IUCN. Available at: Error! Hyperlink reference not valid.https://www.sustainability.nespresso.com/sites/site.prod.sustainability.nespresso.com/files/Nespresso-And-Biodiversity-2021.pdf; (9) Zwerts, J.A., et al. (2021). 'Methods for wildlife monitoring in tropical forests: Comparing human observations, camera traps, and passive acoustic sensors'. *Conservation Science and Practice* 3:e568. https://doi.org/10.1111/csp2.568. The Chair also presented Group work and promoted species monitoring at several conferences including: (1) 'An overview of modern biodiversity monitoring tools: challenges and opportunities', symposium on Innovations in Biodiversity Monitoring for Conservation (online), International Congress for Conservation Biology, Kigali, Rwanda, December 2021; (2) 'The role of agricultural ecosystems in biodiversity conservation', Landscapes for Forests and Food plenary (online), 2021 Global Landscapes Forum Climate: Forest, Food and Finance - Frontiers of Change conference, Glasgow, Scotland, November 2021; (3) Launch of IUCN Biodiversity Guidelines for Business, We Value Nature Ten Day Challenge, webinar, March 2021; (4) 'The use of environmental DNA in monitoring aquatic biodiversity for conservation: a review of challenges and opportunities', DNAquanet Online Conference, March 2021.

NETWORK

Capacity building

T-004 (KSR 1)

Number of partners engaged in group projects: 2

Result description: New partnerships were established in 2021 with: (1) the cruise ship company Viking; the Chair was invited to join the research advisory group and has now developed (and received Viking approval for) a new project due to start in 2022 with two other group members (Jessica Meeuwig and Denise Risch) and their institutions (Blue Abacus and the Scottish Association for Marine Science); (2) the University of St Gallen, Switzerland, for a new research project with the Chair and two group members (Maria Cecilia Londono and Yaa Ntiamoa-Baidu).

Proposal development and funding

T-005 (KSR 3)

Number of species monitoring initiatives implemented together with IUCN members, national/regional committees and Secretariat: 2

Result description: Business guidelines for biodiversity planning and monitoring were developed with the IUCN Global Business and Biodiversity Programme at the IUCN Secretariat. The project to assess global monitoring schemes published its results (see Moussy et al., 2021, *above*), the result of a collaboration with BirdLife International, an IUCN Member.

Acknowledgements

We are extremely grateful to the following for their financial support to projects involving the Group in the last few years: Audemars-Watkins Foundation (through the Centre for African Wetlands); Cambridge Conservation Initiative Collaborative Fund for Conservation (through BirdLife International); Global Wildlife Conservation (now Re:wild) (through P.J. Stephenson); National Geographic Society (through P.J. Stephenson); Nespresso, Boskalis and the Alcoa Foundation (through the IUCN Business and Biodiversity Programme); Swiss Network for International Studies (through the University of Lausanne). We are also greatly indebted to the following for informally hosting the Chair: Dr Luca Fumagalli, Laboratory for Conservation Biology, Department of Ecology & Evolution, University of Lausanne, Switzerland, for hosting the Chair since August 2020; Prof. Jaboury Ghazoul, Ecosystem Management Group, Department of Environmental Systems Science, ETH Zürich, Zürich, Switzerland, for hosting/co-hosting the Chair from September 2017 to January 2019; Dr Thomas Brooks, Science and Economic Knowledge Unit, IUCN, Gland, Switzerland, for hosting/co-hosting the Chair from January 2017 to January 2018. We also acknowledge our immense gratitude to Angela Ruiz de Paz and Laura van Galen for their support to the group's work as volunteers.

Summary of achievements

Total number of targets 2021–2025: 5

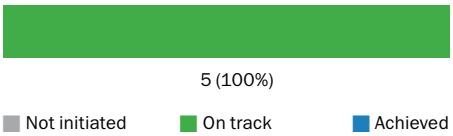
Geographic regions: 5 Global

Actions during 2021:

Assess: 3 (KSR 5, 6, 7)

Network: 2 (KSR 1, 3)

Overall achievement 2021–2025:



IUCN SSC Sustainable Use and Livelihoods Specialist Group



CHAIR
Dilys Roe
International Institute for Environment and Development (IIED), London, UK

NUMBER OF MEMBERS
260

SOCIAL MEDIA AND WEBSITE
Facebook: @iucnsuli
Twitter: @IUCNSULi
Websites: https://iucnsuli.org; https://www.iucn.org/our-union/commissions/commission-environmental-economic-and-social-policy/our-work/human-wellbeing-and-sustainable-livelihoods

Mission statement

To build global understanding of the importance of sustainable use of wild species, both for nature and for people, and to guide sound decision-making by generating and disseminating high quality, evidence-based information, tools and advice, that enhance legal, sustainable, equitable wildlife management practices and draw attention to those that are illegal, unsustainable and inequitable.

Projected impact 2021–2025

The main goal for SULi this quadrennium is "*to build the capacity of SULi to act as an effective advocate for sustainable use globally, through enhanced evidence, communications and political engagement, thus fulfilling its potential as THE international authority on sustainable use*". To achieve this goal SULi' is working hard to diversify and strategically expand its membership through better representation of species use across all taxonomic realms and achieving a more balanced representation of members globally. SULi is keen to help bring much more attention to the use of species in the fungi, invertebrate and plant groups which are frequently overlooked. SULi is developing a database (the Sustainable Use of Species (SUS) database) to be a reliable and trusted provider of high-quality information on the utilisation (sustainable and unsustainable) of wild species, and the recorded ecological, social and economic impacts of that utilisation. SULi is working on a a number of technical outputs, some are near completion and some are at the planning stage, and include guidance on integrating indigenous and local knowledge into Red List assessments and guidance on the harvesting of threatened species, a contribution to the CITES World Wildlife Trade report, a situation analysis on the contribution of hunting to wildlife conservation and management, anda project to develop, test, and build capacity for a multi-dimensional assessment framework that determines whether use of wild species is both sustainable and safe.. SULi will continue its engagement with the institutions, conventions and treaties that determine international wildlife policy, e.g. CITES, Convention on Biological Diversity (CBD), and the Subsidiary Body on Scientific, Technical and Technological Advice (SBSTTA), and to track initiatives, enquiries and proposals opposing the utilisation of wildlife. SULi also continues to work on initiatives which highlight the critical role of communities in tackling illegal wildlife trade, including People Not Poaching, Beyond Enforcement and the First Line of Defence.

Targets 2021–2025

ASSESS

T-003 Publish in at least one peer-reviewed journal per year with SSC SULi affiliation.

T-015 Conduct ongoing research to identify and write case studies to contribute information to the Sustainable Use of Species Database.

PLAN

T-004 Develop and submit inf. docs for CITES, Convention on Migratory species (CMS) and CBD as required to inform decisions on sustainable use and links to livelihoods.

T-005 Attend CBD and CITES Conference of the Parties (CoPs) meetings and relevant subsidiary bodies and working groups.

T-010 Publish a hunting situation analysis to help inform IUCN guidelines and a position statement.

ACT

T-006 Conduct a global situation analysis of social, economic and ecological impacts of hunting.

T-007 **Develo**p and test a framework for assessing sustainability of wildlife uses.

T-008 Design a sustainable use database and document at least 20 sustainable use practices per year.

T-009 Hold at least one event per year to build capacity amongst policy makers and



Bupa Banda speaking at the SULi event in the Reverse the Red pavilion, WCC in Marseille
Photo: Dilys Roe

project implementers to engage communities in tackling illegal wildlife trade.

T-011 Produce at least one new IUCN publication or other output on engaging communities in tackling illegal wildlife trade.

T-016 WCC-2020-Res-076: Develop a programme of work to support wildlife based economic development in Africa (with IUCN Eastern and Southern Africa Regional Office, ESARO).

T-017 Prepare emergency Motions to submit at Congress if needed to counter anti-use submissions.

T-022 Develop a SULi strategy which outlines key priorities and objectives (2021–2025).

T-020 (T2017-6) Roll out the First Line of Defence initiative in further East/Southern African countries.

NETWORK

T-001 Establish at least one new funding partnership in 2021 and establish or maintain at least one in 2023.

T-002 Develop and implement at least one new initiative per year with other IUCN Commissions and/or Regional Offices and/or Members.

T-013 Conduct a comprehensive review of membership in advance of the IUCN quadrennial renewal process to understand where efforts need to focus on achieving better balances across geographical location, age, gender and expertise.

T-014 Internal restructuring to establish sub-groups (thematic/geographic) to improve efficiency and engagement of members in delivering the SULi strategy.

COMMUNICATE

T-012 Produce the SULi Digest at least four times per year each year.

T-018 Provide ongoing technical and science-based support to guide sustainable use.

T-019 (T2017-1) Publish a new Annex on harvesting of threatened species.

T-021 (T2019-17) Populate Communities and Illegal Wildlife Trade Learning Platform; conduct periodic analyses of lessons learnt; run learning activities including webinars.

T-023 Develop a communication strategy to guide outputs, media engagement, policy briefings, etc.

Activities and results 2021

ASSESS

Research activities

T-003 (KSR 5)

Number of scientific publications about species research that acknowledge SSC affiliation: 3

Result description: (1) Wilson-Holt, O., and Roe, D. (2021). 'Community-Based Approaches to Tackling Illegal Wildlife Trade—What Works and How Is It Measured?'. *Frontiers in Conservation Science* 2:765725. **https://doi.org/10.3389/fcosc.2021.765725**; (2) Marsh, S.M.E., et al. (2021). 'Prevalence of sustainable and unsustainable use of wild species inferred from the IUCN Red List of Threatened Species'. *Conservation Biology* 36(2):e13844. https://doi.org/10.1111/cobi.13844; (3) Cooney, R., et al. (2021). 'Think Before You Act: Improving the Conservation Outcomes of CITES Listing Decisions'. *Frontiers in Ecology and Evolution* 9:631556. https://doi.org/10.3389/fevo.2021.631556

T-015 (KSR 5)

Number of research projects completed or supported by SSC members per taxonomic group and region: 0

Result description: A literature search to gather relevant content to rigorously test the prototype of the database started in December 2021 and will also be used to seed the database with records once the testing is completed.

PLAN

Planning

T-005 (KSR 9)

Number of Multilateral Environmental Agreement meetings attended by the SSC group: 5

Result description: We attended the following: (1) SBSTTA-24 Informal Sessions, 17–19 February and 24–26 February; (2) SBSTTA-24, 3 May–9 June; (3) 31st Meeting of CITES Animals Committee, 3–4 May and 21–22 June; (4) 3rd Meeting of the Open-Ended Working Group, 23 August–3 September; (5) Convention on Biological Diversity CoP15 Part 1, 11–15 October.

ACT

Conservation actions

T-011 (KSR 10)

Number of technical documents provided to support conservation actions: 3

Result description: (1) Wilson-Holt, O., and Roe, D. (2021). 'Community-Based Approaches to Tackling Illegal Wildlife Trade—What Works and How Is It Measured?'. *Frontiers in Conservation Science* 2:765725. https://doi.org/10.3389/fcosc.2021.765725; (2) *Community-led approaches to tackling illegal wildlife trade: Case studies from the Southern African Development Community Region* (People Not Poaching Initiative, jointly published by IUCN SULi and IIED); (3) *Community-based approaches to tackling poaching and illegal wildlife trade: Five case studies of community-based approaches in Tanzania* (People Not Poaching Initiative, jointly published by IUCN SULi and IIED).

T-022 (KSR 10)

Strategy developed, agreed following consultation with SULi Steering Committee and membership, and published: 1

Result description: SULi members were invited to two online consultation events (to accommodate different time zones) to provide their feedback on a n initial draft. The comments received (together with comments provided by the SULi



Livelihoods of the rural communities in the Bay of Cispatá area, Colombia, depend greatly upon natural resources and wild species
Photo: ASOCAIMAN



Dilys Roe, SULi Chair, speaking as a panelist at the "Is Africa being heard? Hunting, Conservation and Livelihoods" Conference, Brussels, 2022
Photo: Alexander Louvet

Steering Committee) were used to refine the final version published on the SULI website (available at: https://iucnsuli.org/wp-content/uploads/2021/11/SULi-Strategy_2021-2025.pdf). This will be used as SULi's work plan for the 2021–2025 quadrennium.

Synergy

T-016 (KSR 10)

Establishment of One Programme Initiative to deliver the required actions of the Resolution: 1

Result description: SULi is working with IUCN ESARO and the Endangered Wildlife Trust (EWT) to develop a programme of work around Resolution WCC-2020-Res-076. This calls on all parts of the Union – Members, Commissions and Secretariat – to establish a One Programme Initiative to build and strengthen wildlife economies in Eastern and Southern Africa. An online event was held (August 2021) to raise awareness of the Resolution and to plan next steps for implementation. There has been additional follow up with an online survey to get a better understanding of the initiatives being undertaken in the region and get feedback from IUCN constituents to help design the One Programme which will help to deliver the actions of this Resolution.

T-020 (KSR 11)

Number of rural communities involved in species conservation programmes and sustainable use practices: 2

Result description: Online learning events have been held for the East African Community and Southern African Development Community and options for roll out with interested parties are under discussion, including a proposal submitted to the Illegal Wildlife Trade (IWT) Challenge Fund by WWF Tanzania. There are also training plans that IUCN ESARO has with BIOPAMA funds and the EA training and assistance, with roll out for Rwanda, Uganda and Tanzania with USAID CONNECT funding.

Technical advice

T-006 (KSR 11)

Number of sustainable use practices supported: 0

Result description: The situation analysis had a delayed start due to funding needed which has now been secured. The proposed scope of the analysis will combine elements of the original planned situation analysis (2016) with work Oxford University is leading to undertake new data analyses in Africa. SULi members will be called on to contribute evidence and to identify one person per IUCN region that can provide an overview of wildlife management in that region, and the role of hunting within it.

T-008 (KSR 11)

Number of sustainable use practices supported: 0

Result description: Initial consultations were held with technical and sustainable use experts to help with the database design. First phase of development is completed, and testing started. The documentation of practices won't begin until the database has been tested and goes live. Note that that consultation and development stage has also started to build internal capacity of SULi, by developing relationships with the SSC Conservation Committees (fungi, marine, plants, freshwater) to encourage early 'buy-in'.

T-009 (KSR 11)

Number of unsustainable use practices tackled: 1

Result description: (1) 30 March 2021: People not Poaching webinar 'Community-based rangers – an effective approach to tackling illegal wildlife trade?'. Joint IIED and SULi online event (see **https://www.iied.org/community-based-rangers-effective-approach-tackling-illegal-wildlife-trade**); (2) July 2021: 'Engaging local communities in tackling illegal wildlife trade – experience in the Southern African Development Community (SADC) region'. An online learning event organised by SULi and IIED (see **https://www.peoplenotpoaching.org/event/engaging-local-communities-tackling-illegal-wildlife-trade-experience-sadc-region**).

T-017 (KSR 10)

Number of motions prepared: 1

Result description: Urgent motion submitted at the IUCN World Conservation Congress and accepted as Resolution WCC-2020-Res-137 *Affirming the right of Indigenous Peoples and local communities to sustainably manage and utilise wild resources in the context of COVID-19* (**https://www.iucncongress2020.org/motion/137**).

T-020 (KSR 11)

Engaging communities as partners in combating the illegal wildlife trade (IWT): Ongoing.

Result description: Online learning events have been held for the East African Community and Southern African Development Community and options for roll out with interested parties are under discussion, including a proposal submitted to the IWT Challenge Fund by WWF Tanzania. There are also training plans that IUCN ESARO has with BIOPAMA funds and the EA training and assistance, with roll out for Rwanda, Uganda and Tanzania with USAID CONNECT funding.

NETWORK

Membership

T-013 (KSR 2)

Number of SSC members recruited: 385

Result description: SULi carried out a comprehensive review of its membership in preparation for the SSC membership renewal process. Three existing membership lists have been reconciled through individual outreach to members. We now have an up-to-date member list being used for the SULi D-Groups Listserv. A survey of the SULi members was carried out in August to

update the profiles of individual members, which is being used to identify gaps for recruitment (e.g. age, gender, geographic location, and expertise).

T-014 (KSR 2)

Number of SSC members recruited: 1

Result description: A SULi membership survey carried out in August 2021 was used to gauge the interest of members in participating in (potential) new working groups. This is now being analysed to inform the process of developing these groups. Very positive conversations have also been had with the Chairs of the Plant, Fungi and Marine Conservation Committees and the formation of a Plant Use Group is near to completion (with discussions continuing on a Fungi Use Group and a group focusing on the use of aquatic species). SULi members will also be allocated to geographic sub-groups (based on their location and geographic area of work and/or expertise) to better connect members in regions and provide a contact point to improve SULi's ability to identify, monitor and engage with sustainable use issues at the local, regional and national level.

Proposal development and funding

T-002 (KSR 3)

IUCN bodies with which the SSC group collaborates: 2

Result description: SULi has been working with IUCN ESARO and the Endangered Wildlife Trust (EWT) to implement the actions called for in Resolution WCC-2020-Res-076 (see Target coded T-016 for details).

Synergy

T-001 (KSR 1)

Number of 'funding' partners established and maintained: 1

Result description: SULi has a new funding partner – Jamma International – who is providing a grant over 23 months (ending 31 December 2022) to support the building of the group's capacity (including the funding of a full-time Technical Officer and a part-time Programme Officer and the development of the SULi database).

COMMUNICATE

Communication

T-012 (KSR 12)

Number of Species e-bulletin, Save Our Species newsletter, SSC Groups' newsletter editions produced: 4

Result description: The SULi Digest was published four times this year: (1) 15/12/2021: IUCN SULi Digest October–December 2021; (2) 13/10/2021: IUCN SULi Digest May–September 2021; (3) 06/05/2021: IUCN SULi Digest March & April 2021; (4) 01/03/2021: IUCN SULi Digest January & February 2021.

T-018 (KSR 12)

Technical and science-based support provided: ongoing

Result description: (1) We are co-developing (with IUCN) guidance on integrating indigenous and local knowledge into Red List assessments, to be finalised after peer reviewed comments are assessed; (2) we assisted with preparing responses for a possible UK ban on trophy hunting (including a letter to *The Times*), coordinating with Resource Africa and the Community Leaders Network; (3) a letter was written in response to proposed text on restricting wildlife trade – European Parliament's resolution on the EU Biodiversity Strategy for 2030; (4) we engaged with the SSC Situation Analysis on Covid-19 and Wildlife Trade; (5) guidance was written for maximising benefits of trade in CITES species to indigenous peoples and local communities (IPLCs; commissioned by the CITES Secretariat), which SULi members are being invited to contribute to; (6) initial discussions were held with the CITES Secretariat regarding collaboration to develop guidance for CITES Parties on engaging IPLCs in CITES processes; (7) we commissioned a survey to determine the public's response to a ban on trophy hunting in the UK. Results were distributed through SULi Twitter and also included in evidence submitted to a UK Parliamentary Committee inquiry on the draft Animals Abroad Bill; (8) submission to the Canadian consultation process on elephant ivory trade.

T-019 (KSR 12)

Annex published and included on IUCN Red List: ongoing

Result description: Ongoing discussions on how best to revise the guidelines has led to recognising the potential need for two sets of guidance – one as a shorter annex to the Red List and one as a longer more detailed set of stand-alone guidance. Additional consultation is required on this proposal with the Red List Committee (at the January 2022 meeting), and it is likely that a consultant will be hired for its completion.

T-021 (KSR 12)

Number of case studies collected, webinars hosted, briefings produced: 115

Result description: There are now 115 case studies on the People not Poaching (PnP) platform, which receives over 1,000 visitors per month on average and has a growing following on social media (more than 1,000 Twitter followers). In October, an article was published that analysed the PnP case studies to understand how many had been effective and how this has been measured (see **https://doi.org/10.3389/fcosc.2021.765725**). In March, a webinar was held showcasing PnP case studies where community members have been employed or volunteer as wildlife rangers. The webinar also featured a panel discussion on lessons learnt from these types of anti-poaching approaches (see **https://www.peoplenotpoaching.org/event/community-based-rangers-effective-approach-tackling-iwt**). Over the next few months a further two webinars are planned, as well as an overall synthesis of the case studies featuring voices from the field.

T-023 (KSR 12)

Communication Strategy developed, agreed and published: 0

Result description: A draft strategy is being finalised after consultation with a newly formed SULi communications working group (established to broaden the group's communication expertise and to have greater support and inputs from members into SULi communications activities). Input and guidance have also been provided by IIED's Head of Communications Research.

Acknowledgements

SULi wishes to acknowledge Jamma International for their generous financial support, which funds the position of Rachel Hoffmann (full-time Technical Officer) and Amanda Hull (part-time Programme Officer). These positions have provided invaluable support to SULi's work in 2021, by not only increasing the number and breadth of activities being worked on, but also helping to strategic develop the group to enhance its efficiency and effectiveness.

Summary of achievements

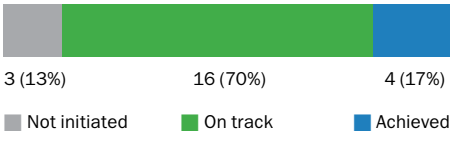
Total number of targets 2021–2025: 23

Geographic regions: 20 Global, 3 Africa

Actions during 2021:

Assess:	2 (KSR 5)
Plan:	1 (KSR 9)
Act:	9 (KSR 10, 11)
Network:	4 (KSR 1, 2, 3)
Communicate:	5 (KSR 12)

Overall achievement 2021–2025:



IUCN SSC Wildlife Health Specialist Group







SOCIAL MEDIA AND WEBSITE
Facebook: IUCN SSC Wildlife Health Specialist Group
Twitter: @IUCNWildHealth
Website: https://www.iucn.org/our-union/commissions/group/iucn-ssc-wildlife-health-specialist-group

CO-CHAIR
Richard Kock (Until December 2021)
Royal Veterinary College, London, UK

CO-CHAIR
William B. Karesh
EcoHealth Alliance, New York, US

CO-CHAIR
Tiggy Grillo (Since November 2021)
Wildlife Health Australia, Mosman, Australia

NUMBER OF MEMBERS
119

Mission statement

The group is commissioned to serve as a first response for wildlife health concerns relevant to conservation around the world. The focus of the group is on health impacts that relate to the conservation of species, some of which are negative to wildlife population persistence and a threat to endangered species.

Projected impact 2021–2025

The Wildlife Health Specialist Group is dedicated to amplifying wildlife health as an essential aspect of global conservation. By providing support on investigations following disease outbreaks, promoting the intersection of health and conservation, and contributing to global knowledge on zoonotic diseases, the group aims to promote the conservation status of threatened and protected species around the world.

Targets 2021–2025

ASSESS

T-005 Investigate five wildlife mass morbidity/mortality events.

PLAN

T-002 Adopt a policy for a simplified process for international movement of emergency diagnostic specimens of conservation species.

ACT

T-003 Deliver ten technical recommendations, and disseminate as appropriate.

T-008 Enhance wildlife health and One Health training programmes as a pathway to supporting species survival.

NETWORK

T-001 Expand membership representation to 100 countries.

T-007 Deliver ten external outreach events/materials/forums (e.g. policy conventions, social media) showcasing the relevance of wildlife health to One Health.

Activities and results 2021

PLAN

Planning

T-002 (KSR 8)

Number of conservation plans/strategies developed: achieved

Result description: WHSG participated in the intersessional working group established by the Standing Committee to explore the role of CITES in reducing risk of future zoonotic disease emergence associated with international wildlife trade (as per **CITES Notification No. 2021/031**). The **policy for a simplified process** for international movement of emergency diagnostic specimens of conservation species was adopted. Comments provided by the WHSG to CITES in the development and refinement of the Guidance on the use of the scientific exchange exemption and the simplified procedures were taken into consideration. Provided input into the **Global Action for Species (GSAP)** Action Plan Targets supporting implementation of the post-2020 Global Biodiversity Framework.

ACT

Technical advice

T-003 (KSR 10)

Number of technical recommendations delivered: 3

Result description: Contributed to the Joint FAO, IUCN SSC and the WOAH [formerly OIE] communique “Conservation impacts of African swine fever in the Asia-Pacific region,” which calls for countries in the region to develop stronger policies and implement strategies to mitigate the impacts of ASF on wildlife, livestock health, and rural livelihoods. Published an analysis of the conservation status of species reported via WAHIS-Wild, "Wildlife conservation status and disease trends: ten years of reports to the Worldwide Monitoring System for Wild Animal Diseases, OIE Scientific and Technical Review,” helping to bridge conservation and wildlife health coordination. Dr. Karesh served as the IUCN SSC representative on the WOAH ad hoc group on reducing spillover risks associated



Curious Grey Fox, *Urocyon cinereoargenteus*, kits playing in Vermont, US
Photo: Catherine Machalaba

with wildlife trade. Submitted a response supporting the European Chemical Agency (EHSA) restriction proposal on use of lead in outdoor shooting and fishing. Contributed to the IUCN Rewilding Working Group.

T-008 (KSR 10)

Number of technical consultations provided to support conservation actions: 2

Result description: Provided ongoing support and input on measures to reduce disease transmission risk between humans and free-ranging wildlife, including with other IUCN specialist groups.

NETWORK

Membership

T-001 (KSR 2)

Number of SSC members recruited: 86

Result description: We added our first member from Bangladesh and appointed a new regional coordinator to enhance regional communications and networks.

Synergy

T-007 (KSR 4)

Number of events/materials/forum delivered: 3

Result description: Dr. Karesh served as the Moderator of the World Conservation Congress High Level Dialogue event One Earth – One Heath: how we can prevent and mitigate future pandemics during the IUCN Congress. In collaboration with EcoHealth Alliance, assisted in collecting case studies on One Health and zoonotic and wildlife disease management for the PANORAMA Solutions for a Healthy Planet, Species Portal.

Acknowledgements

The WHSG chairs and members extend their gratitude to Dr. Richard Kock, who served as a dedicated WHSG Co-Chair for many years. We wish to thank EcoHealth Alliance, the Royal Veterinary College, and Wildlife Health Australia for providing in-kind support for WHSG activities. We are grateful for the assistance of Ms. Kelly Rose Nunziata, WHSG Program Officer, the WHSG Regional Coordinators, and WHSG expert members.

Summary of achievements

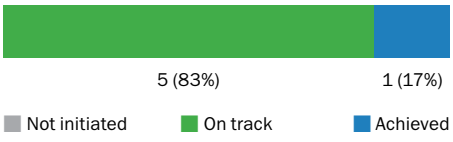
Total number of targets 2021–2025: 6

Geographic regions: 6 Global

Actions during 2021:

Plan: 1 (KSR 8)
Act: 2 (KSR 10)
Network: 2 (KSR 2, 4)

Overall achievement 2021–2025:



IUCN SSC Asian Species Action Partnership Specialist Group



CHAIR
Simon Stuart
Synchronicity Earth,
London, UK

NUMBER OF MEMBERS
202

SOCIAL MEDIA AND WEBSITE
Instagram: @iucn_asap
Twitter: @IUCN_ASAP
Website: **https://www.speciesonthebrink.org**

Mission statement

Avert the extinctions of Critically Endangered land and freshwater vertebrates in Southeast Asia.

Projected impact 2021–2025

We envision a number of Asian Species Action Partnership (ASAP) species (Critically Endangered land and freshwater vertebrates found in Southeast Asia) will have benefited from effective conservation action. ASAP will have: created an enabling environment to catalyse effective conservation action for ASAP species, with a focus on those most neglected, and increased funding available for the conservation of ASAP species. ASAP Partners will be better able to improve conservation outcomes of ASAP species through enhanced skills and capabilities, with a growing number of conservation leaders ready to take on the challenges of species conservation. The conservation needs of ASAP species will be more widely understood and acknowledged and greater conservation action occurring with the increased awareness of the urgent need to end ASAP species extinctions.

Targets 2021–2025

PLAN

T-003 Identify and prioritise, by 2022, a list of ASAP species that would benefit from *ex situ* intervention.

ACT

T-004 Catalyse an *ex situ* species recovery project for at least one ASAP species by 2024.

T-005 Fund the conservation of at least five 'neglected' ASAP species by 2023.

T-006 Provide technical advice and support to at least ten ASAP Partners by 2025.

NETWORK

T-001 Increase the ASAP Partnership to at least 200 Partner organisations by 2025.

T-002 Hold at least two training sessions by 2023 for ASAP Partners in skills to build capacity for ASAP species conservation (e.g. project management, strategy development).

COMMUNICATE

T-007 Publish four ASAP Newsletters annually.

T-008 Raise the profile of ASAP species conservation and/or ASAP Partners through at least five articles or social media campaigns by 2023.

Activities and results 2021

ACT

Conservation actions

T-005 (KSR 10)

Number of threatened species benefiting from *in situ* conservation action: 7

Result description: Seven projects were funded supporting *in situ* conservation action of neglected ASAP species.

Technical advice

T-006 (KSR 10)

Number of technical consultations provided to support conservation actions: 8

Result description: ASAP continues to support the partnership with advice and support and connects ASAP Partners with external stakeholders to allow them to access the relevant support they need.

NETWORK

Capacity building

T-002 (KSR 2)

Number of people trained in management skills: 30

Result description: Project management for wildlife conservation training was carried out for 16 participants from ASAP Partner organisations. The ASAP Women in Conservation Leadership Programme launched in 2021 with 14 participants completing three training modules.



ASAP Women in Conservation Leadership Programme participant
Photo: Lan Ho/Save Vietnam's Wildlife



Forsten's Tortoise (*Indutestudo forstenii*) from Central Sulawesi
Photo: Sheherazade/PROGRES



ASAP Partner PROGRES engaging with the local community as part of their Talaud Bear Cuscus conservation outreach efforts
Photo: Sheherazade/PROGRES

Membership

T-001 (KSR 2)

Number of SSC members recruited: 42

Result description: An additional 42 organisations joined as ASAP Partners in 2021, bringing membership to 202 ASAP Partners.

COMMUNICATE

Communication

T-007 (KSR 13)

Number of digital communication outputs developed in relation to specific taxonomic groups: 3

Result description: Three newsletters were produced in 2021.

T-008 (KSR 13)

Number of digital communication outputs developed in relation to specific taxonomic groups: 3

Result description: We publish ongoing social media posts and ASAP website articles (see https://www.speciesontheb-rink.org/news/articles/). A feature in ASEAN Focus magazine was published (see https://www.iseas.edu.sg/wp-content/uploads/2021/09/ASEANFocus_Sept_2021_FA_Digital_Compressed.pdf), along with an IUCN Position Paper on the Conservation of the Saola.

Acknowledgements

We are extremely grateful for the continued financial support from our donors. During these difficult times, their support has enabled us to continue delivering on our mission. We are particularly grateful to Mandai Nature as the host organisation to the ASAP Secretariat and financial contributor. We are extremely grateful to Fondation Segré and an anonymous donor for their support of the ASAP species conservation grant programmes. We extend our warmest thanks to all the organisations that have contributed financially to ASAP this year: IUCN SSC through their partnership with the Environment Agency – Abu Dhabi, European Association of Zoos and Aquaria (EAZA), Synchronicity Earth and an anonymous donor. We also thank all the individuals who have contributed to the various elements of our work throughout the year. The conservation of ASAP species would not be possible without the continued dedication and innovative approaches of ASAP Partners, along with the donors who support their work.

Summary of achievements

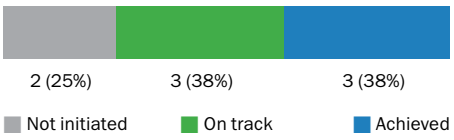
Total number of targets 2021–2025: 8

Geographic regions: 8 Asia

Actions during 2021:

Act: 2 (KSR 10)
Network: 2 (KSR 2)
Communicate: 2 (KSR 13)

Overall achievement 2021–2025:



IUCN SSC / CEESP Biodiversity & Family Planning Task Force





CO-CHAIR
Carina Hirsch
Margaret Pyke Trust

CO-CHAIR
David Johnson
Margaret Pyke Trust

NUMBER OF MEMBERS
25

Mission statement

Removing barriers to rights-based voluntary family planning can strengthen conservation outcomes and contribute to climate change adaptation and resilience building. By implementing WCC-2020-Res-072 *Importance for the conservation of nature of removing barriers to rights-based voluntary family planning*, this inter-Commission Task Force will operate for two IUCN quadrennial periods, commencing in 2021 and ending in 2028. The overarching objective of the Task Force is to support IUCN to embed the importance of removing barriers to rights-based voluntary family planning in relevant processes, policies and guidance materials.

Projected impact 2021–2025

Individuals representing IUCN, its Commissions, Members and other constituent parts, have increased knowledge of the importance of rights-based voluntary family planning (and the complementary benefits for biodiversity conservation and climate adaptation and resilience, of meeting the reproductive needs of women and girls). IUCN policies and procedures begin to change to recognise that SDG target 3.7, "ensure universal access to sexual and reproductive health-care services, including for family planning, information and education, and the integration of reproductive health into national strategies and programmes" is critical not only for health, wellbeing and empowerment targets, but can also strengthen conservation outcomes.

Targets 2021–2025

ASSESS

T-004 Develop a work plan on how to support the process of seeking changes to National Biodiversity Strategies and Action Plans (NBSAPs) in general and/or a work plan on changing a specific NBSAP.

PLAN

T-005 Develop (a) an education and training programme on how improved reproductive health benefits women's and girls' health and empowerment, reduces pressures on ecosystems and ecosystems services, and enhances sustainable development, and how such issues can be included in project planning; and (b) a delivery plan on the roll out of such training programme to benefit not fewer than 1,000 IUCN representatives.

NETWORK

T-001 Finalise Task Force Terms of Reference, following best international practice in relation to the Task Force membership in terms of geographical, gender and relevant topical diversity, and that no fewer than 20 experienced individuals are admitted to the Task Force.

T-002 Formalise relationship with Focal Points at the Commission on Environmental, Economic and Social Policy (CEESP), SSC and other relevant IUCN bodies and establish a plan on how those Commissions and bodies can further the work of the Task Force.

T-003 Establish a formal partnership with organisation(s) which can be used as the relevant national focal point to work with the Task Force to seek to influence a National Biodiversity Strategy and Action Plan(s).

COMMUNICATE

T-006 Share publication promoting the Task Force with conservation and health organisations.

T-007 Share one publication on rights-based reproductive health indicators.

T-008 Produce a publication reporting on the importance of broader applicability of barriers to family planning needs.

T-009 Deliver the education and training programme on family planning and biodiversity.

T-010 Promote the outcome of the Task Force's NBSAP work plan.



The IUCN Biodiversity & Family Planning Task Force was launched at COP26 in Glasgow, at the event «Removing barriers to health and education»
Photo: BFPTF archives

Activities and results 2021

PLAN

Planning

T-005 (KSR 8)

Number of technical documents to support the development of conservation plans/ strategies: ongoing

Result description: We have developed concepts for a series of modules representing the priority areas of learning on this topic. We are delighted that numerous Task Force members will be inputting their particular expertise in conservation, demography, reproductive rights and integrated programming to ensure the training modules are rich, interesting and speak to conservationists' desire and need to speak on and engage with authority and nuance on this topic.

NETWORK

Capacity building

T-003 (KSR 3)

Number of SSC members recruited: ongoing

Result description: This is an exciting area of work which we are developing and are focusing particularly on Ethiopia and Uganda, working closely with partners in these countries, whose representatives are also members of the Task Force. At this stage, we are seeking to better understand the extent to which health is already (or not) considered within environmental planning and policy documents and how we can influence these processes. We are also working with health partners to better understand where opportunities lie within that sector to influence such policies and documents.

Membership

T-001 (KSR 2)

Number of SSC members recruited: achieved

Result description: We are happy to report the Task Force has a balanced membership in terms of gender, geographical representation and topical areas of expertise. The membership is active in regular Task Force meetings, the established working groups and also responding to ad hoc opportunities to influence policy and/or input into policy consultations, such as as the recent UK Government's 2030 Strategic Framework for International Climate and Nature Action, for which the Task Force made its own submission.

T-002 (KSR 2)

Number of SSC members recruited: ongoing

Result description: We are delighted to be working closely with a variety of IUCN representatives, particularly within CEESP and SSC. For example, even before the establishment of the Task Force, we worked closely with the Chair of the Gender Specialist Group within CEESP and are now continuing to foster this important relationship. There are numerous members of the SSC represented on the Task Force providing excellent support and professional insights. Furthermore, the SSC Network Coordinator and their team have been instrumental in providing guidance to us in our 'start up' phase and have also inspired us to think beyond the next few years towards a long-term vision of the work to mainstream barriers to family planning as a conservation issue. There are many others within IUCN, including the Gender office, with whom we are working to ensure the gender and empowerment agenda is more embedded within IUCN policies, documents and overall workplans.

Summary of achievements

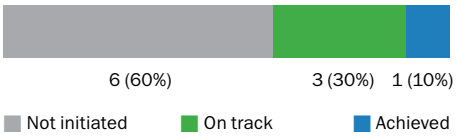
Total number of targets 2021–2025: 10

Geographic regions: 10 Global

Actions during 2021:

Plan: 1 (KSR 8)
Network: 3 (KSR 2, 3)

Overall achievement 2021–2025:



IUCN SSC Global Freshwater Macroinvertebrate Sampling Protocols Task Force





CO-CHAIR
John Simaika
IHE Delft Institute for Water Education, Stellenbosch, Delft, The Netherlands

CO-CHAIR
Andreas Bruder
University of Applied Sciences and Arts of Southern Switzerland, Bellinzona, Switzerland

NUMBER OF MEMBERS
15

Mission statement

Invertebrates are functionally vital to aquatic ecosystems and can indirectly or directly affect human health and well-being. The IUCN SSC Task Force on Global Freshwater Macroinvertebrate Sampling Protocols (GLOSAM) aims to: (1) support the application of bioassessment based on benthic freshwater invertebrates, and (2) establish efficient bioassessment schemes through the standardisation and coordination of sampling protocols across countries.

Targets 2021–2025

ASSESS

T-002 Identify protocols used in other countries and regions and obtain copies for use in this project.

T-003 Establish global overview of macroinvertebrate protocols, including the history of their origin, regulatory context (constraints, traditions) and use.

T-004 Translate into English protocols that are written in a language other than English.

T-005 Participate in developing an agreed plan and timetable for completing the harmonisation of the protocols.

T-006 Participate in setting criteria for assessing the suitability of sampling protocols in biodiversity assessments of freshwater ecosystems.

T-007 Participate in developing guidelines for adjusting sampling effort in using suitable protocols for biodiversity assessments.

T-008 Evaluate one or more sampling protocols using the agreed criteria and guidelines. Adapt the criteria and guidelines based on case studies.

T-009 Contribute to the writing of the harmonised protocol document and a scientific manuscript describing these protocols and exploring their contribution to regional and global assessments of freshwater biodiversity.

T-010 Translate the harmonised protocol in other languages if this is a requirement for its adoption and application in other countries and regions.

NETWORK

T-001 Network within and beyond SSC. Grow membership of the Task Force.

T-011 Promote the harmonised protocol in respective countries, regions and networks.

Activities and results 2021

ASSESS

Research activities

T-002 (KSR 5)

Number of identified protocols: 50

Result description: Through its membership, GLOSAM has started to identify the protocols used in other countries. This task links with the target to 'Establish global overview of macroinvertebrate protocols'. The framework building for the review has already begun. GLOSAM is a small group, and therefore is working towards a resource-lean strategy for major tasks such as building a database of the protocols used worldwide and operationalizing case study areas.

NETWORK

Membership

T-001 (KSR 2)

Number of SSC members recruited: 15

Result description: The Task Force had its first meeting on 20 July 2021. GLOSAM started with 11 members. Three members are from the SSC, two of which are SSC Chairs: Craig Macadam, who co-chairs the Mayfly, Stonefly and Caddisfly Specialist Group and Mary Seddon, Chair of the Mollusc Specialist Group. Two members are the Co-Chairs of the Freshwater Biodiversity Observation Network (FWBON), Andreas



The endangered Ceres Streamjack (*Spesbona angusta*), a river pool specialist endemic to the Western Cape Floristic Region of South Africa
Photo: John P. Simaika



The Wit River (White River) of Bainskloof Pass, near Wellington, South Africa. This high elevation stream is home to a remarkably high number of aquatic macroinvertebrates found nowhere else in the world
Photo: John P. Simaika

Bruder (also Task Force Co-Chair) and Jen Lento. FWBON is a partner organization to GLOSAM. There are currently 15 members in the core group, representative of the main regions of the world. The core group, while now at its maximum, is in flux, with two of the original members having left due to work/life challenges. In the meantime, these members have been replaced by new experts. GLOSAM has also established an advisory to the core group (members who meet monthly and progress the SSC targets). Currently, GLOSAM has five advisors. The advisory consists of members who, when called upon, help give the Task Force strategic direction and advice. These members are required to join regular meetings not more than twice a year. By mid-2023, there will be 10 advisory members. The remaining 25 places for members are for non-core members. These Task Force members will be tasked with to advancing the case study work of the Task Force.

Acknowledgements

We would like to acknowledge an IHE alumni, Miral Adil, for designing GLOSAM's logo.

Summary of achievements

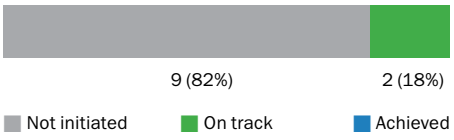
Total number of targets 2021–2025: 11

Geographic regions: 11 Global

Actions during 2021:

Assess: 1 (KSR 5)
Network: 1 (KSR 2)

Overall achievement 2021–2025:



2021 Report

IUCN SSC Green Status of Species Task Force





CO-CHAIR
Molly Grace
Department of Biology, University of Oxford, Oxford, UK

CO-CHAIR
Barney Long
Global Wildlife Conservation, Austin, Texas, US

NUMBER OF MEMBERS
23

Mission statement

To develop a 'Green Status of Species' to document and incentivise successful species conservation and recovery.

Projected impact 2021–2025

Launch and implement the Green Status of Species (GSS) to quantify species recovery and conservation impact.

Targets 2021–2025

ASSESS

T-001 Launch the Green Status of Species.

T-002 Establish Green Status team within the Red List Unit of IUCN.

T-003 Update Red List infrastructure (IUCN Species Information Service (SIS) and website) to provide integrated delivery of Red List and Green Status assessments.

T-005 Complete 5,000 GSS assessments by 2025.

NETWORK

T-004 Develop GSS assessment training materials and delivery method.

Activities and results 2021

ASSESS

Green Status

T-001 (KSR 6)

Number of technical documents provided to support Red List assessments/reassessments: 2

Result description: The Green Status of Species Standards were published, and Green Status of Species guidelines are available.

T-003 (KSR 6)

SIS and Red List website able to hold GSS data and assessments: Ongoing

Result description: The Red List website was expanded to hold GSS data. Funding was secured for further website upgrades. Funding was also secured for partial SIS development and SIS can now hold some Green Status information, though development is ongoing.

T-005 (KSR 6)

Number of new Green Status of Species assessments completed: 26

Result description: Twenty-six assessments have been published, with more under development (>200 preliminary assessments as candidates for review and publication).

NETWORK

Capacity building

T-004 (KSR 2)

Training materials developed and online training videos produced: ongoing

Result description: Funding for online training was secured. Seven modules have been outlined and are in development for delivery in September 2022. Agreement with The Nature Conservancy has been reached to host the training alongside Red List training.

Acknowledgements

The Green Status of Species Task Force would like to thank the following institutions for their time and contributions to the efforts of the group: Re:wild, Wildlife Conservation Society, Oxford University, IUCN, Durrell Conservation Trust and Stonybrook University. We would also like to thank the following who provided financial support to the development and implementation of the Green Status of Species: WWF US, NERC Knowledge Exchange Fellowship, IUCN SSC, Re:wild, Fondation Franklinia, Cambridge Conservation Initiative, Lyda Hill Philanthropies.



Summary of achievements

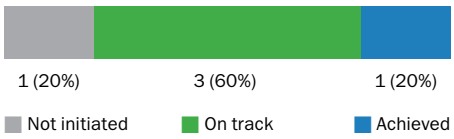
Total number of targets 2021–2025: 5

Geographic regions: 5 Global

Actions during 2021:

Assess: 3 (KSR 6)
Network: 1 (KSR 2)

Overall achievement 2021–2025:





2021 Report

IUCN SSC Human-Wildlife Conflict Task Force



CHAIR
Alexandra Zimmermann
WildCRU, University of Oxford, UK

NUMBER OF MEMBERS
28

SOCIAL MEDIA AND WEBSITE
Facebook: @hwctf
Twitter: @hwctf
Website: **https://www.hwctf.org**

Mission statement

The mission of the IUCN SSC Task Force on Human-Wildlife Conflict is to support the IUCN SSC network in addressing human-wildlife conflict (HWC) by providing interdisciplinary guidance and expert support, through an integration of ecological and social sciences.

Projected impact 2021–2025

The IUCN SSC Human-Wildlife Conflict Task Force aims to ensure that where human-wildlife conflict might be a threat to a species' conservation status, stakeholders tasked with addressing the situation are knowledgeable, have capacity and resources available to ensure that the situation is addressed appropriately without negatively affecting the conservation status of the species.

Targets 2021–2025

ASSESS

T-002 Expand and maintain the IUCN SSC HWC Resource Library by adding four pages in addition to 50 resources, per year.

T-004 Lead/coordinate a global assessment on human-wildlife conflict.

T-006 Act as a think tank on the latest issues in HWC, producing one paper per year.

T-015 Ensure publications produced by the Task Force are cited 10 times and downloaded from the Task Force website 100 times per year.



Lion killing a donkey on the boundary of Makgadikgadi Pans National Park, Botswana
Photo: James Stevens



Nets for deterring bats in Mauritius
Photo: Alexandra Zimmermann

PLAN

T-005 Provide input to international policy on HWC-related matters for at least two global policies.

T-018 Contribute to four species conservation plans.

ACT

T-007 Hold International Conference on Human-Wildlife Conflict and Coexistence.

T-008 Lead and/or facilitate 10 virtual events in the build up to the International Conference on Human-Wildlife Conflict and Coexistence.

T-013 Publish the IUCN SSC Guidelines on Human-Wildlife Conflict.

NETWORK

T-011 Support and assist four IUCN SSC groups in the development of taxon-specific HWC guidelines and policies.

T-014 Secure two new funding partnerships for the Task Force's work.

T-016 Increase membership of the Task Force by 30% to address topic or species gaps where they exist.

T-019 Work with two governments to develop or improve their HWC policies.

T-020 Develop one community of practice (COP) around the IUCN SSC Guidelines on Human-Wildlife Conflict.

T-021 Initiate IUCN training course on human-wildlife conflict and coexistence.

COMMUNICATE

T-003 Publish a quarterly newsletter providing the latest publications, news about events and other HWC related information.

T-017 Publish two HWC publications and contribute to four media articles referencing SSC.

Activities and results 2021

ASSESS

Communication

T-002 (KSR 5)

Number of new topic, species or further resources pages added to the resource library: 2

Result description: Two pages were added to the Human-Wildlife Conflict & Coexistence Library in 2021. A topic page was added with resources on the cultural dimensions of human-wildlife conflict and a species page was added for resources on human-pinniped conflict.

Number of resources added to the resource library in addition to pages: 200

Result description: Over 200 papers were added to the Human-Wildlife Conflict & Coexistence Library in 2021. Resources were added on a monthly basis and pages highlighting the monthly additions for the last six months have been added to the library for easy access.

T-015 (KSR 5)

Number of readings/citations per scientific paper published: 5

Result description: The *IUCN SSC Position Statement on the Management of Human-Wildlife Conflict* has been cited by five publications in 2021.

Number of times publication downloaded from Task Force website: 457

Result description: The *IUCN SSC Position Statement on the Management of Human-Wildlife Conflict* was downloaded from the Task Force website in English, French, Spanish and Portuguese 229 times. The IUCN SSC Human-Wildlife Conflict Task Force *What is human-wildlife conflict?* briefing paper was downloaded from the Task Force website 228 times.

PLAN

Policy

T-005 (KSR 9)

Number of policies where SSC members provided technical input: 1

Result description: The Chair, Programme Officer and members continue to engage and participate in discussions with various organisations on including human-wildlife conflict within the Convention on Biological Diversity (CBD) Post-2020 Global Biodiversity Framework and developing indicators to support the monitoring of the issue.

African elephant crossing a fence in Makgadikgadi Pans National Park, Botswana
Photo: James Stevens





Elephants and people in a tea garden in Assam, India
Photo: Assam Haathi Project

ACT

Conservation actions

T-013 (KSR 10)

Number of technical documents provided to support conservation actions: 0

Result description: The Task Force is producing IUCN Guidelines on Human-Wildlife Conflict and Coexistence, which consists of around 30 chapters on all aspects of managing human-wildlife conflicts. The Guidelines are in the final stages of drafting, following which a pilot testing will be conducted in 2022 with a wide range of stakeholders. Engagement with stakeholders has already begun with interest received from nearly 40 different parties wishing to participate in the user-testing of the Guidelines pilot version.

Synergy

T-007 (KSR 10, 11)

Number of conferences held: 0

Result description: Despite postponing the International Conference on Human-Wildlife Conflict and Coexistence again in 2021, interest in the event remains high. The conference was sold out to 600 delegates within six weeks, with over 700 abstracts submitted. The conference programme included over 120 presentations and nearly 70 posters arranged into an exciting and interactive programme. Over 400 people are currently on the waiting list in case spaces become available. The current COVID situation once again presents uncertainties, but we hope to be able to hold the event in late 2022.

Number of events supporting sustainable use practices to improve governance for people and nature: 0

Result description: See previous result description. The conference programme included supporting sustainable use practices to improve governance for people and nature.

T-008 (KSR 10)

Virtual events held: 3

Result description: In September 2021,



Cattle killed by a jaguar
Photo: Alexandra Zimmermann



Livestock depredation by lions in Botswana
Photo: James Stevens

during the IUCN World Conservation Congress, we organised a press conference on 'Addressing the global challenge of human-wildlife conflict'. The press conference discussed what action is needed to achieve human-wildlife coexistence, and how IUCN is convening efforts for improving knowledge and practice to this aim. In September 2021, in collaboration with the Food and Agricultural Organisation of the United Nations, we hosted a session during the Collaborative Partnership on Sustainable Wildlife Management (CPW) Wildlife Forum on monitoring human-wildlife conflicts for the post-2020 Global Biodiversity Framework. A recording of the session can be accessed here: https://youtu.be/C6cM6nu7TJY?t=8685. In December 2021, we also held our first webinar in our new learning in practice webinar series on engagement and ethics of working with communities. The webinar discussed the issue of engagement and ethics via the discussion of three case studies from Guyana, India and Tanzania with Task Force members involved in a moderated discussion.

NETWORK

Synergy

T-011 (KSR 3)

Collaborations on taxon-specific HWC guidelines and policies: 2

Result description: The Task Force continued to collaborate with the IUCN SSC Asian Elephant Specialist Group on developing IUCN SSC Guidelines for Human-Elephant Conflict Mitigation in Asia following work conducted in 2020, and while the guidelines are still a focus, no work was conducted in 2021. The Task Force was contacted by the IUCN SSC Primate Specialist Group regarding plans to update the *Best Practice Guidelines for the Prevention and Mitigation of Conflict Between Humans and Great Apes* and how the two groups can work together to ensure any guidelines are complementary.

T-014 (KSR 1)

Number of 'funding' partners established and maintained: 2

Result description: In 2021, we secured two grants to assist with the work of the Task Force. In collaboration with the Food and Agricultural Organisation of the United Nations, we will be developing case studies on human-wildlife conflict to complement our IUCN Guidelines on Human-Wildlife Conflict and Coexistence that are being developed. This grant will come to an end in 2021, but we have now signed a contract for the second stage of work to be conducted in 2022, to continue the work. Elephant Family continue to fund the Programme Officer part-time to facilitate the group in its work. They have been funding the Programme Officer since 2019 in this role.

COMMUNICATE

Communication

T-003 (KSR 12)

Number of Species e-bulletin, Save Our Species newsletter, SSC Groups' newsletter editions produced: 2

Result description: The Task Force launched their Human-Wildlife Conflict Quarterly Newsletter in July 2021 and have published two issues to date. In December 2021, the newsletter already had 359 subscribers.

T-017 (KSR 12)

Number of media articles mentioning IUCN Species theme: 1

Result description: The Chair provided input to an article in *The Guardian* on how human-wildlife conflict will be impacted by climate change, following up from the 26th United Nations Climate Change conference (COP26). The article can be found here: https://www.theguardian.com/environment/2021/nov/19/scorpion-plagues-sharks-on-the-move-has-cop26-done-enough-for-nature-aoe.

Number of publications completed: 2

Result description: The Chair and Programme Officer wrote a blog for the IUCN World Conservation Congress on managing human-wildlife conflict in a rapidly changing climate. The blog was distributed via the IUCN Congress newsletter and resulted in lots of interest from researchers in the field. The blog can be found here: https://www.iucncongress2020.org/newsroom/all-news/managing-human-wildlife-conflict-rapidly-changing-climate. The Chair and Programme Officer published a news article in the journal *Oryx*, summarising the key points from the *IUCN SSC Position Statement on the Management of Human-Wildlife Conflict*. To date, the article has been downloaded over 250 times.

Acknowledgements

We thank Elephant Family for funding the salary of our Programme Officer and Editorial Officer, and the Wildlife Conservation Research Unit of Oxford University for hosting the Task Force. We thank the Food and Agricultural Organisation of the United Nations for funding our work developing case studies on human-wildlife conflict and Chester Zoo for funding the Chair and Programme Officer to attend the IUCN World Conservation Congress in Marseille, France.

Summary of achievements

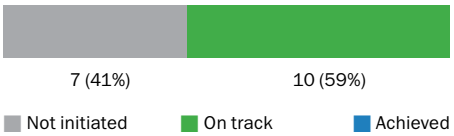
Total number of targets 2021–2025: 17

Geographic regions: 16 Global, 1 Europe

Actions during 2021:

Assess:	4 (KSR 5)
Plan:	1 (KSR 9)
Act:	4 (KSR 10, 11)
Network:	2 (KSR 1, 3)
Communicate:	3 (KSR 12)

Overall achievement 2021–2025:



IUCN WCPA/SSC Marine Mammal Protected Areas Task Force





SOCIAL MEDIA AND WEBSITE
Facebook: @IUCNMMPATF
Twitter: @mmpatf
Website: https://www.marinemammalhabitat.org

CO-CHAIR
Giuseppe Notarbartolo di Sciara
Tethys Research Institute, Milano, Italy

CO-CHAIR
Erich Hoyt
Whale and Dolphin Conservation, Chippenham, Wiltshire, UK

DEPUTY CHAIR
Gill Braulik
University St Andrews, UK

NUMBER OF MEMBERS
49

Mission statement

The Marine Mammal Protected Areas Task Force (MMPATF) was created in 2013 by the International Committee on Marine Mammal Protected Areas (ICMMPA), the International Union for the Conservation of Nature's (IUCN) World Commission on Protected Areas (WCPA) Marine Vice Chair, and the Chair of IUCN's Species Survival Commission (SSC) to help support a stronger global profile and to provide a stronger voice for the MMPA constituency within IUCN. The goal of the MMPATF is to facilitate mechanisms to encourage collaboration, sharing information and experience to access and disseminate knowledge and tools for establishing, monitoring, and managing MMPAs and promoting effective spatial solutions and best practices for marine mammal conservation. The primary goal of the Task Force has been identifying Important Marine Mammal Areas (IMMAs) around the globe. IMMAs are defined as discrete portions of habitat, important to marine mammal species, that have the potential to be delineated and managed for conservation.



Caspian seal (*Pusa caspica*)
Photo: Nataliya Shumeyko

Projected impact 2021–2025

By bringing to the attention of managers, decision makers and the general public the presence and whereabouts of important marine mammal areas, we are facilitating



Black Sea Common Dolphin (*Delphinus delphis* ssp. *ponticus*) Photo: Elena Gladilina



Endangered Black Sea Bottlenose Dolphin (*Tursiops truncatus* ssp. *ponticus*) Photo: Elena Gladilina

the consideration of marine mammal habitats in decisions concerning marine spatial planning and the planning of human activities at sea that have or can have a negative impact on marine mammal status. IMMAs have also been brought to the attention of policymakers, having been the subject of Convention on Migratory Species (CMS) Resolution 12.13. Most of this work, however, is still in the potential status given the recent date in which IMMAs have been made public. Impact on marine mammal conservation status from IMMAs is indirect because IMMAs are a knowledge product that is available and actionable by decision makers and marine users when planning and/or regulating human activities in marine spaces containing marine mammal habitat. Nevertheless, the impact can be substantial (e.g. when Navies decide to refrain from using high-intensity sonar inside IMMAs), but we haven't yet devised ways to enable us to measure it.

Targets 2021–2025

ASSESS

T-001 Complete Important Marine Mammal Areas (IMMA) identification in the South East Tropical and Temperate Pacific Ocean and continue with the process in the Atlantic Ocean.

T-003 Complete identification of Important Marine Mammal Areas (IMMAs) in the Black Sea and Caspian Sea.

T-005 Develop and apply a set of IMMA implementation indicators.

T-007 Complete Important Marine Mammal Area (IMMA) identification in the South West Atlantic Ocean, to be held in Brazil in December 2022.

PLAN

T-006 Produce an Implementation Guidance 'Route Map' for IMMA Users.

NETWORK

T-002 Improve streamlining between the IMMA and the Key Biodiversity Area (KBA) process.

T-008 Support the development of Important Shark and Ray Areas (ISRAs).

COMMUNICATE

T-004 Raise awareness of IMMAs as a tool for conservation planning and threat mitigation through maintenance of the e-Atlas, scientific publications, conference presentations and use of other (social) media.

Activities and results 2021

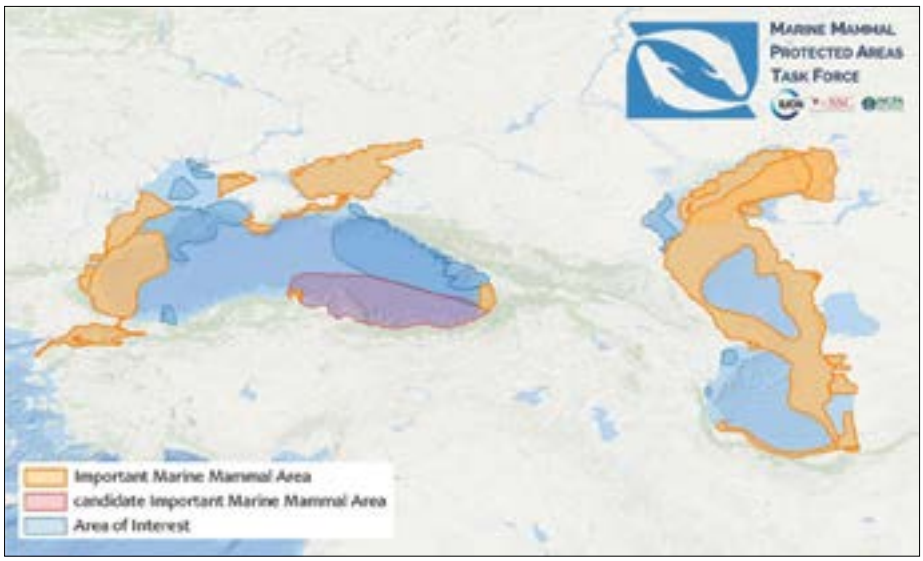
ASSESS

Communication

T-003 (KSR 5)

Black Sea and Caspian Sea IMMAs posted on e-Atlas: 2

Result description: This was our 7th IMMA Regional Work Programme and the first time we convened scientists in a multi-day workshop entirely online. The IMMA identification in the Black Sea, Turkish Straits System and the Caspian Sea



Map showing Important Marine Mammal Areas (IMMAs) identified in the Black Sea, Turkish Straits and Caspian Sea region including 14 IMMAs, 1 candidate IMMA and 11 Areas of Interest
Photo: IUCN SSC-WCPA Marine Mammal Protected Areas Task Force

was completed in 2021, by means of a virtual online workshop: https://www.marinemammalhabitat.org/download/final-report-on-the-important-marine-mamma-area-regional-workshop-for-the-black-sea-turkish-straits-system-and-caspian-sea/.

Planning

T-001 (KSR 6)

Number of regions where IMMAs are identified: 0

Result description: A regional expert workshop to identify IMMAs in the South East Tropical and Temperate Pacific Ocean, is planned to be held in Costa Rica in June 2022, having been postponed twice due to COVID-related problems. Meanwhile, funding has been secured for another regional expert workshop to identify IMMAs in the South West Atlantic Ocean, which is planned for December 2022.

T-005 (KSR 6)

Indicators applied across IMMA network of sites: 0

Result description: We wish to include as collaborators in this target Tundi Agardy and Anne Nelson, Task Force Members and co-authors of the MMPATF paper on Early Warning Systems and IMMAs (Agardy, T., et al. 2019. Looking beyond the horizon: An early warning system to keep marine mammal information relevant for conservation. *Aquatic Conservation: Marine and Freshwater Ecosystems* 29(S2):71–83. https://doi.org/10.1002/aqc.3072). Four webinars were held with the partners of the Proteus network in association with UNEP-WCMC. These meetings acted to aid consultation on the better use and supply of IMMA information to ocean industries. Results of this consultation allowed for better access, licensing and data reporting standards to screen for and mitigate against the impact on marine mammal habitat during marine activities. This new information can be presented as part of a future guidance document for IMMA implementation users.

PLAN

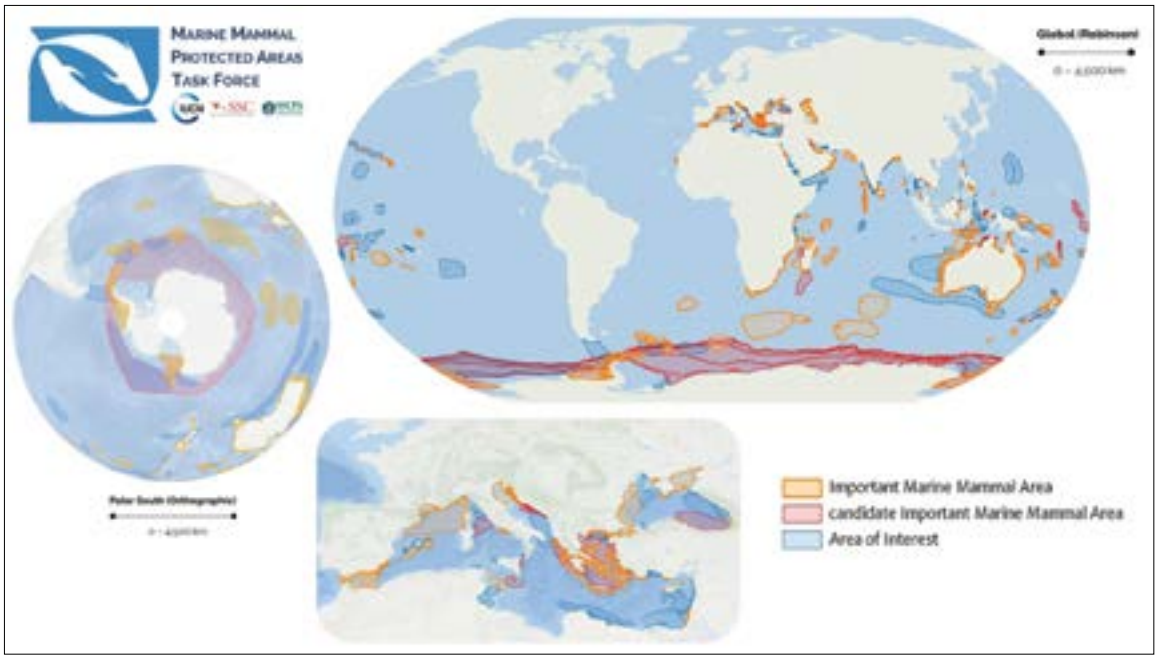
Planning

T-006 (KSR 8)

Provide guidance for species conservation planning through cutting-edge, science-based tools and processes: 0

Result description: We wish to include as collaborators in this target Tundi Agardy and Anne Nelson, Task Force Members and co-authors of the MMPATF paper on Early Warning Systems and IMMAs (Agardy, T., et al. 2019. Looking beyond the horizon: An early warning system to keep marine mammal information relevant for conservation. Aquatic Conservation: Marine and Freshwater Ecosystems 29(S2):71–83. https://doi.org/10.1002/aqc.3072). A list of comparable success metrics was investigated for use in creating an IMMA 'Implementation' or 'Conservation' Index, including IUCN Red List of Threatened Species, IUCN Green List of Protected and Conserved Areas, and the World Bank MPA Score Card to Assess Progress in Achieving Management Effectiveness Goals for Marine Protected Areas. It was determined that the IMMA Index to allow a score card assessment need not be as complex as these other approaches but there is still believed to be efficacy in producing a simple metric of measuring how successful or useful an IMMA classification can be for increasing action in a particular location (such as the efforts of the Task Force in Mozambique previously). Further assessment was made on the approaches used by BirdLife International on the Important Bird and Biodiversity Areas (IBAs) In Danger list and web portal. As IBAs are not formal protected areas —and neither are IMMAs— the approaches used by Birdlife could be folded into the development of an IMMA Implementation/Conservation Index (which could highlight IMMAs in Danger in the same way). Further assessment is needed to test approaches when applied to marine mammal information.

Important Marine Mammal Area (IMMA) e-Atlas as of Nov. 2021 showing 173 IMMAs, 25 candidate IMMAs, 140 Areas of Interest (AoI)
Photo: IUCN SSC-WCPA Marine Mammal Protected Areas Task Force



NETWORK

Synergy

T-002 (KSR 3)

Establish collaborative framework in all regions where IMMAs are identified: 0

Result description: Charlotte Boyd reached out to Golo Maurer in January 2021 for an update on IMMA-KBA knowledge transfer from Australia. She subsequently asked Andrew Plumptre to help with IMMA-KBA knowledge transfer in the Black and Caspian Seas.

T-008 (KSR 3)

Advice and know-how provided to SSC Shark Specialist Group: 0

Result description: Several meetings were held with the Shark Specialist Group regarding the strategy and approach to take when launching ISRAs.

COMMUNICATE

Communication

T-004 (KSR 13)

Number of SSC members' presentations developed in relation to specific taxonomic groups: 3

Result description: A large number of communication tools and media stories were published, and talks given at a number of forums. A news item was published in *Oryx*, and a scientific paper was submitted for publication. News about the Marine Mammal Protected Areas Task Force can be read here: https://www.marinemammalhabitat.org/news. Documents, reports and papers can be downloaded here: https://www.marinemammalhabitat.org/downloads. Our social media platforms include Twitter (@mmpatf) and Facebook (**https://www.facebook.com/IUCNMMPATF**).

Acknowledgements

The partners to the work of the IUCN SSC-WCPA Marine Mammal Protected Areas Task Force are the Tethys Research Institute, Whale and Dolphin Conservation (WDC), the International Committee on Marine Mammal Protected Areas (ICMMPA), Global Ocean Biodiversity Initiative (GOBI), the German Climate Initiative (IKI), and Office français de la biodiversité (OFB). The supporting organisations of the Task Force include the MAVA Foundation for Nature, Animal Welfare Institute (AWI), Pacific Life Foundation, Natural Resources Defense Council (NRDC), OceanCare, the Marine Mammal Commission, the Ocean Foundation, and the Prince Albert II of Monaco Foundation.

Summary of achievements

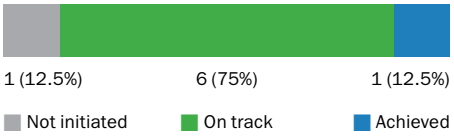
Total number of targets 2021–2025: 8

Geographic regions: 7 Global, 1 Body of water

Actions during 2021:

Assess:	3 (KSR 5, 6)
Plan:	1 (KSR 8)
Network:	2 (KSR 3)
Communicate:	1 (KSR 13)

Overall achievement 2021–2025:



IUCN SSC/CEESP Oil Crops Task Force





SOCIAL MEDIA AND WEBSITE
Website: **https://www.iucn-optf.org**

CHAIR
Erik Meijaard
Borneo Futures, Brunei Darussalam

CHAIR
Malika Virah-Sawmy
Sensemakers Collective

NUMBER OF MEMBERS
20

Mission statement

Our mission is to strengthen the use of different forms of knowledge on the environmental and social impacts and benefits of vegetable oils in policy decisions, whether for sustainable production, consumption, or trade. We aim to realise this through harnessing trusted messengers and accessible and evidence-based messages.

Projected impact 2021–2025

Vegetable oil crops, the main focus of the Oil Crops Task Force, cover some 425 mha of agricultural land. Crops like oil palm are considered a threat to over 300 species listed as Vulnerable, Endangered or Critically Endangered, but all oil crops threaten species where they displace natural ecosystems. At the same time, some crops, especially the perennial crops like oil palm, coconut and olive, can provide habitat to some species. Improved practices are needed for all crops, while their different yields require land that is optimally allocated to oil production to meet growing demand.

Targets 2021–2025

ASSESS

T-001 Conduct high resolution global mapping study for all major oil crops.

T-003 Conduct systematic review or other study on the social and environmental impacts of vegetable oil production.

T-007 Conduct global mapping of coconut production areas.

NETWORK

T-002 Bring Co-Chair in to the group and expand membership for broader expertise across all major vegetable oils.

T-004 Communicate key insights from Task Force work to global audience at IUCN World Conservation Congress 2021.

T-006 Organise Task Force planning meetings.

COMMUNICATE

T-005 Engage media attention to Task Force's key findings.

Activities and results 2021

ASSESS

Communication

T-001 (KSR 5)

Media attention to Task Force's key findings: 150

Result description: We conducted a global high resolution mapping exercise for oil palm plantations and published the resulting paper in 2021. In 2021, we received funding for a similar mapping exercise for coconut. The latter work is ongoing. We are seeking additional funding for mapping other crops. The publications by the Oil Crops Specialist Group are well cited. The 2018 Situation Analysis on Oil Palm and Biodiversity is one of the most downloaded online IUCN studies and had been cited 137 times in October 2021. Similarly, the *Nature Plants* paper published in 2021 has had more than 15,000 reads and has now been cited 23 times, indicating significant scientific interest in the Task Force's findings. We estimate the number of annual citations of papers published through the work by the Oil Crops Task Force at 150.

T-003 (KSR 5)

Number of readings/citations per scientific paper published: 100

Result description: We have been unable to find funding to conduct a global review of the social impacts of vegetable oil production, so this work is pending. We were, however, able to secure funding for a smaller study that looks into the trade-offs and synergies between sustainable development goals indicators in an Indonesian oil palm setting, across different production scales (no oil palm, smallholder oil palm, industrial production). The objective of this proof of concept study is to determine how these trade-offs and synergies can be determined in a complex systems analysis. If the outcomes are promising the plan is to scale up to multi-country and multi-oil crop study. The Indonesia study is ongoing, but a paper will be published in 2022.

Research activities

T-007 (KSR 5)

Number of research projects completed or supported by SSC members per taxonomic group and region: 1

Methane capture facilities for palm oil mill effluent for electricity generation, Belitung, Indonesia
Photo: Erik Meijaard



Female orangutan and her baby in an forest set aside in an oil palm plantation, West Kalimantan, Indonesia
Photo: Nardiyono



Result description: The global mapping of coconut has started based on a grant from GEO-Microsoft. We have located the areas in the world where coconut is grown and are currently developing the training data for the machine learning for identifying coconut from satellite imagery.

NETWORK

Capacity building

T-004 (KSR 4)

Tangible perceptions change among IUCN members about oil crop sustainability: 10%

Result description: We have communicated the findings from the Task Force studies in a range of scientific and popular media and the Task Force Co-Chairs and members frequently engage in public debates about palm oil and other edible oils and their respective social and environmental impacts. We conducted an online session at the IUCN Congress in which the Co-Chairs and two Task Force members presented our findings on impacts to an online audience. Since the Task Force became active in 2017 and since we published the Situation Analysis on oil palm and biodiversity, there seems to have been a marked shift in popular reporting about palm oil impacts with much frequent reference to other oils and their impacts, and the respective land needs of different crops for meeting future oil demand. We cannot well qualify this change in perceptions, but we have conducted further studies on perception change among edible oil consumers to test the assumptions we have made in the Task Force's Theory of Change and about the best target audiences for our work.

Membership

T-002 (KSR 2)

Number of SSC members recruited: 6

Result description: The new Co-Chair, Dr Malika Virah-Sawmy, joined the Task Force in 2021, following approval from the Commission Chairs. Five new Task Force members were added to the Task Force in 2021, while three members stepped down as they were no longer engaged with edible oils. Our current membership stands at 20, with a few more membership applications pending. As the mandate of the Task Force has shifted from a focus on palm oil only to a broader focus on all major edible oils and sustainable agriculture, we have taken on several specialists on soy and other oil crops.

Synergy

T-006 (KSR 2)

Number of internal Task Force meetings: 3

Result description: We organised three online Task Force meetings. This included one webinar during the IUCN Congress in September 2021 to a global audience and one, in October 2021, to discuss the results of an edible oil perception study commissioned by the Task Force. The latter meeting was used to discuss the Task Force's current Theory of Change and how the insights from the oil perception study could potentially change the Theory of Change. As the 'perception' meeting was set up during Asian and European daytime hours, an additional online meeting was organised in November 2021 to discuss various findings with Task Force members based in the Americas and Pacific. Input from Task Force members was used to slightly change the Task Force's Theory of Change, but broadly maintain the current course on using science to influence media, public opinion of oil crop impacts, and ultimately consumers and policy makers.

COMMUNICATE

Communication

T-005 (KSR 12)

Number of press releases: 2

Result description: The Task Force engaged with a range of media, including, for example, an interview with Erik Meijaard in the monthly newsletter of EMVI (Netherlands Centre of Expertise for Food Industries) and another interview with Erik Meijaard in the Netherlands Financieel Dagblad. The Task Force also engaged with media around the publication Meijaard, E., et al. 2020. The environmental impacts of palm oil in context. *Nature Plants* 6:1418–1426. **https://doi.org/10.1038/s41477-020-00813-w.** This was reported in 14 media outlets and resulted in 215 Tweets. In November 2021, this article was in the 99th percentile (ranked 4,005th) of the 458,074 tracked articles of a similar age in all journals and the 97th percentile (ranked 2nd) of the 44 tracked articles of a similar age in *Nature Plants*.

Acknowledgements

We thank Austindo Nusantara Jaya and the University of New York for providing financial support for implementing the edible oil perception studies.

Summary of achievements

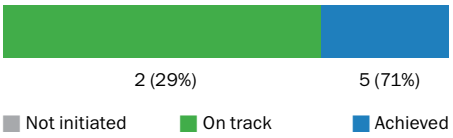
Total number of targets 2021–2025: 7

Geographic regions: 7 Global

Actions during 2021:

Assess: 3 (KSR 5)
Network: 3 (KSR 2, 4)
Communicate: 1 (KSR 12)

Overall achievement 2021–2025:



2021 Report

IUCN SSC Phylogenetic Diversity Task Force



SOCIAL MEDIA AND WEBSITE
Twitter: @IUCN_TreeOfLife
Website: **https://www.pdtf.org**

CHAIR
Nisha Owen
On the Edge, London, UK

VICE CHAIR
Rikki Gumbs
Zoological Society of London, London, UK

NUMBER OF MEMBERS
16

Mission statement

The aim of the IUCN SSC Phylogenetic Diversity Task Force (PDTF) is to provide leadership and guidance on the inclusion of phylogenetic diversity in conservation strategies. By providing the necessary scientific and technical expertise, we will promote wider adoption and greater understanding of this approach by conservation practitioners, decision makers and the public.

Projected impact 2021–2025

Throughout the 2021–2025 period, the PDTF will positively impact multiple species conservation statuses by supporting implementation and providing guidance and advice for practitioners and decision makers on selecting and using appropriate phylogenetic diversity (PD) approaches and incorporating PD into policy. As part of this, the PDTF has committed to the production of two indicators proposed to the Convention on Biological Diversity. The PDTF will also seek to compile information and identify gaps in knowledge or application of PD-based approaches, and will encourage its members and the wider scientific and conservation community to undertake scientific research and conservation applications that will add to the knowledge base.

Targets 2021–2025

ASSESS

T-002 Develop state-of-the-art methods for measuring and categorising the success of conservation.

PLAN

T-005 Develop knowledge exchange and consultation between stakeholders to advance adoption of PD-prioritisation.

ACT

T-007 Develop a variety of documents, including position paper, perspectives piece and guidelines that will include practical examples and review obstacles and lessons to share best practice on the ground.

NETWORK

T-001 Maintain existing partnership with host organisation (On the Edge) and key PDTF member institutions, and develop new partnerships where appropriate.

T-003 Ensure diversity among Task Force membership.

T-004 Collaborate with IUCN bodies and SSC groups on incorporating PD into conservation prioritisation.

COMMUNICATE

T-006 Communicate species conservation work around the application of PD, best practice, and PDTF achievements and activities.

Activities and results 2021

ASSESS

Research activities

T-002 (KSR 5)

Produce the expected PD loss indicator and EDGE Index on an annual basis: Ongoing.

Result description: The PDTF has proposed two indicators for inclusion in the Convention on Biological Diversity (CBD) post-2020 global biodiversity framework in 2021 to meet the drafted goals, elements and targets. Our indicators explicitly and uniquely interlink Goal A (preventing extinctions and improving conservation status) and Goal B (valuing nature's contributions to people). These indicators fill an important current gap in the draft monitoring framework relating to Nature's Contributions to People, as well as the lack of linkages with the work of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) to date. Our proposed indicators recognise both phylogenetic diversity as a valuable aspect of biodiversity and the neglected species that represent our evolutionary history, enabling conservation, measurement and monitoring into the future. Read more about the indicators here: https://www.pdtf.org/publications.

More than half of the world's crocodilians face extinction, including the evolutionarily and ecologically unique Critically Endandered Gharial, *Gavialis gangeticus*
Photo: Rikki Gumbs / ZSL





The PDTF provided technical support to the SSC EDGE Internal grant, awardees included action planning for the Evolutionarily Distinct and Globally Critically Endangered Atlantic Humpback Dolphin, *Sousa teuszii*
Photo: Shutterstock

PLAN

Planning

T-005 (KSR 8)

Stakeholders incorporating PD into conservation planning: Ongoing.

Result description: The PDTF has been actively contributing to the Convention on Biological Diversity (CBD) post-2020 process and attending the Subsidiary Body on Scientific, Technical and Technological Advice (SBSTTA) and Subsidiary Body on Implementation (SBI) virtual meetings to meet its aim. The aim is to ensure the adoption of two PDTF indicators that have been previously proposed for inclusion in the post-2020 global biodiversity framework. To date, the CBD has adopted one of the indicators as part of their complementary list of indicators. The PDTF has provided guidance and support to other organisations involved in the CBD process. The Global Biodiversity Information Facility, a partner to the CBD, is collaborating with the PDTF to incorporate PD metrics in their database. UN Environment Programme World Conservation Monitoring Centre (UNEP WCMC), as part of the biodiversity indicator partnership, has published a multidimensional biodiversity index with a view to including PD metrics. The Royal Botanic Gardens, Kew, included Evolutionary Distinct and Globally Endangered (EDGE) in its 2021–25 Science Strategy with the support of a member of the PDTF.



Endangered *Ginkgo biloba* is the sole survivor from an ancient clade of trees that predates the dinosaurs, making it the most evolutionarily distinct gymnosperm alive today
Photo: Shutterstock

Policy

T-005 (KSR 9)

Number of documents provided to support/guide policy making: 4

Result description: The PDTF submitted comments relating to the prioritisation of the Tree of Life to the CBD and UNEP WCMC. The PDTF published a pre-print of their policy paper covering the two proposed indicators, and submitted the paper to a peer-reviewed journal. PDTF recommendations were shared with UK government, Department for Environment, Food & Rural Affairs (DEFRA), in stakeholder consultation on the CBD monitoring framework, with IUCN, and recommendations were shared with the members of the French Delegation to the CBD.

T-005 (KSR 9)

Number of MEA meetings attended by the SSC group: 3

Result description: The PDTF attended the CBD post-2020 technical meetings of the SBSTTA, Open-ended Working Group and SBI.

ACT

Conservation actions

T-007 (KSR 10)

Number of technical documents provided to support conservation actions: 0

Result description: The PDTF has prepared a policy paper on indicators for peer-review publication and will expand on its work to develop guidance documents for conservation action in the following years.

NETWORK

Membership

T-003 (KSR 2)

Number of SSC members recruited: 1

Result description: The PDTF has expanded its membership and recruited Sebastian Pipins as the Communications Officer in 2021 and is planning to invite more members in 2022. The PDTF appointed one of its members, Rikki Gumbs, as the Deputy Chair of the PDTF.

Synergy

T-001 (KSR 1)

Number of in kind partnerships established and maintained: 1

Result description: We have maintained our partnership with On the Edge and they have renewed their commitment to resource the PDTF and its activities.

T-004 (KSR 3)

IUCN bodies with which the PDTF collaborates to advance targets: ongoing.

Result description: The PDTF participated in a panel discussion held in the Reverse the Red Pavilion at the IUCN World Conservation Congress on 7 September 2021. The panel was chaired by Monika Bohm of the Global Centre for Species Survival, and attended by Nisha Owen of On the Edge and as the PDTF Chair, Roseli Pellens of the Muséum National d'Histoire Naturelle and as a PDTF member, Andrew Terry of the Zoological Society of London and Barney Long of Re:wild. The speakers shared their views on why we should concentrate conservation efforts on conserving the Tree of Life. The PDTF supported the SSC EDGE Grant (2021/22) for highly Evolutionarily Distinct (ED) and EDGE species, by providing up to date lists, expertise and guidance. The eight awarded SSC groups included under-represented taxa such as plants, fungi and reptiles with a variety of range state involvement.

T-004 (KSR 3)

Non-IUCN bodies with which the PDTF collaborates to advance targets: ongoing.

Result description: The PDTF is actively involved in the Convention on Biological Diversity (CBD) post-2020 process and

has engaged in SBSTTA and SBI meetings in 2021. The PDTF is also engaging with UNEP WCMC and the Global Biodiversity Information Facility as supporting organisations to the CBD. PDTF members are actively engaging with national level stakeholders, such as the Muséum National d'Histoire Naturelle in France and the UK Government Department for Environment, Food & Rural Affairs (DEFRA) and the Parliament office.

COMMUNICATE

Communication

T-006 (KSR 13)

Contribute to the increased awareness and wider adoption of PD-informed conservation through representations at events: Ongoing.

Result description: A number of key international events planned for 2021 were cancelled or postponed due to the global pandemic. Despite this, the PDTF attended a variety of virtual and in-person meetings. The PDTF participated in the ongoing SBSTTA and SBI virtual meetings held by the Convention on Biological Diversity (CBD). The PDTF participated in the in-person panel discussion on Conserving the Tree of Life that was held at the IUCN World Conservation Congress Reverse the Red Pavilion on 7 September 2021. The Chair of the PDTF participated in several workshops led by the UK Government DEFRA who invited NGOs to provide their views on the CBD monitoring framework. The Chair and the members of the PDTF presented at the Society for Conservation Biology 2021 Symposium. A PDTF member presented on PD loss due to future land use change in the International Conference of Agricultural Economists.

T-006 (KSR 13)

Digital resources that demonstrate applied use of PD in conservation and its benefits: Ongoing.

Result description: The PDTF published the PDTF Principles document and a Glossary list of key terms of Tree of Life, Phylogenetic Diversity and evolutionary heritage on its website (https://www.pdtf.org/glossary) and shared on Twitter. PDTF members contributed to the development of two short videos, *Saving the Tree of Life* and *The weird, the wonderful and the overlooked*, demonstrating the applied use of PD in conservation, for the IUCN World Conservation Congress Reverse the Red Pavilion screening, produced by On the Edge.

T-006 (KSR 13)

Communication through website and social media: Ongoing.

Result description: The PDTF has been actively updating its website (https://www.pdtf.org) and Twitter (@IUCN_TreeOfLife) with blogs, resources and publications. Website resources are adapted for Twitter posts to reach more audiences. This resulted in a greater engagement online on EDGE species conservation stories, the Tree of Life resources and the science behind phylogenetic diversity. The PDTF has supported its wider network by re-sharing posts by the SSC network, including SSC group results of the SSC EDGE grant and the Reverse the Red initiative. The PDTF was active on social media during the IUCN World Conservation Congress week by celebrating the Reverse the Red Panel event attended by PDTF members and amplifying success stories from the wider SSC Reverse the Red initiative. This has resulted in a substantial increase of followers on Twitter, rising from 50 to 140 followers in one year and increasing engagement on posts that highlight the importance of the Tree of Life, Phylogenetic Diversity and our evolutionary heritage.



PDTF participated in a panel discussion held at the IUCN World Conservation Congress, Reverse the Red Pavilion
Photo: On the Edge

Acknowledgements

We thank On the Edge for resourcing the group and their activities. We thank the EDGE of Existence Programme at the Zoological Society of London for facilitating meetings, sharing technical resources and providing a platform for collaboration.

Summary of achievements

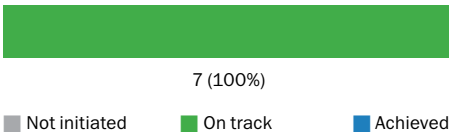
Total number of targets 2021–2025: 7

Geographic regions: 7 Global

Actions during 2021:

Assess:	1 (KSR 5)
Plan:	3 (KSR 8, 9)
Act:	1 (KSR 10)
Network:	4 (KSR 1, 2, 3)
Communicate:	3 (KSR 13)

Overall achievement 2021–2025:



IUCN SSC Post-2020 Biodiversity Targets Task Force



SOCIAL MEDIA AND WEBSITE
Website: https://research.ncl.ac.uk/biodiversitypost2020/

CHAIR
Philip McGowan
Newcastle University, UK

NUMBER OF MEMBERS
23

Mission statement

The IUCN SSC Post-2020 Biodiversity Targets Task Force aims to provide a focus and leadership on species issues in the Post-2020 Global Biodiversity Framework of the Convention on Biological Diversity (CBD), through coordination with the IUCN Secretariat. The Task Force seeks to do this by collating inputs and views from across the SSC network and providing scientific and technical expertise on species related target(s).

Projected impact 2021–2025

Enhanced scientific input about species into Post-2020 Global Biodiversity Framework resulting in a clearer statement of global species policy priorities. Engagement with CBD bodies and process to support implementation of species aspects of the Post-2020 Global Biodiversity Framework.

Targets 2021–2025

ASSESS

T-003 Continue assessment of species inputs needed into the Post-2020 Global Biodiversity Framework (e.g. indicators and communication).

T-004 Assess needs that will enhance implementation of the species components of the Post-2020 Global Biodiversity Framework (e.g. capacity building, research, communication, access to expertise).

PLAN

T-005 Work with IUCN to promote Species Threat Abatement and Restoration as a planning tool for countries to plan how to reduce species extinction risk.

NETWORK

T-001 Secure support for network coordination.

T-002 Refresh the Task Force, with a view to Post-2020 Global Biodiversity Framework implementation and widening the membership to include early career species conservationists.

COMMUNICATE

T-006 Maintain continual communication with the IUCN Secretariat and attendance at CBD meetings.

Activities and results 2021

ASSESS

Communication

T-003 (KSR 5)

Contributions to IUCN's overall Post-2020 Global Biodiversity Framework positions and statements, and to CBD meetings: ongoing

Result description: We made numerous contributions to IUCN Position Papers, negotiating positions, and statements at CBD meetings on species issues. These have increasingly drawn together other SSC entities (Task Forces, Specialist Groups and Conservation Committees) and the IUCN Secretariat and member organisations around particularly challenging issues.

Policy

T-004 (KSR 5)

Internal assessment for Task Force and wider SSC and IUCN. Potential publication: ongoing

Result description: Support was secured in 2021 for a short piece of work to scope out capacity development needs for species in the Post-2020 Global Biodiversity Framework. This worked with the Task Force to consider needs and alighted on two particular needs. First, is the need to support countries in identifying which Action Targets will best lead to positive species outcomes (i.e. achieve species elements in Goal A), as these will vary from country to country. Second, is the need to support countries in identifying species that will need targeted recovery actions under Target 4, which will also vary from country to country. An editorial will appear in *Oryx* in April/May 2022, that is intended to start a discussion about capacity development needs for species.

PLAN

Planning

T-005 (KSR 8)

Number of plans invited/endorsed by national governments/conservation authorities: 0

Result description: An interim committee has been established to provide overall strategic direction and cohesion to advancing the scientific rigour, relationships with



Recently Red List uplisted Critically Endangered Maleo (*Macrocephalon maleo*), from Sulawesi, Indonesia
Photo: Kevin Schafer/ALTO

end users, and maintenance of the Species Threat Abatement and Restoration (STAR) metric. The Task Force Chair is co-chairing this committee and the potential for this committee to sit under the Red List Committee is being explored. The committee has draft Terms of Reference, has held one meeting and is establishing its full membership.

NETWORK

Membership

T-001 (KSR 2)

Increased capacity of the Task Force (and hence SSC): ongoing

Result description: Support was secured that will last until the end of 2022, when it is expected that the Post-2020 Global Biodiversity Framework will be adopted. Further support will be needed thereafter, depending on the needs for engagement with CBD.

T-002 (KSR 3)

Number of policy-engaged members: 23

Result description: This target will be initiated when the Post-2020 Global Biodiversity Framework has been adopted. As the 15th meeting of the Conference of the Parties to the Convention on Biological Diversity (CBD CoP15) has been delayed repeatedly from autumn 2020 and is now scheduled for late summer/autumn 2022, we have still not started this target. It does not make sense to refresh the membership until there is an agreed Framework and a clear sense of how SSC can and should engage. Therefore, at present, we will continue with the existing Task Force membership, which was developed in order to promote generation and communication of scientific information to inform the species elements of the framework during negotiations.

COMMUNICATE

Communication

T-006 (KSR 12)

Number of contributions to IUCN position papers and responses to consultations: ongoing

Result description: As stated under Target T-003, we made numerous contributions to IUCN Position Papers, negotiating positions, and statements at CBD meetings on species issues. These have increasingly drawn together other SSC entities (Task Forces, Specialist Groups and Conservation Committees) and the IUCN Secretariat and IUCN member organisations around particularly challenging issues. There has been attendance from across the Task Force at CBD meetings, both in person and virtually.

Acknowledgements

We thank the following organisations: BirdLife International, Botanic Gardens Conservation International, Conservation International, Conservation Planning Specialist Group, EcoHealth Alliance, the Institute of Botany at the Chinese Academy of Sciences, International Institute for Environment and Development, ISPRA (Institute for Environmental Protection and Research), the Morton Arboretum, NatureServe, SSC, SSC Mollusc Specialist Group, South African National Biodiversity Institute, UNEP WCMC, University of Brasilia, Wildlife Trust of India, Wildoceans, WWF, and Newcastle University.

Summary of achievements

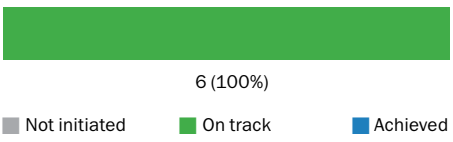
Total number of targets 2021–2025: 6

Geographic regions: 5 Global, 1 Europe

Actions during 2021:

Assess: 2 (KSR 5)
Plan: 1 (KSR 8)
Network: 2 (KSR 2, 3)
Communicate: 1 (KSR 12)

Overall achievement 2021–2025:



2021 Report

IUCN SSC Bird Red List Authority



RED LIST AUTHORITY COORDINATOR
Ian Burfield
BirdLife International, Cambridge, UK

NUMBER OF MEMBERS:
109

SOCIAL MEDIA AND WEBSITE
Facebook: @BirdLifeInternational
Instagram: birdlife.international
Twitter: @BirdLife_News
Website: https://www.birdlife.org
YouTube: BirdLife International



Green Imperial-pigeon (*Ducula aenea*) is assessed as Near Threatened owing to population declines in south and south-east Asia, due to a combination of unsustainable hunting and habitat loss
Photo: Dick Daniels

Mission statement

The BirdLife Partnership strives to conserve birds, their habitats and global biodiversity, working with people towards sustainability in the use of natural resources.

Projected impact 2021–2025

Reassessing the global extinction risk of all bird species by 2025, to inform the prioritisation and allocation of conservation resources.

Targets 2021–2025

ASSESS

T-001 Complete comprehensive global Red List reassessment of all ca. 11,000 bird species by 2025.



Hawaiian Goose (*Branta sandvicensis*) was downlisted from Vulnerable to Near Threatened in 2021, following a successful captive breeding and reintroduction programme
Photo: Jörg Hempel

Activities and results 2021

ASSESS

Red List

T-001 (KSR 6)

Number of global Red List reassessments completed: 998

Result description: During 2021, BirdLife International's Red List Team produced 998 global Red List reassessments for birds, which were published by IUCN and BirdLife on 9 December. These included 94 species downlisted to lower threat categories (eight of which represented genuine improvements) and 33 species uplisted to higher threat categories (18 of which represented genuine deteriorations), as well as 17 first assessments of newly recognised taxonomic entities.

Acknowledgements

BirdLife International acknowledges and thanks its Founder Patrons, Benjamin Olewine, the Aage V. Jensen Charity Foundation, the A. G. Leventis Foundation, the Tasso Leventis Foundation, the Japan Fund for Science and all BirdLife Species Champions for supporting its Red List assessments and the taxonomic work that underpins them. Thanks also to everyone who contributes information to the Red List assessments, especially via BirdLife's Globally Threatened Bird Forums (https://forums.birdlife.org), including members of IUCN Bird Specialist Groups and the Red List Authority for Birds.

Summary of achievements

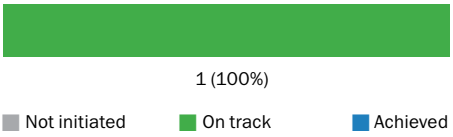
Total number of targets 2021–2025: 1

Geographic regions: 1 Global

Actions during 2021:

Assess: 1 (KSR 6)

Overall achievement 2021–2025:



IUCN SSC Brazil Plant Red List Authority





RED LIST AUTHORITY COORDINATOR
Marinez Ferreira de Siqueira
Rio de Janeiro Botanic Garden Research Institute, Rio de Janeiro, Brazil

RED LIST AUTHORITY COORDINATOR
Eduardo Fernandez
Rio de Janeiro Botanic Garden Research Institute, Rio de Janeiro, Brazil

NUMBER OF MEMBERS
20

SOCIAL MEDIA AND WEBSITE
Facebook: @jbrj.cncflora
Instagram: @jbrj.cncflora

Mission statement

To coordinate, promote and contribute to all necessary conditions to avoid extinctions of Brazilian flora species, in line with the targets of the Global Strategy for Plant Conservation (GSPC) and with the national mandate to assess extinction risk for the National Red List of Brazilian flora, for the elaboration of action plans and maps of priority areas for the conservation of species threatened with extinction.

Projected impact 2021–2025

By the end of 2025, we aim to increase our knowledge and response capacity to secure a perennial fate for the Brazilian flora, in line with the post-2020 Global Strategy for Plant Conservation framework. During the quadrennium, the Brazil Plant Red List Authority (BP-RLA)/Brazilian National Centre for Plant Conservation (CNCFlora), from Rio de Janeiro Botanic Garden (JBRJ), will continue investigating plant conservation status while aiding stakeholders with the implementation of a substantial number of National Action Plans. Extinction risk assessments will target endemic species, trees (under the scope of the Global Tree Assessment lead by Botanic Gardens Conservation International–BGCI), selected taxonomic groups, Crop Wild Relatives and species of economic/social significance, while reassessments of conservation status of species will be conducted so Global and National Red Lists are continually updated. The extinction risk assessments review process will be maintained, working on demand (e.g. reviewing assessments for the Sample Red List Index initiative and other Specialist Groups and Red List Authorities). We expect to further apply in-country a set of biodiversity conservation metrics such as Species Threat Abatement and Recovery (STAR) and the IUCN Green Status of Species and to consolidate the foundations to elaborate a Red List Index representative of the Brazilian flora. Understanding species states and fates will allow the detection of priority areas for plant conservation in Brazil and the use of the IUCN Red List as a barometer. Capacity building in Red Listing and conservation planning sought for this quadrennium is expected to strengthen the network of qualified professionals working with appropriate skills and facilities toward the implementation of sound conservation outcomes.

Targets 2021–2025

ASSESS

T-001 Complete global Red List assessments of circa 1,200 plant species by 2025.

T-004 Advance with a National Red List Index for Plants by 2025.

T-005 Participate in analyses required to calculate STAR Metric for Threatened and Near Threatened Brazilian endemic plant species by 2022.

T-011 Review extinction risk assessments of Brazilian plants conducted by other Specialist Groups/Red List Authorities.

T-013 Assess the Green Status of Species for 10 cacti threatened with extinction.

T-014 Conduct scientific expeditions to designated areas for the implementation of Territorial Action Plans for threated flora conservation.

PLAN

T-006 Update the Faveiro Conservation Action Plan by 2022.

T-007 Develop at least seven Conservation Action Plans for strategic territories to advance plant conservation in the country by 2025.



The Critically Endagered *Acritopappus harleyi* at its type locality (Morro do Ouro, Barra da Estiva) Photo: Eduardo Fernandez



Discocactus horstii (CR in the National Red List and VU in the IUCN Red List) is one among 10 cacti species evaluated for the Green Status of Species during the project supportted by CEPF Photo: Eduardo Fernandez

ACT

T-012 Support the Brazilian Environmental Ministry to issue an updated Official Red List for the Brazilian Flora by 2022.

NETWORK

T-002 Train four Red List assessors as trainers by the end of 2025 (two members by 2022 and a further two by 2025).

T-003 Train four members of the BP-RLA Conservation Planning Unit in Conservation Planning Tools by 2025.

T-008 Translate the official IUCN Red List online training course and all its associated materials (guidelines, classification schemes, mapping standards) into Portuguese.

T-010 Recruit at least 20 new members from distinct backgrounds and as diverse as possible in terms of geographic representation and gender to compose the Stand Alone BP-RLA by 2023.

COMMUNICATE

T-009 Participate in the IUCN World Conservation Congress in 2021.

T-015 Publish social media releases related to the work developed by CNCFlora/Rio de Janeiro Botanical Garden Research Institute (JBRJ).

Activities and results 2021

ASSESS

Green status

T-013 (KSR 6)

Number of new Green Status of Species assessments completed: 10

Result description: Developed during the project 'An integrative approach for advancing biodiversity conservation of threatened species of the Brazilian Cerrado', conducted by CNCFlora/JBRJ, Chico Mendes Institute for Biodiversity Conservation (ICMBio) and Claravis Institute | IUCN SSC Center for Species Survival Brazil, and financially supported by the Critical Ecosystem Partnership Fund–CEPF (ConservationGrants Number: CEPF-112330), we concluded, with the support of Cactaceae specialists and Dr Molly Grace (coordinator of the IUCN Green Status of Species Core Team), the application of the Green Status of Species protocol for 10 Cactaceae threatened with extinction. Outcomes of this effort are currently under scrutiny by experts and the Green Status of Species team and are being prepared to be published during the next round of IUCN Red List updates (probably June 2022). Green Status assessments of these cacti are being submitted alongside reassessments of extinction risk.

Red List

T-001 (KSR 6)

Number of assessments reviewed: 400

Result description: In 2021, IUCN SSC BP-RLA through CNCFlora did over 400 extinction risk assessments of Brazilian plants. Regarding trees, with a renewed Memorandum of Agreement with BGCI, IUCN SSC Brazil Plant Red List Authority (CNCFlora/JBRJ) is continually assessing the extinction risk of Brazilian tree species. During the quadrennium, we will be assessing over 1,200 species of Brazilian trees, including the remaining unassessed endemics as well as near-endemic species. By January 2022, 150 species assessments had been submitted to the IUCN Red List via SIS Connect, and an additional 150 will be submitted in June 2022. Subsequential deliveries are planned to be made until October 2023, when we expect to consolidate assessments of nearly 4,000 Brazilian trees.

T-011 (KSR 5)

Number of assessments reviewed: 372

Result description: In 2021, BP-RLA/CNCFlora/JBRJ reviewed over 372 extinction risk assessments for plants occurring in the country, out of which 281

were reassessments undertaken for the Sampled Red List Index project led by Steven Bachman and collaborators.

Research activities

T-005 (KSR 5)

Number of research projects completed or supported by SSC members per taxonomic group and region: 1

Result description: The joint paper applying STAR to national Red Lists, including Brazil's threatened/near threatened species of plants, was submitted in November 2021 and was led by Dr Louise Mair, with many contributions from researchers from the IUCN Plant Conservation Committee and from the SSC network.

PLAN

Planning

T-006 (KSR 8)

Number of conservation plans/strategies updated: 1

Result description: A rare and endemic tree in the central region of Minas Gerais State, the Faveiro-de-Wilson (*Dimorphandra wilsonii*) is globally Critically Endangered and has its own National Action Plan (PAN in Portuguese; duration 2015–2020). The elaboration of the second cycle of the PAN Faveiro-de-Wilson enabled a redefinition of the objectives and priority actions, as well as expansion of the efforts undertaken for the conservation and recovery of target species populations and included in its scope the Faveiro-da-Mata (*Dimorphandra exaltata*), another species currently recognised as globally Endangered. During the Conservation Planning Workshop, participants recommended the evolution of the second cycle of the PAN Faveiro-de-Wilson to a new plan called Conservation Action Plan for Threated Faveiros Species (*Dimorphandra* Schott) – PAN Faveiros, including *Dimorphandra exaltata* as a target species. We successfully completed all the steps that involved participatory workshops, which were attended by representatives of organisations from different sectors of society, in addition to gender equality. In the Conservation Planning Workshop, the general objective and four specific objectives were built, covering 25 conservation actions and involving 54 stakeholders. A Technical Advisory Group with eight men and four women, according to the availability of participants, was formed to monitor, evaluate and assist in the implementation of actions. During the Targets and Indicators Workshop the monitoring and evaluation plan was developed, the priority of conservation actions was established, and the budget detailed. We are submitting JBRJ's ordinances for approval of the PAN for consideration by JBRJ's legal sector. We are also preparing an executive summary for the publicity of PAN Faveiros. The elaboration of PAN Faveiros was carried out between September and December 2021, in virtual workshops, within the scope of the project 'An integrative approach for advancing biodiversity conservation of threatened species of the Brazilian Cerrado'. This project was implemented as a partnership among the Brazilian National Centre for Plant Conservation/Rio de Janeiro Botanical Garden Research Institute (CNCFlora/JBRJ), the National Centre for Biodiversity Assessment and Research and Conservation of the Cerrado/Chico Mendes Institute for Biodiversity Conservation (CBC/ICMBio) and the IUCN SSC Center for Species Survival Brazil (CSS Brazil), which is one of the centres of the Instituto Claravis, the executing institution, and financially supported by the Critical Ecosystem Partnership Fund–CEPF (ConservationGrants Number: CEPF-112330).

T-007 (KSR 8)

Number of conservation plans/strategies developed: 6

Result description: We are engaged in supporting the State Environment agencies within the scope of the 'Project GEF Pro Species: all against extinction' (https://prospecies.eco.br/) in the elaboration of species conservation plans at the regional level, called here in Brazil Territorial Action Plans for the Conservation of Endangered Species (PAT in Portuguese). Thus, we support the elaboration of the Territorial Action Plan for the Conservation of Endangered Species of the Campanha Sul and Serra do Sudeste (PAT Campanha Sul and Serra do Sudeste) in the state of Rio Grande do Sul; Territorial Action Plan for the Conservation of Endangered Species in the Capixaba-Gerais Territory (PAT Capixaba-Gerais) in the states of Minas Gerais and Espírito Santo; Territorial Action Plan for the Conservation of Endangered Species in the Xingu Territory (PAT Xingu) in the state of Pará; Territorial Action Plan for the Conservation of Endangered Species of the Mid-North Territory (PAT Meio Norte) in the states of Pará, Maranhão and Tocantins; Territorial Action Plan for the Conservation of Endangered Species of the Paraná-São Paulo Troop Path Territory (PAT Caminho das Tropas Paraná-São Paulo) in the states of Paraná and São Paulo; and National Action Plan for the Conservation of Pollinating Insects (PAN Insects Pollinators).

ACT

Conservation actions

T-012 (KSR 10)

Number of technical documents provided to support conservation actions: 0

Result description: An up-to-date Brazilian flora Red List was submitted to Brazilian government environmental agencies and should be formally issued by Brazil's Ministry of Environment in 2022.

NETWORK

Capacity building

T-002 (KSR 2)

Number of people trained in assessment tools: 2

Result description: Capacity building of two CNCFlora/BP-RLA Red List Assessors as Trainers was provided during the 2021 Red List Trainers' Course, held online by staff from the IUCN Red List Unit between 27 September–1 October 2021. Two additional CNCFlora/BP-RLA assessors will be pursuing this capacity building opportunity during 2022–2023, as we expect to consolidate a strong group of Red List trainers, currently scarce nationally.

T-008 (KSR 4)

Number of guidance documents and modules from the IUCN Red List training course translated into Portuguese: 4

Result description: To improve capacity building and facilitate future Red List training in the use of the IUCN Red List methodology, we selected for translation two main guidelines – *Guidelines for Using the IUCN Red List Categories and Criteria* and the *Guidelines for Application of IUCN Red List Criteria at Regional and National Levels* – in addition to the complete IUCN Red List online course. These documents are about to be formally submitted to the IUCN Red List Unit and were developed during the project 'An integrative approach for advancing biodiversity conservation of threatened species of the Brazilian Cerrado', conducted by CNCFlora/JBRJ, ICMBio and Claravis Institute | IUCN SSC Center for Species Survival Brazil, and financially supported by the Critical Ecosystem Partnership Fund–CEPF (Conservation Grants Number: CEPF-112330).



Uebelmannia buiningii (CR at both the National Red List and the IUCN Global Red List) is one among 10 cacti species evaluated for the Green Status of Species during the project supportted by CEPF " An integrative approach to advance the conservation
Photo: Lydiane Aona

Membership

T-010 (KSR 2)

Number of SSC members recruited: 20

Result description: The IUCN SSC Brazil Plant Red List Authority has over 43 former members, who are yet to update their memberships. In addition, we are working to consolidate the inclusion of new members, particularly considering the new objectives sought by BP-RLA during the current quadrennium. We currently count on at least 20 people directly contributing to reach BP-RLA targets in 2021–2022.

COMMUNICATE

Communication

T-009 (KSR 12)

Number of videos showcasing the work of CNCFlora toward the Assess-Plan-Act conservation cycle components: 1

Result description: Three members of BP-RLA participated virtually in the IUCN World Conservation Congress in 2021. The video, presenting successful conservation stories of thriving Brazilian plants, was showcased at the Reverse the Red pavilion during the Congress.

T-015 (KSR 13)

Number of digital communication outputs developed in relation to specific taxonomic groups: 49

Result description: In 2021, CNCFlora/JBRJ published nearly 60 posts related to plant diversity and conservation in Brazil through its official Instagram and associated Facebook accounts. Publications ranged from advertising relevant peer-reviewed papers (e.g. species lists from protected areas: https://www.instagram.com/p/CJtRbwBprmd/) to technical meetings for plant conservation planning (e.g. the development of the second cycle of the Conservation Action Plan for Faveiro-de-Wilson: https://www.instagram.com/p/CV6QA66J5M3/), the State of the World's Trees (e.g. the results collated by CNCFlora/JBRJ regarding Brazilian tree species conservation status: https://www.instagram.com/p/CVTumR-ppA0/), species' conservation status (e.g. *Paubrasilia echinata* risk assessments: https://www.instagram.com/p/COaiPyFpok1/), and many more, available at **https://www.instagram.com/jbrj.cncflora/**.

Acknowledgements

We would like to convey our gratitude to the Secretariat of Biodiversity of the Ministry of the Environment – Brazil, the Secretary of State for the Environment of Rio de Janeiro, Botanic Gardens Conservation International (BGCI), Royal Botanic Gardens, Kew (RBG Kew), the Global Environment Facility Fund (GEF) and all partners involved with the Pro-Espécies project (including Brazil's State environmental agencies), World Wildlife Fund (WWF), Brazilian Biodiversity Fund (FUNBIO), Global Partnership for Plant Conservation (GPPC), the Critical Ecosystem Partnership Fund (CEPF), the IUCN Plant Conservation Committee, the recently established IUCN SSC Center for Species Survival Brazil, Fundação Claravis, Fundação O Boticário, Programa Arboretum/Public Prosecutor's Office of the State of Bahia, Fundação Flora, Botanical Experts Network of the Flora of Brazil 2020 project/REFLORA that collaborate with CNCFlora/JBRJ and the Botanical Garden of Rio de Janeiro and its broad network of researchers, for all assistance and structure provided.

Summary of achievements

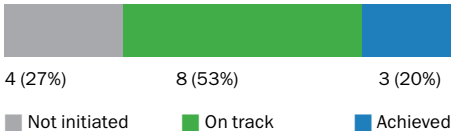
Total number of targets 2021–2025: 15

Geographic regions: 15 America

Actions during 2021:

Assess: 3 (KSR 5, 6)
Plan: 2 (KSR 8)
Act: 1 (KSR 10)
Network: 3 (KSR 2, 4)
Communicate: 2 (KSR 12, 13)

Overall achievement 2021–2025:



IUCN SSC Caucasus Plant Red List Authority





RED LIST AUTHORITY COORDINATOR
George Nakhutsrishvili
Institute of Botany, Ilia State University, Tbilisi, Georgia

RED LIST AUTHORITY COORDINATOR
Ketevan Batsatsashvili
Institute of Botany, Ilia State University, Tbilisi, Georgia

NUMBER OF MEMBERS
30

Mission statement

The mission of the Caucasus Plant Red List Authority (RLA) is to contribute to increasing current knowledge on the taxonomy and ecology of the species in the Caucasus and promote their long-term conservation.

Projected impact 2021–2025

The major activities of the group during the current quadrennium will focus on ecosystem Red List status assessment. Hence, a yet indirect future impact is anticipated on species whose threatened status is at least partly related to habitat loss/degradation. Namely, identification of Important Plant Areas (particularly with the criteria B and C), which will be possible after ecosystem Red Listing, will enable decision makers to properly determine effective measures for *in situ* conservation of the mentioned pool of threatened plant species.

Targets 2021–2025

ASSESS

T-002 Complete the Caucasian Flora Conspectus and further develop its website.

T-003 Assess plant species based on field studies of rare plant populations.

T-004 Re-assess plant species based on field studies of rare plant populations.

T-005 Identify threatened ecosystems and assess risk severity in the Caucasus.

PLAN

T-006 Organise a Regional Workshop to further strengthen international cooperation within the RLA.

NETWORK

T-001 Enhance collaboration with relevant IUCN member specialists for advice on the Ecosystem Red Listing process.

Activities and results 2021

ASSESS

Research activities

T-002 (KSR 5)

Number of research projects completed or supported by SSC members per taxonomic group and region: ongoing

Result description: The Caucasian Flora Conspectus website (https://www.binran.ru/resursy/informatsionnyye-resursy/tekuschie-proekty/caucasian-flora/) was created and run by V.L. Komarov Botanical Institute of the Russian Academy of Sciences. The Collaborator/Focal Point for this target will be specified at a later stage. Now, the Co-Coordinator is assigned as Collaborator/Focal Point.

T-005 (KSR 5)

Number of scientific publications about species research that acknowledge SSC affiliation: 10

Result description: Georgian members of the RLA participated in the Environmental Programme ECOServe supported by GIZ Office Georgia within the framework of the project Vegetation of Natural Forests in Georgia, the Caucasus. Botanical description of natural forests as 'model areas' of Georgia's major forest types (regions of West Georgia) were carried out following methodology by Braun-Blanquet (1964), also with reference to Fujiwara (1987) and Box (2015). Along with collection of relevés, forest assessment based on forest science-related parameters was carried out according to a methodology developed for a national forest assessment initiative in Georgia. Results of this and earlier analogous research conducted in East and partly West Georgia will be published in a book on Georgia's natural forests in 2023. The collected data will help in the Caucasus ecosystem Red Listing process to be undertaken later in the current quadrennium. Cited references: Box, E.O. (2015). 'Warm-Temperate Deciduous Forests of Eastern North America'. In: E.O. Box and K. Fujiwara (eds.) *Warm-Temperate Deciduous Forests around the Northern Hemisphere*, Geobotany Studies, pp. 225–255. Switzerland: Springer International Publishing; Braun-Blanquet, J. (1964). *Pflanzensoziologie: grundzüge der vegetationskunde*. Zweite, umgearbeitete



Alnus barbata forest in West Georgia, at 1060 m a.s. l.
Photo: Arsen Bakhia



Crook-trunk *Fagus orientalis* forest in West Georgia, at 2040 m a.s.l.
Photo: Arsen Bakhia

und vermehrte Auflage. Wien: Springer; Fujiwara, K. (1987). 'Aims and methods of phytosociology or "vegetation science"'. In: Y. Takeda (ed.) *Papers on plant ecology and taxonomy to the memory of Dr. Satoshi Nakanishi*, pp. 607–628. Kobe: Kobe Geobotanical Society.

Acknowledgements

Georgian members of the Caucasus Plant RLA thank GIZ Office Georgia for their support of studies of natural forest stands identified as 'model areas' of major forest types, which will inter alia contribute to Red Listing of the Caucasus ecosystems, the major goal of the RLA for the 2021–2025 Quadrennium.

Summary of achievements

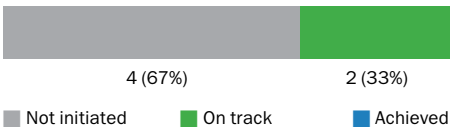
Total number of targets 2021–2025: 6

Geographic regions: 6 Asia

Actions during 2021:

Assess: 2 (KSR 5)

Overall achievement 2021–2025:



IUCN SSC Central Africa Plant Red List Authority





RED LIST AUTHORITY COORDINATOR
Jean Michel Onana
University of Yaoundé I, Faculty of Sciences, Yaoundé, Cameroon; National Herbarium of Cameroon, Cameroon

RED LIST AUTHORITY COORDINATOR
Tariq Stévart
Missouri Botanical Garden, Africa & Madagascar Department, US; Herbarium of the Université Libre de Bruxelles and Botanic Garden Meise, Belgium

NUMBER OF MEMBERS
19

Mission statement

The mission of the Central African Plant Red List Authority (CARLA) is to promote high quality Conservation Assessments within Central Africa and to use this information to support conservation actions.

Projected impact 2021–2025

Our work will increase the knowledge on extinction risk of plants in Central Africa with a particular interest in Gabon, Cameroon, and São Tomé and Príncipe, hence contributing to priority setting for conservation planning and actions.

Targets 2021–2025

ASSESS

T-001 Complete assessments of 149 orchid species endemic to Atlantic Central Africa.

T-002 Complete assessments of the tree species endemic to Flore du Congo.

T-003 Complete assessments of High Conservation Value (HVC) Gabonese plant species.

T-004 Complete assessments of Gabonese Podostemaceae.

T-005 Produce assessments of the threatened plant species of Sao Tomé and Principe.

T-006 Complete assessments of species endemic to Gabon.

T-008 Complete assessments of the plant species endemic to Cameroon.

Activities and results 2021

ASSESS

Red List

T-001 (KSR 6)

Number of new global Red List assessments completed: 84

Result description: Many assessments were published in 2021.

T-002 (KSR 6)

Number of global Red List reassessments completed: 301

Result description: A number of new global Red List assessments were completed.

T-005 (KSR 6)

Number of new national Red List assessments published: 15

Result description: Fifteen Red List assessments were published in 2021.

T-006 (KSR 6)

Number of new global Red List assessments completed: 289

Result description: Most of the assessments were published in 2021.

T-008 (KSR 6)

Number of global Red List reassessments completed: 468

Result description: In 2021, 111 species were assessed for the Tropical Important Plant Areas (TIPAs) project in Cameroon.

Acknowledgements

Martin Cheek, Poppy Lawrence, Isabel Baldwin and Ben Fish are acknowledged for preparation of the datasets. The IUCN–Toyota Red List Partnership is acknowledged for its contribution of the completion of many of the assessments done by Royal Botanic Gardens, Kew. The Global Trees Campaign, which supports Red Listing work in Principe carried out by Fundação Príncipe, the Missouri Botanical Garden and the University of Coimbra, is a partnership between Fauna & Flora International and Botanic Gardens Conservation International. The Global Tree Assessment

Balthasaria mannii was assessed as Critically Endangered under criteria B1ab(iii,v)+2ab(iii,v); C2a(i,ii); D. The species is only known from few individuals, situated at the top of São Tomé, and threatened by invasive species and tourism activities
Photo: Olivier Lachenaud (Meise Botanic Garden)





Polyscias letestui is large tree to 18 m high and 61 cm in diameter, only known from Gabon and Angola and is assessed as EN B2ab(iii)
Photo: Ehoarn Bidault (Missouri Botanical Garden)



Warneckea macrantha is large tree up to 30 m tall, only known from Gabon and the Republic of the Congo and is assessed as VU B2ab(iii)
Photo: Ehoarn Bidault (Missouri Botanical Garden)

Red Listing workshop in São Tomé in March 2021
Photo: Tariq Stévart (Missouri Botanical Garden)





Supporting KBA approach in Central Africa: the first KBA workshop conducted in Gabon in December 2021
Photo: Tariq Stévart (Missouri Botanical Garden)

project, coordinated by the IUCN SSC Global Tree Specialist Group and Botanic Gardens Conservation International, is acknowledged for contributing assessments of Central African tree species and is funded by Fondation Franklinia. Fondation Franklinia supports the ECAT project ('Conservation of endemic Central African trees through IUCN Red Listing and Species Distribution Modelling') led by Meise Botanic Garden and the GaboTREE project led by Missouri Botanical Garden in Gabon. The American Orchid Society supports Missouri Botanical Garden and Institut de Recherche pour le Développement work on assessments of the orchids endemic to Atlantic Central Africa. The Red Listing work on the flora of Sao Tomé and Principe was supported by the Critical Ecosystem Partnership Fund (CEPF), a joint initiative of l'Agence Française de Développement, Conservation International, the European Union, the Global Environment Facility, the Government of Japan and the World Bank, through the project CEPF-104130.

Summary of achievements

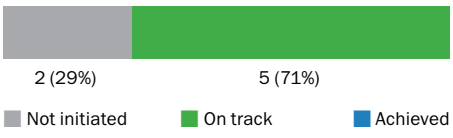
Total number of targets 2021–2025: 7

Geographic regions: 7 Africa

Actions during 2021:

Assess: 5 (KSR 6)

Overall achievement 2021–2025:



IUCN SSC Croaker and Drum Fishes Red List Authority





RED LIST AUTHORITY COORDINATOR
Orangel Aguilera
Departamento de Biologia Marinha (GBM), Universidade Federal Fluminense, Rio de Janeiro, Brazil

RED LIST AUTHORITY COORDINATOR
Ying Gait Seah
Faculty of Fisheries and Food Science, Universiti Malaysia Terengganu, Terengganu, Malaysia

NUMBER OF MEMBERS
56

Mission statement

The mission of the IUCN SSC Croaker and Drum Fishes Red List Authority is to revise and submit the assessments of all 300 species of Croakers and Drum Fishes and to redefine the goal of the second phase of the Global Sciaenidae Conservation Plan.

Projected impact 2021–2025

Artisanal marine fisheries provide household income and food supply in tropical America and Asia, representing the most important activity in large marginal communities along the coast. These fisheries occur daily throughout the year with commercial sizes and juveniles of sciaenid species as primary targets. However, low importance undersize species without natural commercial value represent a significant bycatch, mostly in shallow, brackish and estuarine water environments. To date, official statistical records for the artisanal fisheries along the Meso- and South American coast and Southeast Asia region are deficient to accurately establish fisheries production targets, regulations and conservation strategies.

Targets 2021–2025

ASSESS

T-005 Organise international panel discussions on threatened species, biodiversity and conservation.

T-006 Reassess threatened croakers and drums species.

PLAN

T-009 Formulate and submit the proposal to establish the IUCN SSC Croaker and Drum Fishes Specialist Group.

NETWORK

T-001 Submit applications for funding partners to establish and maintain new assessments and training programmes.

T-002 Interact with the Marine Fish expert groups network to improve the criteria for species reassessment and explore the best option to measure the effectiveness of SSC's actions on biodiversity conservation.

T-003 Advocate for more marine fish biodiversity conservation across the regions among educational institutions, local/regional governments and corporate bodies.

T-004 Enhance collaborations with governmental agencies of conservation and fisheries, academics, NGOs and scientific society partnerships.

COMMUNICATE

T-008 Catalyse sustainable use practices to improve governance for people and nature.

Activities and results 2021

ASSESS

Red List

T-006 (KSR 6)

Number of global Red List reassessments completed: 1

Result description: Spine Bahaba (*Bahaba polykladiskos*), Southeast Asia Survey, June 2022, Prof. Chao and team.

Research activities

T-005 (KSR 5)

Number of scientific publications about species research that acknowledge SSC affiliation: 1

Result description: The following paper was published: Hanafi, N., et al. (2022). '*Johnius sasakii*, a new species of croaker (Perciformes: Sciaenidae) with a key to *Johnius* from East Malaysia, Borneo'. *Zootaxa* 5116(3):393–409. https://doi.org/10.11646/zootaxa.5116.3.5

Otolithoides biauritus maws were extracted at a fish market
Photo: Archives of the CDFRLA



Fish maw of *Bahaba polykladiskos* observed from Mid Valley Kuala Lumpur, Malaysia
Photo: Archives of the CDFRLA



Bahaba polykladiskos examination in the Global Sciaenidae Conservation Network, National Museum of Marine Biology and Aquarium, Taiwan
Photo: Archives of the CDFRLA



PLAN

Planning

T-009 (KSR 8)

Number of conservation plans/strategies developed: 1

Result description: Establishment of the IUCN SSC Croakers and Drums Specialist Group has been coordinated by Riley Pollom at the Global Center for Species Survival.

NETWORK

Synergy

T-001 (KSR 1)

Number of funding partners established and maintained: 4

Result description: Funding confirmed or pending for approval: (1) US$ 20,000 (from Prof. Chao); (2) US$ 15,000 NGO (Prof. Liu, Mr Yan, Bahaba and larger sciaenid culture company), not confirmed; (3) unknown amount (Dr Chang Chih-Wei, Prof. Chen, Sciaenidae Conservation network, NMMBA, Taiwan); (4) small grant to students, under US$ 2,000 for travelling, 1–2 pax per year (from Prof. Chao).

Acknowledgements

International Union for Conservation of Nature; Species Survival Commission; Environment Agency Abu Dhabi; Global Sciaenidae Conservation Network, National Museum of Marine Biology and Aquarium, Taiwan; Boston Bio-Amazonia Conservation International; Universidade Federal Fluminense, Brazil; Universiti Malaysia Terengganu, Malaysia; National Museum of Marine Biology and Aquarium, Taiwan; National Sun Yat-sen University, Taiwan; and Xiamen University, China.

Summary of achievements

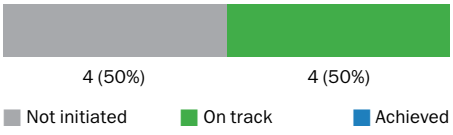
Total number of targets 2021–2025: 8

Geographic regions: 5 Global, 3 America

Actions during 2021:

Assess: 2 (KSR 5, 6)
Plan: 1 (KSR 8)
Network: 1 (KSR 1)

Overall achievement 2021–2025:



IUCN SSC Eastern Africa Plant Red List Authority



RED LIST AUTHORITY COORDINATOR
Quentin Luke
East African Herbarium, National Museums of Kenya, Nairobi, Kenya

NUMBER OF MEMBERS
19

Mission statement

To bring botanists within the Eastern African region together to document the plants and assess and document their risk of extinction and thereby publicize the threats and encourage their conservation.

Projected impact 2021-2025

Improve our knowledge on the extinction risk of plants from East Africa and publish the assessments in the IUCN Red List. These will support the prioritization of conservation planning and action in the region.

Targets 2021-2025

ASSESS

T-001 Assess the extinction risk of selected plant species from Eastern Africa.

Activities and results 2021

ASSESS

Red List

T-001 (KSR 6)

Number of new global Red List assessments completed: 118

Result description: In 2021, the EAPRLA published 118 plant species assessments from 38 different families.

Acknowledgements

The Eastern Africa Plant Red List Authority would like to acknowledge all its members and respective organizations who have significantly contributed to the improvement of knowledge on Eastern Africa flora, through the publication of extinction risk assessments in the IUCN Red List.

Summary of achievements

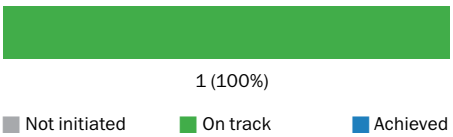
Total number of targets 2021-2025: 1

Geographic regions: 1 Africa

Actions during 2021:

Assess: 1 (KSR 6)

Overall achievement 2021-2025:





Dalbergia mayumbensis Baker f. (Leguminosae), published in the IUCN Red List of Threatened Species™ with support from the Eastern Africa Plant Red List Authority
Photo: Xander van der Burgt, Royal Botanic Gardens Kew

IUCN SSC Indonesian Plant Red List Authority





RED LIST AUTHORITY COORDINATOR
Yulita Kusumadewi
Research Centre for Biology, Indonesian Institute of Sciences, Indonesia

RED LIST AUTHORITY COORDINATOR
Iyan Robiansyah
Research Center for Plant Conservation and Botanic Gardens, Indonesian Institute of Sciences, Bogor, Indonesia

NUMBER OF MEMBERS
32

SOCIAL MEDIA AND WEBSITE
Facebook: Indonesian Plant Red List Authority

Mission statement

The mission of the Indonesian Plant Red List Authority (IPRLA) is to conduct comprehensive risk assessment for Indonesian plant species occurring in the country and as the basic information to be used for further conservation and sustainable forest management in Indonesia.

Projected impact 2021–2025

We aim to complete the conservation status assessment of 350 Indonesian native plant species. We will also support the other 100 conservation status assessments by providing a review to other assessors. To improve the understanding of the assessors on the Red List assessment process, the IUCN Red List Categories and Criteria, and the supporting information requirements for assessments, a Red List training will be conducted with at least 50 participants. In addition, to enhance the conservation of Indonesian threatened species, we will conduct population surveys, increase *ex situ* collections, develop conservation strategies and action plans, and increase public awareness through interactive social media campaigns.

Targets 2021–2025

ASSESS

T-001 Complete assessments of 350 Indonesian native plant species.

T-002 Review assessments of 100 Indonesian plant species.

PLAN

T-006 Develop conservation strategy for Indonesian threatened plants.

ACT

T-004 Conduct population surveys on Indonesian endemic plant species.

T-005 Collect Indonesian threatened plants for *ex situ* conservation.

NETWORK

T-003 Conduct Red List training and workshop for assessors in the Indonesian language.

T-008 Conduct Red List Index and Red List of Ecosystems training.

COMMUNICATE

T-007 Establish and develop IPRLA social media pages.

Activities and results 2021

ASSESS

Red List

T-001 (KSR 6)

Number of new global Red List assessments completed: 152

Result description: The assessments are conducted by the staff of the Research Center for Plant Conservation and Botanic Gardens-BRIN with grant support from Botanic Garden Conservation International.

PLAN

Planning

T-006 (KSR 8)

Number of conservation plans/strategies developed: 1

Result description: A draft conservation strategy and action plan for *Gnetum loerzingii* (Gnetaceae) has been developed. It is one of the outputs for the project entitled 'Conservation of *Gnetum loerzingii*, a tree endemic to Sumatra and last collected in 1956', which was funded by On the EDGE Conservation.



Population survey of the endemic *Gnetum loerzingii* (Gnetaceae) in Sumatra, Indonesia
Photo: Robiansyah, Primananda & Kusuma

Gnetum cf. loerzingii (Gnetaceae) in Sibolangit, North Sumatra, Indonesia
Photo: Robiansyah, Primananda & Kusuma



ACT

Conservation actions

T-004 (KSR 10)

Number of species with an updated population status: 1

Result description: Population surveys for the endemic plant *Gnetum loerzingii* (Gnetaceae) have been conducted in Sumatra. This is part of the project entitled 'Conservation of *Gnetum loerzingii*, a tree endemic to Sumatra and last collected in 1956', which was funded by On the EDGE Conservation.

T-005 (KSR 10)

Number of threatened species benefiting from *ex situ* conservation action: 1

Result description: *Gnetum loerzingii* (Gnetaceae), an endemic plant in Sumatra Island, has been collected and propagated at Bogor Botanic Gardens. It is one of the outputs for the project entitled 'Conservation of *Gnetum loerzingii*, a tree endemic to Sumatra and last collected in 1956', which was funded by On the EDGE Conservation.

NETWORK

Capacity building

T-003 (KSR 2)

Number of people trained in assessment tools: 19

Result description: A total of 19 people have participated in the training on the Red List of Threatened Species and how to review an IUCN assessment. The training was conducted in April 2021, in cooperation with Bogor Botanic Gardens and Botanic Gardens Conservation International.

COMMUNICATE

Communication

T-007 (KSR 13)

Number of digital communication outputs developed in relation to specific taxonomic groups: 3

Result description: Three posts have been uploaded on a new IPRLA Facebook page (**https://www.facebook.com/Indonesian-Plant-Red-List-Authority-105365165146115**).

Acknowledgements

We would like to thank Bogor Botanic Gardens staff for conducting the assessment of Indonesian native tree species and Botanical Gardens Conservation International for supporting the assessments through the Global Tree Assessment project. We would like to thank On the EDGE Conservation for supporting our project entitled 'Conservation of *Gnetum loerzingii*, a tree endemic to Sumatra and last collected in 1956'. As a result of the project, we have collected population data of *G. loerzingii* and developed the strategy and conservation action plan for the species.

Summary of achievements

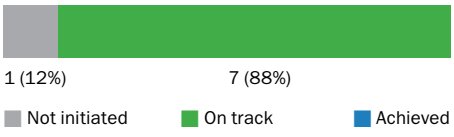
Total number of targets 2021–2025: 8

Geographic regions: 8 Asia

Actions during 2021:

Assess:	1 (KSR 6)
Plan:	1 (KSR 8)
Act:	2 (KSR 10)
Network:	1 (KSR 2)
Communicate:	1 (KSR 13)

Overall achievement 2021–2025:



IUCN SSC Marine Fishes Red List Authority





RED LIST AUTHORITY COORDINATOR
Kent E. Carpenter
Old Dominion University, Norfolk, Virginia, US

RED LIST AUTHORITY COORDINATOR
Beth Polidoro
Arizona State University, Tempe, Arizona, US

NUMBER OF MEMBERS
27



The Marine Fishes RLA is providing first time Red List assessments for more than 15,000 marine fishes that are not included in other marine fish groups
Photo: Beth Polidoro

Mission statement

The mission of the IUCN Marine Fishes Red List Authority is to transform global, regional and local marine conservation capabilities by completing Red List assessments for all marine fishes.

Projected impact 2021–2025

By the end of this quadrennium, we expect to continue towards the goal of completing IUCN Red List assessments for the more than 17,000 marine fishes. Our current focus is species in the marine ornamental fish trade, as well as supporting the work of the Snapper, Seabream and Grunt Specialist Group and the Tuna and Billfish Specialist Group. In 2022, we will undertake a project to update the assessments of all ~75 marine bony fishes endemic to the Galapagos. These assessments will help improve our knowledge of patterns in the conservation status of marine vertebrate biodiversity globally, which we are also working to highlight through the completion of several scientific publications summarising these patterns.

Targets 2021–2025

ASSESS

T-003 Assess 100 marine gobies by 2022.

T-004 Assess 300 flatfishes by 2021.

T-005 Assess 275 marine fishes in the aquarium trade.

T-006 Publish one paper annually on the conservation status of marine fishes.

ACT

T-007 Provide two annual technical consultations to support conservation actions to organisations and institutions globally engaged with marine fish conservation.

NETWORK

T-001 Train 20 marine fish experts as Red List assessors.

T-002 Recruit at least 10 new members by 2024.

COMMUNICATE

T-008 Organise one presentation annually to communicate the conservation work of the IUCN SSC and the Marine Fishes Red List Authority.

T-009 Develop a new website for the Marine Fishes Red List Authority.

Many damselfishes were recently assessed as part of the Aquarium Trade Red Listing project
Photo: Beth Polidoro



Many coral reef fishes, such as those in the sandperch family, have yet to be assessed under Red List criteria
Photo: Beth Polidoro



Activities and results 2021

ASSESS

Red List

T-003 (KSR 6)

Number of new global Red List assessments completed: 117

Result description: We assessed 64 species of gobies in the genus *Trimma* and 53 Gobiidae species that occur in the marine ornamental trade, via virtual consultations with Helen Larson.

T-004 (KSR 6)

Number of global Red List reassessments completed: 353

Result description: We submitted and published 353 flatfishes on the Red List, based primarily on virtual consultations with taxonomic experts from the US, Japan and Russia.

T-005 (KSR 6)

Number of global Red List reassessments completed: 275

Result description: We assessed 275 marine fishes in the aquarium trade through virtual consultations with taxonomic and regional experts.

Research activities

T-006 (KSR 5)

Number of scientific publications about species research that acknowledge SSC affiliation: 1

Result description: In 2021, we published a paper on the conservation status of clupeiformes (herrings, anchovies and allies). We also contributed to two papers published in 2021 on the conservation status of marine fishes led by members of the Shark Specialist Group and the Seahorse, Pipefish and Seadragon Specialist Group. We are also leading papers on the conservation status of several other taxonomic groups to be completed in 2022.

NETWORK

Membership

T-002 (KSR 2)

Number of SSC members recruited: 2

Result description: We recruited two new members to the Marine Fishes Red List Authority.

Acknowledgements

We thank the Toyota Motor Foundation and the Government of Switzerland for their support of marine Red Listing. We also thank the IUCN SSC Chair's Office Internal Grant for funding assessments of the *Trimma* gobies. The continued partnership with the Oceanario de Lisboa, resulting in the hosting of a marine Red List Officer, has been most successful. We also thank the many scientists who, despite facing another difficult year dealing with direct and indirect effects of COVID-19, have made these marine Red List assessments possible.

Summary of achievements

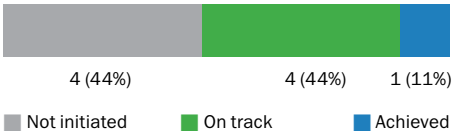
Total number of targets 2021–2025: 9

Geographic regions: 9 Global

Actions during 2021:

Assess: 4 (KSR 5, 6)
Network: 1 (KSR 2)

Overall achievement 2021–2025:



2021 Report

IUCN SSC New Caledonia Plant Red List Authority





RED LIST AUTHORITY COORDINATOR
Shankar Meyer (Until 2021)
Endemia Association, Nouméa, New Caledonia, France

RED LIST AUTHORITY COORDINATOR
Aurélie Fourdrain (Since 2022)
Endemia Association, Nouméa, New Caledonia, France

NUMBER OF MEMBERS
40

SOCIAL MEDIA AND WEBSITE
Facebook: @endemia.nc
Website: https://endemia.nc/en/page/le-rla-flore-nc

Mission statement

Our goal is to assess the conservation status of the whole flora of New Caledonia by 2025. New Caledonia contains some 3,371 native species of vascular plants, of which 74% are considered endemic. This exceptional floristic diversity is threatened by accelerating development. The Red Listing activities will: (1) bring a valuable tool for local institutions in charge of setting conservation priorities, and (2) allow knowledge improvement by identifying Data Deficient species.

Projected impact 2021–2025

The assessments made by our Red List Authority are used by the provinces of New Caledonia to update their regulations on protected flora.

Targets 2021–2025

ASSESS

T-001 Continue Red List assessments at a reasonable pace (ca. 250 taxa per year) in order to achieve our initial goal of listing the entire New Caledonian flora on the IUCN Red List.

Activities and results 2021

ASSESS

Red List

T-001 (KSR 6)

Number of national Red List reassessments published: Ongoing.

Result description: Since 2021, we have started work, in partnership with the Centre National de Recherche Technologique sur le Nickel et son Environnement (CNRT), Institut de Recherche pour le Développement (IRD) and Institut Agronomique Néo-Calédonien (IAC), to assess the rare and endangered species on mines. In early 2021, we signed an agreement with CNRT, IRD and IAC to work on rare and threatened endemic species on mines. Within this framework, 130 taxa have been evaluated (a total of 2,024 taxa have been evaluated since 2014). A botanical survey was also organised in Houaïlou (east coast of New Caledonia); a second one was unfortunately cancelled due to the health crisis linked to COVID-19. A workshop was also organized to work on a methodology for a better estimation of deer and wild pig threats.

Acknowledgements

Thanks to our partners, who support us financially: South Province, North Province, Loyalty Islands Provinces, France-DAFE (Direction of Agriculture and Forestry in New Caledonia), Koniambo Nickel, Prony Resources, SLN, CIPAC, OFB (French Office of Biodiversity), CNRT Nickel. And to our partners, who bring us technical and scientific support : IAC (Caledonian Agronomic Institute), IRD (French Research and Development Institute), MNHN (National Museum of Natural History), CEN NC (Conservatory of Natural Spaces), WWF, Conservation International, Noé, UMS, and PatriNat.

Summary of achievements

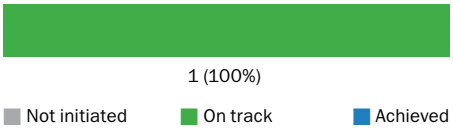
Total number of targets 2021–2025: 1

Geographic regions: 1 Oceania

Actions during 2021:

Assess: 1 (KSR 6)

Overall achievement 2021–2025:





RLA botanical survey on the Fantoche mine, northern New Caledonia, september 2022
Photo: Endemia



Botanical survey by RLA experts in partnership with the NGO Hô-üt
Photo: Hô-üt NGO

IUCN SSC Snake and Lizard Red List Authority



RED LIST AUTHORITY COORDINATOR
Philip Bowles
IUCN Biodiversity Assessment Unit
c/o Conservation International,
Washington, DC, US

NUMBER OF MEMBERS
58

Mission statement

The mission of the IUCN SSC Snake and Lizard Red List Authority is to undertake and support IUCN Red List assessments for reptile groups not covered by other Specialist Groups, including most snakes and lizards and the New Zealand Tuatara (*Sphenodon punctatus*), and to curate IUCN's global taxonomy for these groups.

Projected impact 2021–2025

Providing a comprehensive overview of each species' conservation needs, made publicly accessible to conservation managers in the range states. There is an increased focus during the reassessments on the Conservation Actions section of Red Listing to ensure useful, actionable recommendations to improve species' status are included where possible and necessary. Collaboration with the Conservation Planning Specialist Group continues and has already been used to help identify priority areas for conservation of Philippine vertebrates this quadrennium.

Targets 2021–2025

ASSESS

T-001 Ensure all snake and lizard assessments more than 10 years old are in compliance with the 10-year rule by the end of 2023 (ca. 2,750 species).

T-002 Lead on implementing the first four years of the second Global Reptile Assessment, with the estimated completion of at least 25 assessment projects by the end of 2025.

T-004 Ensure all new species described by 2025 are included on the Red List, including ca. 1,000 species described prior to 2020 that were not part of the Global Reptile Assessment.

NETWORK

T-003 Increase capacity within the Red List Authority for Red Listing independent of the Chair, including recruiting additional regional coordinators and Red List training.

Activities and results 2021

ASSESS

Red List

T-001 (KSR 6)

Number of global Red List reassessments completed: 25

Result description: As with the new descriptions, this figure is just for the few species



Lyre-headed Lizard (*Lyriocephalus scutatus*), Vulnerable,Sinharaja Forest Reserve, Sri Lanka, 2019
Photo: Philip Bowles



Malagasy Ground Boa (*Acrantophis madagascariensis*), Least Concern, Akanin'ny nofy ('The Palmarium'), eastern Madagascar, 2017
Photo: Philip Bowles

that have proceeded to submission this year (in addition to those published this year that were submitted previously). As most assessment work on reptiles this year took place after the second submission deadline, there are several hundred species (200 each from China and the Philippines, and around 150 from Europe) that are all due to be either finalised or reassessed in the first half of next year that have not been included. Of these, the Philippine species were assessed this year and work has been underway on updating the European ones, with updates to the Chinese assessments getting underway at the very end of 2021.

T-002 (KSR 6)

Number of regional assessment projects completed: 3

Result description: Projects fully completed for the Seychelles and Comoros, with the assessment stage of the Philippines complete other than receiving feedback on several final queries. Work is ongoing on two further projects, and in the planning or concept stage for 5–6 more (Madagascar, Mexico, North America, Cape Verde, Arabian Peninsula and Socotra).

T-004 (KSR 6)

Number of new global Red List assessments completed: 19

Result description: In 2021, over 100 never previously assessed species were assessed for the first time, mostly as part of the Philippine reassessment, though most are not yet fully complete. In addition to the Philippines, assessments were prepared and submitted for three new species of *Heloderma* from Mexico and Guatemala, several new species of *Oedura*, and for new descriptions from the Comoros and Seychelles. New species of *Lepidodactylus* and *Cyrtodactylus* are presently in review, and new descriptions are included in the ongoing reassessments for China and Europe. The figure given here is just for the species that were submitted this year, a distinct minority of the work completed.

NETWORK

Membership

T-003 (KSR 2)

Number of SSC members recruited: 5

Result description: I've identified and reached out to several additional people, including confirming the appointment of a Regional Coordinator for north-eastern Asia (Korea and China), but haven't yet formally sent out invitations through the system – now planned for early in the New Year.

Acknowledgements

Many thanks to the snake and lizard Specialist Groups, especially Skinks, Monitor Lizards, and Vipers, all of whom were involved in projects underway this year. Thanks also in particular to the support of Conservation International-Philippines, the Philippine Department of Natural Resources and the Rainforest Trust for support for the Philippine reassessments.

Summary of achievements

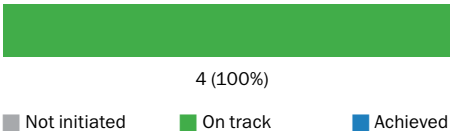
Total number of targets 2021–2025: 4

Geographic regions: 4 Global

Actions during 2021:

Assess: 3 (KSR 6)
Network: 1 (KSR 2)

Overall achievement 2021–2025:



IUCN SSC Terrestrial and Freshwater Invertebrate Red List Authority





RED LIST AUTHORITY COORDINATOR
Monika Bohm
Global Center for Species Survival, Indianapolis Zoo, Indianapolis, US

RED LIST AUTHORITY COORDINATOR
Justin Gerlach
Peterhouse, Cambridge, UK

NUMBER OF MEMBERS
34

SOCIAL MEDIA AND WEBSITE
Twitter: @tirla1

Mission statement

To support the expansion of invertebrates assessed for the IUCN Red List.

Projected impact 2021–2025

Through increases in species Red List assessments, improve the awareness on threatened invertebrates and provide the basis for species conservation plans. Improve capacity for species assessments through networking with academic and other institutions.

Targets 2021–2025

ASSESS

T-002 Facilitate (lead, review, support) at least 50 invertebrate Red List assessments per year, for invertebrate species not currently covered by any Specialist Group.

T-004 Fill gaps in invertebrate Red List coverage and priorities and opportunities based on available expert networks.

NETWORK

T-001 Build a global network of invertebrate experts, covering at least 30 countries and several taxa, to drive assessments of species not covered by existing Specialist Groups.

T-003 Engage effectively with the Invertebrate Conservation Committee to establish new priorities for the Red List Authority.



Dorcus intermedius
Photo: Gregory Setliff



Tricondyla aptera
Photo: Gregory Setliff



Xixuthrus heros, assessed in 2020 as Endangered
Photo: Hilda Waqa

COMMUNICATE

T-005 Build a presence on Twitter about invertebrates.

Activities and results 2021

ASSESS

Red List

T-002 (KSR 6)

Number of new global Red List assessments completed: 63

Result description: In 2021, with collaborators from the IUCN Red List Unit, Kutztown University and the Biodiversity Assessment Unit, 63 Red List assessments were published (Madagascar beetles; Pacific Island beetles; Australian fire-impacted invertebrates). We also received an SSC Small Grant to start an assessment of the world's Onychophora.

Research activities

T-004 (KSR 5)

Number of research projects completed or supported by SSC members per taxonomic group and region: 0

Result description: We received an SSC Small Grant to Red List the world's Onychophora. The project will start in early 2022.

NETWORK

Membership

T-001 (KSR 2)

Number of SSC members recruited: 8

Result description: We are currently still reviewing and reconstituting our membership. In 2021, eight members were recruited to focus on Pacific and Philippine beetles, US invertebrates and springtails, representing four countries.

T-003 (KSR 3)

Membership on Invertebrate Conservation Committee: 5

Result description: We've identified and reached out to several additional people, including confirming the appointment of a Regional Coordinator for north-eastern Asia (Korea and China), but haven't yet formally sent out invitations through the system; this is now planned for early in the New Year.

COMMUNICATE

Communication

T-005 (KSR 13)

Number of digital communication outputs developed in relation to specific taxonomic groups: 1

Result description: We produced a blog post about the project to assess Pacific Island invertebrates (with Kutztown University and collaborators in Fiji): https://www.indianapoliszoo.com/little-is-known-about-big-beetles/. This was distributed via social media. We also assisted one of our members with a blog post published on SSC News: **https://www.iucn.org/news/species-survival-commission/202110/supporting-youth-solving-taxonomic-impediment**.

Acknowledgements

We are grateful to the SSC Small Grants for support of the Onychophora (Velvet Worm) assessment, which will begin in early 2022. We are grateful to students from Kutztown and Christopher Newport University and collaborators in Fiji who have been instrumental in Red List assessment processes. We appreciate the continued support of the IUCN Red List Unit in implementing new invertebrate assessments.

Summary of achievements

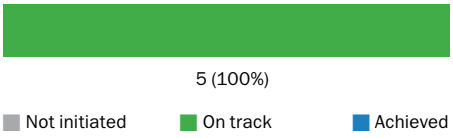
Total number of targets 2021–2025: 5

Geographic regions: 5 Global

Actions during 2021:

Assess: 2 (KSR 5, 6)
Network: 2 (KSR 2, 3)
Communicate: 1 (KSR 13)

Overall achievement 2021–2025:



IUCN SSC Turkey Plant Red List Authority







RED LIST AUTHORITY COORDINATOR
Hayri Duman
Gazi University, Ankara, Turkey

RED LIST AUTHORITY COORDINATOR
Özge Balkız
Doğa Koruma Merkezi (Nature Conservation Centre), Ankara, Turkey

RED LIST AUTHORITY COORDINATOR
Ahmet Emre Yaprak
Ankara University, Ankara, Turkey

NUMBER OF MEMBERS
100

Mission statement

The mission of the group is to assess the status of endemic plant species in Turkey, and to fill in the important knowledge gaps on the status of plants of Turkey.

Projected impact 2021–2025

The main goal of the Turkey Plant Red List Authority is to fill the knowledge gap about the threat status of endemic species in Turkey. This knowledge production will support guiding conservation decisions towards priority species in Turkey.



Hedysarum candidissimum species
Photo: Hayri Duman



Vuralia turcica
Photo: Mecit Vural

Targets 2021–2025

ASSESS

T-001 Commence the assessments of endemic plants of Turkey and publish, when finalised, on the IUCN Red List of Threatened Species (300 new Red List assessments by 2021).

T-003 Carry out IUCN Red List assessments for near endemic and non-endemic plant species in Turkey at national scale.

T-004 Publish the Red Book of Endemic Plants of Turkey.

COMMUNICATE

T-002 Facilitate internal communications among approximately 100 experts using an email list to assess progress and update on activities. Carry out Skype meetings 3–4 times every year.

Activities and results 2021

ASSESS

Red List

T-001 (KSR 6)

Number of new national Red List assessments published: 2

Result description: The first species assessments were carried out and uploaded to the IUCN Species Information Service (SIS) system through SIS Connect. Two endemic species assessments (*Sideritis gulendamii* and *Scutellaria yildirimlii*) were also uploaded to the system as a means to check functioning of the national database and SIS Connect. In 2022, through successive training given to the plant experts in Turkey, the assessment process will gain speed.

COMMUNICATE

Communication

T-002 (KSR 12)

Number of expert meetings per year: 4

Result description: We have successfully carried out online meetings with the plant experts in Turkey in order to move the assessments forward. In July 2021, such a meeting was carried out with the participation of Prof. Dr Reşit Akçakaya, with the aim of presenting the use of the national database and how to complete it following IUCN guidelines. Another meeting (face to face) is foreseen for the end of 2021 or beginning of 2022. Additional regular monthly meetings were also carried out by the Co-Chairs of the group for working on the national database and finalising it.

Acknowledgements

We would like to thank Prof. Dr Reşit Akçakaya and the IUCN Global Species Programme for their continuous support on the development of the database and the implementation of IUCN standards in the national assessments. We also thank Dr Yasin Bakış for his efforts in developing the national database.

Summary of achievements

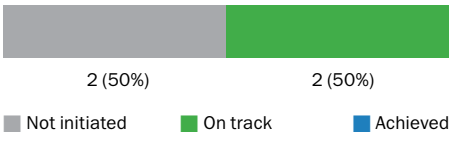
Total number of targets 2021–2025: 4

Geographic regions: 4 Asia

Actions during 2021:

Assess: 1 (KSR 6)
Communicate: 1 (KSR 12)

Overall achievement 2021–2025:



IUCN SSC West Africa Plant Red List Authority



RED LIST AUTHORITY COORDINATOR
Martin Cheek
Royal Botanic Gardens, Kew, London, UK



RED LIST AUTHORITY COORDINATOR
Fatimata Niang Diop
Institute of Environmental Sciences, University of Cheikh Anta Diop, Dakar, Senegal



RED LIST AUTHORITY COORDINATOR
Charlotte Couch
Royal Botanic Gardens, Kew, London, UK

NUMBER OF MEMBERS
17

Mission statement

The IUCN SSC West Africa Plant Red List Authority (WAPRLA) aims to increase the number of assessments of West African plant species at a faster rate than the present. We also aim to network with West African and international specialist researchers, conservationists, policymakers and other stakeholders, communicate our group's work to diverse audiences and contribute to conservation planning and actions, in a region that suffers one of the most dramatic losses of tropical forest in the world.

Projected impact 2021–2025

WAPRLA aims to increase the knowledge on extinction risk of plants in West Africa, followed by conservation planning and action, particularly in Guinea, to deliver a conservation action plan for threatened trees and work with communities to protect those species though effective collaboration and practical approaches.

Targets 2021–2025

ASSESS

T-002 Assess the extinction risk of 50 West African plant species.

T-003 Conduct reassessments of 25 West African tree species.

T-004 Publish two scientific publications acknowledging SCC affiliation.

PLAN

T-005 Prepare a Threatened Trees of Guinea Conservation Action Plan.

T-006 Develop nine Conservation Action Plans for endemic species of Guinea (subject to funding).

ACT

T-007 Carry out conservation of threatened trees of Guinea.

T-008 Involve six villages on the edge of Tropical Important Plant Areas in Guinea in species conservation and sustainable use (subject to funding).

NETWORK

T-001 Train 20 West African collaborators in IUCN Red List assessment tools.

COMMUNICATE

T-009 Write four blog posts on threatened trees of Guinea and West African plants.

Activities and results 2021

ASSESS

Red List

T-003 (KSR 6)

Number of global Red List reassessments completed: 5

Result description: The team has been working with the Botanic Gardens Conservation International (BGCI) Global Trees programme to identify and reassess threatened tree species.

PLAN

Planning

T-005 (KSR 8)

Number of conservation plans/strategies developed: 0

Result description: Discussions have taken place and the Guinea Working Group is collaborating with the SSC Conservation Planning Specialist Group and BGCI to put this together.

ACT

Synergy

T-014 (KSR 11)

Number of rural communities involved in species conservation programmes and sustainable use practices: 1

Talbotiella cheekii
Photo: Xander van der Burgt



Omphalocarpum fruit
Photo: Charlotte Couch





Collecting seed of threatened tree species in Guinea
Photo: Charlotte Couch



Calophyllum africanum
Photo: Xander van der Burgt

Result description: One tree nursery has been installed in the village of Tomboya and they are planning to install a fire break to protect the forest of Kakiwondi Tropical Important Plant Area (TIPA).

NETWORK

Capacity building

T-001 (KSR 2)

Number of people trained in assessment tools: 0

Result description: Funding for an online workshop has been attained through the SSC. The workshop will take place from 7–17 March 2022 and target the French speaking West African countries.

Acknowledgements

We would like to acknowledge the support of grants from the Darwin Initiative, Global Biodiversity Information Facility Biodiversity Information for Development (GBIF-BID) and the Fondation Franklinia for supporting aspects of Red Listing work and conservation action planning for WAPRLA. We would also like to thank BGCI and the Red List Secretariat for assisting with training for WAPRLA members.

Summary of achievements

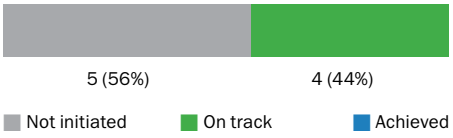
Total number of targets 2021–2025: 9

Geographic regions: 1 Global, 8 Africa

Actions during 2021:

Assess: 1 (KSR 6)
Plan: 1 (KSR 8)
Act: 1 (KSR 11)
Network: 1 (KSR 2)

Overall achievement 2021–2025:



IUCN SSC Freshwater Conservation Committee





CO-CHAIR
Topiltzin Contreras MacBeath
Universidad Autónoma del Estado de Morelos, Cuernavaca, Mexico

CO-CHAIR
Ian Harrison
Conservation International, Moore Center for Science, Arlington, Virginia, US

NUMBER OF MEMBERS
15

SOCIAL MEDIA AND WEBSITE
Twitter: @FW_Conservation

Mission statement

To raise the profile of freshwater biodiversity through: (1) coordinating freshwater species conservation activities through the SSC, highlighting emerging patterns and ensuring that increasing attention is given to issues concerning freshwater biodiversity conservation; (2) making freshwater recommendations to the SSC based on the work of the Freshwater Conservation Committee, and ensuring that freshwater species conservation issues are well represented within the SSC and the wider IUCN; (3) assisting the SSC by providing authority and credibility in its engagement with policy processes and major freshwater related events.

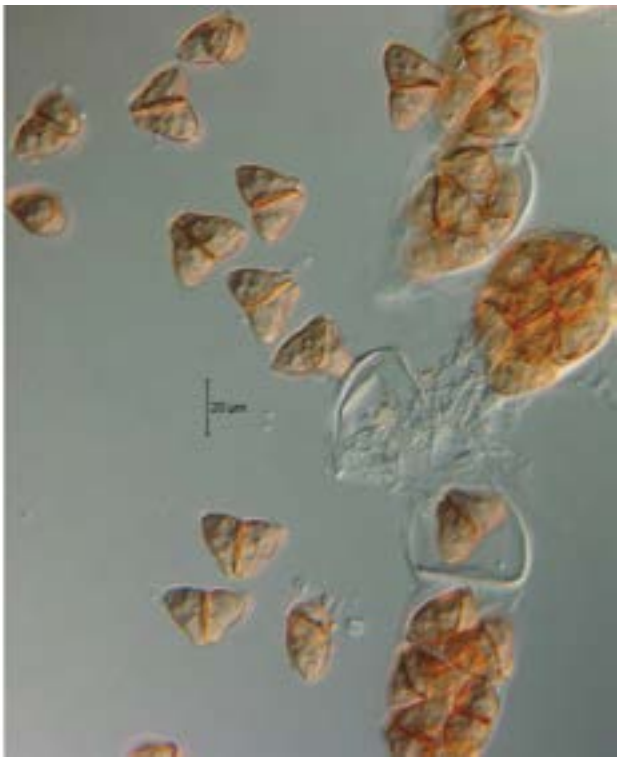
Projected impact 2021–2025

Through contributions to freshwater Red List assessments and subsequent analyses – and via linkage with freshwater-relevant Specialist Groups – the patterns of global threats to freshwater species will have been defined and the priorities for conservation (geographically and taxonomically) identified; communication, fundraising and action to conserve those species is underway; implement guidance for the Global Biodiversity Framework (GBF) such that freshwater habitats and species are included in National Biodiversity Strategies and Action Plans (NBSAPs).



Félix Feider, member of the FCC, at the NatureForAll Task Force panel discusión, 2021 World Conservation Congress
Photo: Anna Heath (Synchronicity Earth)





The Little butterfly of the swamp (*Lepidopterella palustris*), a species of freshwater fungus included in the Fantastic Freshwater report
Photo: Carol Shearer and Huzefa Raja

Targets 2021–2025

ASSESS

T-006 Identify how/where Red List assessment data are being used by Specialist Groups.

PLAN

T-008 Review habitats, taxa and possibly geographical regions which are under-represented, set them as priorities, and address these gaps.

T-009 Identify new projects where the Freshwater Conservation Committee can either directly engage with, or otherwise promote, freshwater conservation.

ACT

T-007 Identify priorities for development of new freshwater action plans, with a view to developing conservation action.

T-010 Develop a programme of conservation evidence to show where there has been freshwater conservation success, and why.

T-013 Promote freshwater conservation initiatives.

NETWORK

T-003 Broaden the membership of the Freshwater Conservation Committee to include younger members familiar with new social media technologies.

T-004 Identify and work with IUCN Commission Specialist Groups, Task Forces, and Committees in Commissions to share information on mutual objectives in freshwater, and ensure these objectives are well linked and build off each other.

T-005 Promote freshwater outputs from SSC.

T-011 Coordinate with key institutions and initiatives in identifying priorities for action, project development, fundraising, technical communications, etc.

T-012 Ensure freshwater ecosystems are adequately represented in international, national and regional policy.

COMMUNICATE

T-001 Develop and implement a communication strategy about the importance of freshwater biodiversity globally.

T-002 Communicate the importance of freshwater biodiversity globally to different audiences.

Activities and results 2021

PLAN

Planning

T-009 (KSR 8)

Number of conservation plans/strategies developed: 0

Result description: As reported elsewhere, Monika Bohm has been working closely with SSC Specialist Groups in the development of a new project, on the publication that will profile fifty freshwater species. Currently we do not have other new projects and strategies developed.

NETWORK

Membership

T-003 (KSR 2)

Number of SSC members recruited: 1

Result description: We have started discussions with Felix Feider (Synchronicity Earth), who works closely with various global youth movements for biodiversity. Felix will help us recruit youth members to the Freshwater Conservation Committee. He is already working closely with the World Commission on Protected Areas (WCPA) Freshwater Specialist Group on a similar plan. He and his colleagues in the youth networks have drafted a strategy for youth engagement, which we can adopt in the Freshwater Conservation Committee.

Synergy

T-004 (KSR 3)

Number of collaborations: 0

Result description: While we do not have specific products for this target thus far, we have been working closely with Monika Bohm at the Global Center for Species Survival, Indianapolis Zoo, in terms of identifying those SSC Specialist Groups with an interest in freshwater species. As reported

Javan Torrent Frog (*Wijayarana masonii*),
Gunung Gede Pangrango National Park, Indonesia
Photo: Topiltzin Contreras





Merganser (*Mergus merganser*) with chicks,
Hulunbuir, China
Photo: Topiltzin Contreras

elsewhere, Monika has been working closely with SSC Specialist Groups in the development of a forthcoming publication that will profile fifty freshwater species. Also as reported elsewhere, we have joined conversations with the Marine Conservation Society to discuss the formation of new SSC Groups or Task Forces that cut across Commissions, that bring together saline and freshwater interests. We also have Committee members who also represent freshwater groups in the Commission on Ecosystem Management (CEM) and WCPA. During 2022 we will focus on developing these links extensively, and more deeply.

T-005 (KSR 3)

Freshwater issues considered: 5%

Result description: While we do not have specific products for this target thus far, we have been working closely with Monika Bohm at the Global Center for Species Survival, Indianapolis Zoo, in terms of identifying those SSC Specialist Groups with an interest in freshwater species. Monika has been working closely with Re:wild and Shoal Conservation in the development of a forthcoming publication that will profile fifty freshwater species. This has been done in consultation with multiple SSC Specialist Groups and will form the basis for future networking opportunities. We have also joined conversations with the Marine Conservation Society to discuss the formation of new SSC Groups or Task Forces that cut across Commissions, that bring together saline and freshwater interests; for example, a transitional wetland ecosystems group, covering coastal and estuarine areas. These discussions are related to a session held at the 2020 IUCN World Conservation Congress focused on 'Protecting aquascapes: integrating freshwater, estuarine and marine conservation' (https://www.iucncongress2020.org/programme/official-programme/session-43443). We have also discussed



Least Concern Mexican Tetra (*Astyanax mexicanus*)
Photo: Topiltzin Contreras

the possibility of forming a Fisheries Group covering marine and freshwater fisheries. Co-Chairs Topis Contreras Macbeath and Ian Harrison have also discussed the possibility of creating a Brackish Inland Waters Group, and a Pools and Springs Group, to cover these inland ecosystems and their species that tend to get overlooked.

T-012 (KSR 4)

Number of governments supported to develop species conservation policies: 0

Result description: Specialist Group members have continued to provide feedback to the Post-2020 GBF consultation process. This has principally been via Co-Chair Ian Harrison, who has coordinated freshwater recommendations from the SSC Freshwater Conservation Committee to the Post-2020 GBF consultation. Comments have been submitted directly and provided to the SSC Post-2020 Biodiversity Targets Task Force, the WCPA Freshwater Specialist Group and WCPA Steering Committee, to the Global Species Programme in the IUCN Secretariat, to UN Water, and to similar efforts being led by WWF and The Nature Conservancy.

COMMUNICATE

Communication

T-002 (KSR 13)

Number of communication products using innovative tools: 15

Result description: Our activities on communicating the importance of freshwater biodiversity to different audiences were largely focused on contributions to the 2020 World Conservation Congress. Committee members contributed to nine sessions at the Forum, including planning, leading or co-leading some of them. Committee member Adjany Costa was part of the distinguished panel invited to the 'Freshwater Closing Plenary: Global Action to Conserve Freshwater'. Other sessions to which we contributed include: 'The Global Biodiversity Framework and freshwater ecosystems: Moving to implementation', 'Rethinking freshwater ecosystem protection and management', 'Protecting aquascapes: integrating freshwater, estuarine and marine conservation', and 'Scaling up – expanding action on the global crisis facing freshwater biodiversity'. Committee members also contributed significantly to a 'Freshwater Conservation Action Café' organised by IUCN Water and Global Species Programme. Aside from the main sessions of the Forum, we also contributed to a 'Dialogue session' on 'Fish Tales: Narratives for Freshwater Conservation' held at the Reimagine Pavilion and organised by Synchronicity Earth, and a session titled 'Assess-Plan-Act to Reverse the Red within SSC', at SSC's Reverse the Red Pavilion. We also assisted in planning a Press Conference on the Rights of Rivers, and a press conference on the World premiere of the documentary *The Roar of the Marañón* (*El Rugir del Marañón*, which was associated with the Motion on the Protection of Andes-Amazon rivers of Peru, noted below). Committee members contributed to the drafting of at least four freshwater themed motions that were passed as Resolutions: WCC-2020-Res-008 *Protecting rivers and their associated ecosystems as corridors in a changing climate*, WCC-2020-Res-018 *Valuing and protecting inland fisheries*, WCC-2020-Res-111 *Protection of Andes-Amazon rivers of Peru: the Marañón, Ucayali, Huallaga and Amazonas, from large-scale infrastructure projects*, and WCC-2020-Res-134 *Protecting the Lower Congo River from large hydro-electric dam developments*. Besides individual publications by Committee members, there were several large, international, collaborative manuscripts published in 2021 that included participation by at least two Committee members. These include: Harper, M., et al. (2021). 'Twenty-five essential research questions to inform the protection and restoration of freshwater biodiversity'. *Aquatic Conservation: Marine and Freshwater Ecosystems* 31(9):2632–2653. https://doi.org/10.1002/aqc.3634; Maasri, A., et al. (2022). 'A global agenda for advancing freshwater biodiversity research'. *Ecology Letters* 25:255–263. https://doi.org/10.1111/ele.13931; Wiedenfeld, D.A., et al. (2021). 'Conservation resource allocation, small population resiliency, and the fallacy of conservation triage'. *Conservation Biology* 35(5):1388–1395. **https://doi.org/10.1111/cobi.13696**.

Acknowledgements

We are grateful to Synchronicity Earth and Conservation International for providing support for Co-Chair Ian Harrison to work on Committee activities.

Summary of achievements

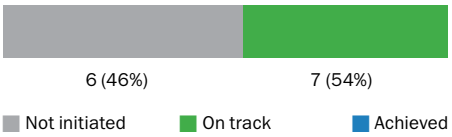
Total number of targets 2021–2025: 13

Geographic regions: 13 Global

Actions during 2021:

Plan: 1 (KSR 8)
Network: 4 (KSR 2, 3, 4)
Communicate: 1 (KSR 13)

Overall achievement 2021–2025:



2021 Report

IUCN SSC Fungal Conservation Committee





SOCIAL MEDIA AND WEBSITE
Twitter: @IUCNfungi
Website: **https://www.iucn-fungi.org**

CHAIR
Gregory M. Mueller
Chicago Botanic Garden, Glencoe, Illinois, 60022, US

DEPUTY CHAIR
Giuliana Furci
Fungi Foundation Inc., 716 Marcy Avenue, Brooklyn, NY 11216 US

NUMBER OF MEMBERS
14

Mission statement

The Fungal Conservation Committee (FunCC) aims to raise awareness of the importance of fungi and the need to conserve them, enhance coordination among the fungal and the broader conservation communities, and foster action.

Projected impact 2021–2025

Assess the extinction risk of fungal species to inform conservation planning and action for species in most need.

Targets 2021–2025

ASSESS

T-004 Coordinate and support Fungal Specialist Groups to produce and submit 3,000 global assessments.

T-010 Support Fungal Specialist Groups to produce 200 national assessments.

T-011 Work with scientists at Kew, Albuquerque BioPark, or others to refine and modify the artificial intelligence system developed and being utilised for rapidly sorting species into Data Deficient, Least Concern or need for detailed assessment.

T-012 Compile annotated bibliography of conservation mycology. Put a list of publications together and agree on controlled vocabulary for topic terms.



Yoshimuriella sp.
Photo: Bibiana Moncada





Calostoma cinnnabarina
Photo: Aida Vasco

Calostoma cinnnabarina
Photo: Gabriel Vasco

T-013 Refine research agenda for conservation mycology.

T-014 Compile list of fungi with threat assessments, not just those on the IUCN Red List but for national and regional lists.

T-015 Review new research findings, especially on population genetics and utility of environmental sampling, to update fungal Red List guidelines including more emphasis on microfungi.

PLAN

T-017 Work with countries and regions to develop national strategies for conservation of fungi.

T-018 Investigate and strategise integrating fungi into Multilateral Environmental Agreements and other multinational policies.

T-019 Produce Assess to Plan species assessments focused on Fungi.

ACT

T-016 Work with national and regional agencies, landowners/land trusts and corporations that manage land to include fungi in conservation planning.

T-020 Initiate and/or enhance existing conservation action plans.

T-021 Enhance *ex situ* and *in situ* conservation and sustainable use initiatives.

T-022 Produce intervention letters and policy recommendations to address specific needed actions.

NETWORK

T-001 Create regional conservation fungal networks/working groups as a partnership among the five Fungal Specialist Groups.

T-002 Add additional members to the FunCC as additional thematic needs are identified.

T-003 Identify potential new Fungal Specialist Groups, either taxonomic, thematic or geographic, and propose formation if appropriate leadership is available.

T-007 Continue to build capacity within Fungal Specialist Groups across the Species Conservation Cycle, communication and other issues.

T-008 Continue building capacity within the mycological community through symposia, short courses and workshops.

COMMUNICATE

T-005 Develop and implement a communication strategy engaging all members of the FunCC including a logo, website and social media.

T-006 Work with fungal NGOs and associations, conservation agencies, etc., on campaigns to highlight importance of fungi, include fungi when talking about biodiversity (fauna, flora, funga), and incorporate fungi in conservation initiatives and land management decisions, education initiatives, etc.

T-009 Raise awareness and importance of conservation initiatives and action within the mycological community through symposia, short courses and workshops.

Activities and results 2021

ASSESS

Red List

T-004 (KSR 6)

Number of new global Red List assessments completed: 200

Result description: Red List workshops were held in Brazil, Chile, Europe, Southeast Asia and the US, resulting in nearly 200 new assessments – some of which are published, others in the queue.

Research activities

T-011 (KSR 5)

Number of research projects completed or supported by SSC members per taxonomic group and region: 0

Result description: A grant proposal was submitted for a pilot project to develop a computer-based toolkit that will significantly improve efforts to assess the conservation status of fungi. The pilot project will provide the opportunity to build and test the toolkit, a necessary step before it can be rolled out globally, by focusing on the 20,000+ mushrooms and other macrofungal species reported from the US and Canada.



Leotia sp.
Photo: Aida Vasco



Diploschistes scruposus
Photo: Jessica Allen

PLAN

Policy

T-018 (KSR 9)

Number of documents provided to support/guide policy making: 2

Result description: Efforts were focused on getting fungi recognised in conservation policies, strategies and laws: (1) the Flora, Fauna, Funga initiative was led by Deputy Chair, Giuliana Furci, and the foundation she leads (https://www.faunaflorafunga.org/). The initiative resulted in a number of media stories and culminated in IUCN SSC and Re:wild joining together to call for conservation organisations to recognise Kingdom Fungi on par with Plants and Animals (https://www.iucn.org/news/species-survival-commission/202108/rewild-and-iucn-ssc-become-first-global-organizations-call-recognition-fungi-one-three-kingdoms-life-critical-protecting-and-restoring-earth); (2) a letter was published in *Science* calling for including all fungi in biodiversity plans (https://science.sciencemag.org/content/373/6553/403.1); (3) efforts were made to get additional organisations to fully incorporate fungi in their work, including NatureServe.

NETWORK

Capacity building

T-007 (KSR 2)

Number of people trained in assessment tools: 100

Result description: Capacity building courses were held for interested mycologists in Brazil, Chile, Colombia, Europe, Southeast Asia (participants from 7 countries), Thailand and the US.

T-007 (KSR 2)

Number of people trained in conservation planning: 2

Result description: Members of the FunCC participated in the Conservation Planning Specialist Group's Facilitating Species Conservation Planning Workshop.

T-007 (KSR 2)

Number of people trained in communication skills: 0

Result description: Initial discussions were held with the Global Center for Species Survival Public Relations Specialist to organise a communication training course.

T-008 (KSR 2)

Number of symposia, short courses, and workshops for the wider mycological community: 8

Result description: A number of workshops were organised across the mycological community, including in Brazil, Colombia and the US.

Membership

T-002 (KSR 2)

Number of SSC members recruited: 0

Result description: Additional members were identified with expertise in environmental law, sustainable use and from Africa, an unrepresented region. Invitations to be part of the FunCC will be made in 2022.

T-003 (KSR 2)

Number of new SSC groups established: 0

Result description: Discussions were started about the creation of the Colombian Fungal and the Brazilian Fungal Specialist Groups. The Colombian group has made good progress with appropriate leadership and potential members identified.

Synergy

T-001 (KSR 4)

Functioning network identified and beginning to address regional needs: no longer a priority

Result description: This target is no longer a priority. Considering progress with the



Cyathus sp.
Photo: Aida Vasco

Colombian Fungal Specialist Group, it was decided to focus efforts on the creation of new Specialist Groups, which will include specialists from the existing five Fungal Specialist Groups.

COMMUNICATE

Communication

T-005 (KSR 13)

Number of digital communication outputs developed in relation to specific taxonomic groups: 10

Result description: A website was created (https://www.iucn-fungi.org/) and a Twitter account was set up (https://twitter.com/IUCNfungi), which reached over 337 followers in less than six months. A communication strategy will be developed in consultation with the Global Center for Species Survival Public Relations Specialist.

T-005 (KSR 13)

Logo created: 1

Result description: A logo was developed, engaging all members of the FunCC.

T-006 (KSR 13)

Higher visibility of fungi: ongoing

Result description: The Flora, Fauna, Funga initiative was led by Deputy Chair, Giuliana Furci, and the foundation she leads (https://www.faunaflorafunga.org/). The initiative resulted in a number of media stories and culminated in IUCN SSC and Re:wild joining together to call for conservation organisations to recognise Kingdom Fungi on par with Plants and Animals (see **https://www.iucn.org/news/species-survival-commission/202108/rewild-and-iucn-ssc-become-first-global-organizations-call-recognition-fungi-one-three-kingdoms-life-critical-protecting-and-restoring-earth**).

Acknowledgements

The Fungal Conservation Committee is thankful to the Mohamed bin Zayed Species Conservation Fund for funding and the IUCN Red List Unit for their support with the extinction risk assessments of fungi. We would also like to thank Royal Botanic Gardens, Kew for collaborating in the development of tools and procedures to accelerate the number of fungal species published in the Red List. Fungi Foundation has been a key partner and leader in fungi conservation, especially with the Flora, Fauna, Funga initiative in 2021, calling for mycological inclusive language and the recognition of the Kingdom Fungi on par with Plants and Animals. Our final acknowledgments go to the Indianapolis Zoo and its Global Center for Species Survival, mainly through the support of the Plants and Fungi Conservation Coordinator.

Summary of achievements

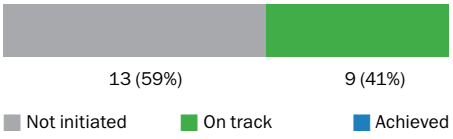
Total number of targets 2021–2025: 22

Geographic regions: 22 Global

Actions during 2021:

Assess: 2 (KSR 5, 6)
Plan: 1 (KSR 9)
Network: 7 (KSR 2, 4)
Communicate: 3 (KSR 13)

Overall achievement 2021–2025:



2021 Report

IUCN SSC Invertebrate Conservation Committee



CHAIR
Axel Hochkirch
Trier University, Germany

NUMBER OF MEMBERS
11

SOCIAL MEDIA AND WEBSITE
Facebook: @IUCN.SSC.ICC

Mission statement

The mission of the Invertebrate Conservation Committee (ICC) is to foster the conservation of terrestrial and freshwater invertebrates and their habitats around the world. We assess their conservation status, raise awareness and engage in practical conservation of these most species rich taxonomic groups on Earth.

Projected impact 2021–2025

We aim to expand coverage of biodiversity within the IUCN SSC by adding more Specialist Groups for invertebrate taxa and raise the profile of invertebrates on the international conservation agenda.

Targets 2021–2025

ASSESS

T-008 Conduct dung beetle Red List assessments.

T-011 Assess South African millipedes.

PLAN

T-007 Develop three conservation strategies for threatened European pollinators.

ACT

T-004 Conduct an integrative multi-taxon Assess-Plan-Act Project in the Nilgiri Biosphere Reserve (India).

T-005 Publish an article on how Red List assessments lead to conservation action.

T-006 Send an Intervention Letter regarding Ayyalon Cave.

NETWORK

T-002 Increase the number of Invertebrate Specialist Groups.

T-003 Organise an international congress on invertebrate conservation.

T-009 Establish a Dung Beetle Specialist Group.

T-010 Expand the scope of the Butterfly Specialist Group to include moths.

COMMUNICATE

T-001 Develop Guidelines for Invertebrate Conservation in Protected Areas.

Activities and results 2021

ASSESS

Red List

T-011 (KSR 6)

Number of new global Red List assessments completed: 73

Result description: A total of 73 Red List assessments for South African millipedes were conducted, including 31 re-assessments.

PLAN

Planning

T-007 (KSR 8)

Number of conservation plans/strategies developed: 1

Result description: Funded by the European Commission, we have started to develop three conservation action plans for threatened pollinators. The first one (for Canarian Pollinators) was completed in 2021.



Betiscoides meridionalis, an endemic grasshopper from South Africa
Photo: Axel Hochkirch



The fly *Tachina fera*. Its larvae are parasitoids of moth caterpillars
Photo: Axel Hochkirch

ACT

Conservation actions

T-004 (KSR 10)

Number of areas under management for the species or group of species: 0

Result description: A first survey project in the Nilgiri Mountains has been started by Dhaneesh Bhaskar. Further planning has been postponed due to the COVID-19 pandemic.

T-006 (KSR 10)

Number of intervention letters addressing major drivers/emerging threats of species or population loss: 1

Result description: An intervention letter to prevent deterioration of Ayyalon Cave in Israel was sent to the authorities and the road construction plans have been changed as a result of the intervention.

NETWORK

Membership

T-002 (KSR 2)

Number of new SSC groups established: 2

Result description: In 2021, two new Specialist Groups for invertebrates were approved (Mite Specialist Group, Ant Specialist Group).

T-009 (KSR 2)

Number of new SSC groups established: 0

Result description: Three virtual meetings with dung beetle specialists were held with the aim of establishing a Dung Beetle Specialist Group.

T-010 (KSR 2)

Name change and addition of new members: 1

Result description: The Butterfly Specialist Group has been changed to become the Butterfly and Moth Specialist Group with a new, additional Co-Chair (Mike Jordan).

Synergy

T-003 (KSR 3)

Congress held: 0

Result description: Due to the COVID-19 pandemic, organisation of the congress has been postponed.

COMMUNICATE

Communication

T-001 (KSR 13)

Number of digital communication outputs developed in relation to specific taxonomic groups: 0

Result description: The structure of IUCN guidelines for invertebrate conservation in protected areas has been drafted and will be discussed with ICC members in 2022.

Acknowledgements

We are grateful to the SSC Chairs' Office for constant support, including SSC internal grants. We also want to thank Sergio Henriques (Global Center for Species Survival) for his help. Finally, we are grateful to the Mohamed bin Zayed Species Conservation Fund.



Dung beetle (*Bubas bubalus* (Olivier, 1811)) from Southern Portugal. A species that has been introduced in Australia to address the expansion of cattle farming in the country
Photo: Sergio Henriques

Summary of achievements

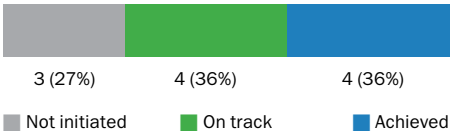
Total number of targets 2021–2025: 11

Geographic regions: 7 Global, 1 Africa, 2 Asia, 1 Europe

Actions during 2021:

Assess: 1 (KSR 6)
Plan: 1 (KSR 8)
Act: 2 (KSR 10)
Network: 4 (KSR 2, 3)
Communicate: 1 (KSR 13)

Overall achievement 2021–2025:



2021 Report

IUCN SSC Marine Conservation Committee



SOCIAL MEDIA AND WEBSITE
Twitter: @SSCmarine
Website: **www.iucn-sscmarine.org**

CHAIR
Amanda Vincent
Project Seahorse–Institute for the Oceans and Fisheries, The University of British Columbia, Canada

NUMBER OF MEMBERS
10

Mission statement

The mission of the IUCN SSC Marine Conservation Committee is to support, enhance and mobilise expertise in marine species conservation for a better future. Its mandate is to ensure that decisions on marine species are directed at long-term population health and based on sound technical knowledge. Specifically, it helps and links volunteer experts from the IUCN Species Survival Commission's (SSC) network who have special knowledge of particular taxa or of cross-cutting concerns. It also advocates the use of SSC marine knowledge and skills in the broad global community, particularly by policy makers and resource managers.

Projected impact 2021–2025

The Marine Conservation Committee will lead and support the creation of at least 10 new marine species Specialist Groups and a fisheries Task Force. The committee will support new and existing species Specialist Groups by assessing best practices among marine groups and collating this information for implementation by other groups.

The Conservation Planning Specialist Group will be supported by the committee in order to increase marine capacity in conservation planning. Resolutions on critical marine issues, including emergency resolutions, will be supported for the 2024 World Conservation Congress.

Targets 2021–2025

ASSESS

T-003 Represent marine issues on IUCN Red List Committee.

PLAN

T-001 Complete Marine Conservation Committee strategic plan.

T-006 Increase marine capacity in conservation planning through the Conservation Planning Specialist Group.

ACT

T-007 Influence the Convention on Biological Diversity post-2020 Biodiversity Framework in favour of marine species conservation.

T-008 Generate collective action on marine bycatch.

T-009 Support submission of emergency resolutions for the IUCN World Conservation Congress.

T-010 Prepare new resolutions on critical marine issues for the 2024 World Conservation Congress.

NETWORK

T-002 Host 12 marine-focused SSC seminars and workshops on special topics.

T-004 Assess best practices among marine Specialist Groups.

T-005 Create new marine Specialist Groups and Task Forces.

T-011 Submit proposals for marine-focused events at the 2024 World Conservation Congress.

COMMUNICATE

T-012 Create an official logo for the Marine Conservation Committee.

Activities and results 2021

ASSESS

Red List

T-003 (KSR 6)

Number of Red List Committee meeting interventions: 0

Result description: Ongoing. A member of the Marine Conservation Committee sits on the Red List Committee.



A Critically Endangered Hawksbill Sea Turtle (*Eretmochelys imbricata*) rests on an algae bed in the Coral Sea off Papua Burat, Indonesia
Photo: Sabine Templeton



A Near Threatened Magellanic Penguin (*Spheniscus magellanicus*) swims on the surface in Golfo Nuevo, Argentina
Photo: robottazzi/iNaturalist



Boring giant clam (*Tridacna crocea*) is named as such due to its boring behaviour into coral rubble that embeds itself throughout its adult life. It can grow up to 15 cm long
Photo: Neo Mei Lin/Tropical Marine Science Institute

PLAN

Planning

T-001 (KSR 8)

Number of strategic plans developed: 0

Result description: Plans are in progress to meet in person in 2022 to complete the Marine Conservation Committee strategic plan.

ACT

Policy

T-009 (KSR 10)

Number of marine emergency resolutions submitted: 1

Result description: We supported and mentored proponents of the successful Motion 132 – Controlling and monitoring trade in croaker swim bladders to protect target croakers and reduce incidental catches of threatened marine megafauna. We reviewed several other potential motions and resolutions that were deemed not advisable to pursue.

NETWORK

Capacity building

T-004 (KSR 2)

Report on best practices among marine Specialist Groups: 45%

Result description: A first draft of eight modules has been produced and will go to the SSC Chair's Office for review.

Membership

T-005 (KSR 2)

Number of new SSC groups established: 0

Result description: Introductory meetings have now been held for four new SSC marine Specialist Groups: Marine Stars, Sea Cucumbers and Urchins, Seaweeds, and Fisheries. Proposals have been drafted and calls for leadership nominations have been made.

Acknowledgements

The Marine Conservation Committee would like to thank Project Seahorse, Guylian Chocolates Belgium, the Langar Foundation, The Indianapolis Zoo, the Lilly Endowment and the respective host institutions of all members of the Committee.

Summary of achievements

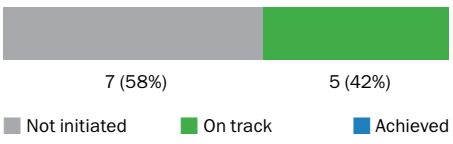
Total number of targets 2021–2025: 12

Geographic regions: 2 Global, 10 Body of water

Actions during 2021:

Assess: 1 (KSR 6)
Plan: 1 (KSR 8)
Act: 1 (KSR 10)
Network: 2 (KSR 2)

Overall achievement 2021–2025:



IUCN SSC Plant Conservation Committee





CO-CHAIR
Paul Smith
Botanic Gardens Conservation International, Richmond, UK

CO-CHAIR
Domitilla Raimondo
South African National Biodiversity Institute (SANBI), South Africa

NUMBER OF MEMBERS
26

Mission statement

The IUCN SSC Plant Conservation Committee (PCC) leads IUCN's efforts in stemming the loss of global plant diversity through its wide-ranging network of plant conservationists. The PCC is responsible for advising and assisting on the overall prioritisation and programme oversight within the SSC to deliver on its plant conservation responsibilities. The PCC works to support and facilitate the activities of the SSC Chair, the IUCN Global Species Programme, and the expert volunteer network of Specialist Groups, Red List Authorities, Task Forces and others, providing overall strategic guidance and direction in accordance with the mandate of the SSC.

Projected impact 2021–2025

Promote the inclusion of plant related information, skills and tools to support global conservation planning and actions, such as the Post-2020 Global Biodiversity Framework, Key Biodiversity Areas, restoration initiatives and sustainable use. Support the SSC plant specialist groups in evaluating the extinction risk of key plant groups, such as trees and Crop Wild Relatives, prioritising which species are in most need of emergency recovery work, and producing more effective conservation plans and actions for plant species.

Targets 2021–2025

ASSESS

T-004 Promote inclusion of all plant data available in the IUCN Red List for definition of Key Biodiversity Areas (KBAs) and Alliance for Zero Extinction (AZE) sites.

T-006 Consider reformulation of KBAs to include Crop Wild Relative (CWR) species.

T-007 Work with regional Specialist Groups to get them involved with the KBAs process at national level, making sure plant species are included in that process and can contribute to spatial strategic planning for conservation at a larger scale.

T-016 Develop discussion paper on use and trade of wild plants for different sectors and conservation approaches/intervention types (e.g. commercial uses for ornamental/horticulture, medicine, food and beverages/cosmetic, timber, subsistence uses).

T-020 Support the completion of assessments on key groups: Global Trees, Global Priority CWR, Medicinal and aromatics.

T-021 Ensure national endemics are represented in the Red List.

T-023 Identify groups of plants to be assessed regularly and included on the Red List Index and other global indicators.

PLAN

T-001 Promote the inclusion of more plant information on the Post-2020 Framework and other multilateral environmental agreements.

T-012 Use Kew Declaration to create an emergency motion for the IUCN World Conservation Congress.

T-018 Collate/contribute plants use/trade inputs to CITES, the Convention on Biological Diversity (CBD), and the Food and Agriculture Organization, including information on illegal trade.

T-025 Produce a policy brief on CWR and their role in adaptation to climate change and consider turning this into a resolution for the next IUCN World Conservation Congress (WCC).

ACT

T-002 Encourage each plant Specialist Group to work on recovery actions ensuring that the proportion of plant groups engaged in recovery action work increases by the end of the quadrennium, with the objective to ensure all Specialist Groups are actively engaged in this work in the next quadrennium.

T-003 Develop a methodology to prioritise which species are in most need of emergency recovery and which actions are needed and share this with all plant groups.



Reintroduction of *Parakmeria omeiensis* (Magnoliaceae)
Photo: Hai Ren

T-005 Encourage regional Specialist Groups to identify potential species of conservation concern (threatened, restricted range, CWR and others of socioeconomic importance) that aren't already covered by protected areas, ensure their inclusion in protected areas expansion work and promote their active conservation.

T-010 Support Specialist Groups to be involved with Botanic Gardens Conservation International's five-year strategic plan target on work with the Ecological Restoration Alliance.

T-013 Contribute to developing an international standard specific to biodiversity, combining existing guidelines and best practices to promote and support the use of native plants and local botanical expertise in afforestation, reforestation and restoration, and the sustainable use of non-native trees.

T-014 Quantify, coordinate and promote the role of the IUCN SSC Plant Specialist Groups and botanic gardens in conserving socio-economically important species, reducing the threat of over-exploitation to plants, and sustainable management of plants for improved livelihoods in support of the Sustainable Development Goal.

T-019 Inform donor priorities on reducing illicit trade in plant resources and enabling sustainable and legal use and trade.

NETWORK

T-008 Continue to develop strategic partnerships to influence restoration policy and practice (e.g. IUCN Bonn Challenge Secretariat, UN Decade on Ecosystem Restoration, etc.), including identifying regional focal points from plant Specialist Groups.

T-009 Create a PCC advisory group on ecological restoration, including regional focal points from plant Specialist Groups and those we want to influence (IUCN Commission on Ecosystem Management, IUCN Conservation Translocation Specialist Group, IUCN Bonn Challenge Secretariat).

T-015 Create a Plant Use Group, possibly within the Sustainable Use and Livelihoods Specialist Group (SULi), involving members from PCC, Specialist Groups and partner organisations like TRAFFIC and Botanic Gardens Conservation International (BGCI), and/or an advisory group within the PCC.

T-022 Create new groups to focus on regions with gaps in the Red List: Mesoamerica/Mexico, South America (Venezuela, Ecuador, Peru, Bolivia), Southeast Asia, Australia.

T-026 Collate information about which Specialist Groups are working with CWR and in what aspects and make the link between the Specialist Groups and the Crop Wild Relative Specialist Group (CWRSG) for Red Listing and other activities concerning conservation planning, *ex situ* and *in situ* conservation implementation.

T-027 Organise a series of thematic webinars and virtual meetings with the PCC, all the plant Specialist Groups and cross-thematic groups to share experiences and catalyse collaborations for projects on the species conservation cycle (assess-plan-act).

T-028 Work with the Conservation Planning Specialist Group to organise a training workshop for the plant Specialist Groups on conservation planning and promote the development of conservation plans to implement impactful conservation actions.



Vicia bithynica (L.) L., a Tertiary wild relative of faba beans, in Mafra, Portugal
Photo: Joana Magos Brehm

COMMUNICATE

T-011 Gather species data, case studies and stories from plant Specialist Groups to promote during the UN Decade on Ecosystem Restoration.

T-017 Contribute to the 'wild plants are our business' public campaign (with/via botanic gardens, private sector), increasing the awareness of the use of wild plants in products, opportunities and risks, and aiming at wider market transformation.

T-024 Help raise the profile of CWR and their value within IUCN, the Specialist Groups and globally. Disseminate available tools and guidelines on CWR conservation planning and management developed by the CWRSG among the other Specialist Groups, and consider including more case studies from different regional experiences.

Activities and results 2021

ASSESS

Research activities

T-006 (KSR 6)

Number of new Key Biodiversity Areas confirmed in the World Database of KBAs (WDKBA): 0

Result description: A meeting between members of the PCC (Domitilla Raimondo, Cátia Canteiro, Joana Magos Brehm), the CWRSG (Nigel Maxted and Joana Magos Brehm), the KBA Secretariat (Andy Plumptre) and the KBA Technical Working Group (Penny Langhammer and Olivia Crowe) was held in September 2021 to discuss the possibilities of reformulating the KBAs to include CWR diversity. It was agreed that it would be interesting to understand how the existing KBAs cover CWR diversity. With this in mind, a student from the University of Birmingham (UK) initiated a project, under the supervision of Nigel Maxted and Joana Magos Brehm, which aims at: (i) evaluating the overlap between the distribution of priority CWR, the most closely related CWR to crops and the KBAs; (ii) identifying KBAs for threatened/narrowly distributed CWR; (iii) assessing whether CWR hotspots and priority sites for *in situ* conservation overlap with existing KBAs and/or meet KBA criteria. These analyses are expected to be carried out for European and southern African CWR and are expected to be finalised by April 2022.

T-006 (KSR 6)

Number of Key Biodiversity Areas in the World Database of KBAs (WDKBA) updated after reassessment for species: 0

Result description: Same result reported for previous indicator.

T-016 (KSR 5)

Number of scientific publications about species research that acknowledge SSC affiliation: 0

Result description: Initial conversations took place on the development of the discussion paper, with the focus on trade in timber, as well as the parallel efforts led by TRAFFIC and the IUCN Medicinal Plant Specialist Group on the trade in wild plant products as ingredients.

PLAN

Policy

T-001 (KSR 9)

Number of policies where SSC members provided technical input: 1

Result description: The Plant Conservation Committee contributed to drafting targets and indicators for the Post-2020 Global Strategy for Plant Conservation. Once endorsed by parties to the Convention on Biological Diversity this will be the third iteration of the Global Strategy for Plant Conservation. Unlike the previous two versions which were stand-alone strategies, this time plant targets have been formulated to nest within the Post-2020 Global Biodiversity Framework. The Post-2020 Global Strategy for Plant Conservation will be presented at the CBD Subsidiary Body on Scientific, Technical and Technological Advice (SBSTTA) meeting scheduled to take place in the first quarter of 2022.

T-012 (KSR 9)

Emergency motion submitted: achieved

Result description: An emergency motion on reforestation entitled 'Planting the right tree in the right place for the right purpose' was submitted at the IUCN World Conservation Congress in Marseille. The motion was submitted by Noé as the proponent organisation, and it was co-sponsored by 28 additional organisations. Although the Resolutions Committee recognised the importance of the motion and the problem of tree planting using non-native species, the motion was not accepted since it was not considered a new issue and was already addressed in the IUCN Programme 2021–2024. However, the Plant Conservation Committee will be looking at ways to continue to address this issue and promote the planting of native tree species.

T-018 (KSR 9)

Number of contributions by SSC groups to CITES or CMS for listing or uplisting species: 2

Result description: Contribution was provided to the draft Global Strategy for Plant Conservation to 2030, alongside the Global Biodiversity Framework and specific Targets on use and trade in wild species.

ACT

Conservation actions

T-003 (KSR 10)

Number of technical documents provided to support conservation actions: 0

Result description: The Global Tree Portal tracker (https://www.bgci.org/resources/bgci-databases/globaltree-portal/) was developed and launched to track *ex situ* and *in situ* conservation action for tree species in real time, and which can be used to identify gaps in conservation effort. These data will be used to alert plant conservation practitioners to the highest risk threatened species and to 'gap' species which are not currently subject to species recovery actions at all.

T-013 (KSR 10)

Number of technical documents provided to support conservation actions: 0

Result description: The Global Biodiversity Standard development was announced and website launched at the UN Climate Change Conference of the Parties (COP26) by BGCI, PCC, World Agroforestry Centre (ICRAF), Society for Ecological Restoration (SER), TRAFFIC, Ecosia, Plan Vivo and 1t.org (https://www.biodiversitystandard.org/). A project proposal was submitted to the UK Government by partners and country-based botanical institutions to (a) develop and test the Global Biodiversity Standard methodology; (b) build country level hubs of expertise able to carry out biodiversity assessments and mentoring; (c) develop a cost-effective business model for the Global Biodiversity Standard; and (d) work with policymakers and financiers of tree planting and restoration to mandate or require site-based biodiversity assessments.

T-014 (KSR 11)

Number of projects providing evidence that use is sustainable per taxonomic group and region: 0

Result description: Associated with the consolidation of the Plant Use Group, it is planned that the survey of botanic gardens and plant Specialist Groups on their existing use/trade activities will be rolled out in 2022, led by BGCI (focus on botanic gardens), with the support from PCC and SULi (focus on the SSC network). It is anticipated that the outcomes of the survey and discussion on follow-up can be scheduled in June–July 2022.

T-010 (KSR 10)

Number of groups involved with BGCI's five-year strategic plan: 0

Result description: During 2021, consultations were held with members of the Ecological Restoration Alliance of Botanic Gardens (ERA) and a strategy for the next five years developed. This will be circulated to plant Specialist Groups in early 2022 with suggestions on how Specialist Groups can be involved in delivering the targets.

NETWORK

Membership

T-009 (KSR 2)

Number of SSC members recruited: 0

Result description: A request for restoration focal points from plant Specialist Groups was circulated. A list of other people from within IUCN to involve in the restoration group has also been developed. A concept note for the restoration group has been drafted which is currently in final review. A request to join the group will be sent out in early 2022.

T-009 (KSR 2)

Member expertise distribution: ongoing

Result description: Same result reported for previous indicator.

T-015 (KSR 3)

Number of SSC members recruited: 0

Result description: The Plant Conservation Committee advanced the discussion with IUCN SULi on the establishment of the Plant Use Group, which will be set up as a group within SULi, benefiting from the existing infrastructure and building on the initial membership of SULi. It is anticipated that the Plant Use Group will be announced in SULi in January 2022, with the invitations to plant Specialist Groups to participate sent out between February and March 2022. In addition to the overall discussion about the Plant Use Group, a subset of PCC and other interested SSC members, as well as the TRAFFIC timber trade expert, participated in a discussion about the utility and necessity of formulating a set of priority objectives surrounding trade in timber. The decision was made to create a temporary task team, with follow-up anticipated in January 2022.

T-022 (KSR 2)

Number of new SSC groups established: 0

Result description: Discussions were initiated with Bolivian botanists to set up a Bolivian Plant Specialist Group or Standalone Red List Authority.

Synergy

T-008 (KSR 3)

IUCN bodies with which the SSC group collaborates to advance targets: 2

Result description: BGCI and other PCC members have been actively developing strategic partnerships for restoration during 2021, promoting the important skills and knowledge of plant Specialist Groups. This includes joint funding applications and strengthened partnerships with SER (who are a UN Decade on Ecosystem Restoration partner) and 1t.org.

T-008 (KSR 3)

Non-IUCN bodies with which the SSC group collaborates to advance targets: 2

Result description: Same result reported for previous indicator.

COMMUNICATE

Communication

T-017 (KSR 13)

Number of digital communication outputs developed in relation to specific taxonomic groups: 0

Result description: The collaboration is being developed around the 'wild plants are our business' and 'we use wild' campaigns, planned for 2022, to raise the awareness of risks and opportunities associated with the trade in wild plant ingredients, through the concerted efforts of botanic gardens and the plant conservation community at large. The link will also be made to the planned activities by IUCN SULi to raise the profile of sustainable wild use among the public.

Summary of achievements

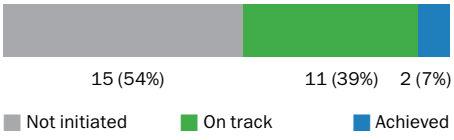
Total number of targets 2021–2025: 28

Geographic regions: 28 Global

Actions during 2021:

Assess: 3 (KSR 5, 6)
Plan: 3 (KSR 9)
Act: 4 (KSR 10, 11)
Network: 6 (KSR 2, 3)
Communicate: 1 (KSR 13)

Overall achievement 2021–2025:



2021 Report

IUCN SSC Standards and Petitions Committee



CHAIR
H. Resit Akçakaya
Stony Brook University, Stony Brook, New York, US

NUMBER OF MEMBERS
7

Mission statement

The Standards and Petitions Committee is responsible for ensuring the quality and standards of the IUCN Red List of Threatened Species, developing guidelines for the application of the IUCN Red List Categories and Criteria and ruling on petitions against the listings of species on the IUCN Red List of Threatened Species.

Projected impact 2021–2025

The impact of the Standards and Petitions Committee (SPC) on conservation is indirect, through its efforts to maintain and increase the credibility and reliability of the IUCN Red List as the most authoritative source of the conservation status of species.

Targets 2021–2025

ASSESS

T-001 Provide support to the SSC groups and Red List Unit in the Red List assessment process, addressing their petitions, misunderstandings and problems.

Activities and results 2021

ASSESS

Red List

T-001 (KSR 6)

Assistance provided to SSC Groups and Red List Unit: ongoing

Result description: The Red List guidelines revision has started and will hopefully be published in early 2022. One petition was received. We reviewed the two African Elephant species, contributed to two articles and responded to a lot of comments and questions on applying the Red List Categories and Criteria. These comments can affect the revision of the Red List guidelines. We also participated in two meetings, including the Red List and Climate Change Specialist Group meetings.

Summary of achievements

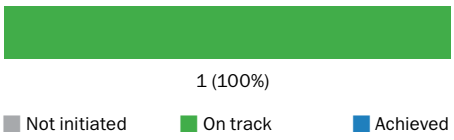
Total number of targets 2021–2025: 1

Geographic regions: 1 Global

Actions during 2021:

Assess: 1 (KSR 6)

Overall achievement 2021–2025:





Standards and Petitions Committee at a meeting
in November 2015 at the University of New South Wales,
Sydney, Australia
Photo: Craig Hilton-Taylor



AFRICAN ELEPHANT



AFRICAN RHINO



AFROTHERIA



AMPHIBIAN



ANGUILLID



ANT



ANTEATER, SLOTH AND ARMADILLO



ANTELOPE



ASIAN ELEPHANT



ASIAN RHINO



ASIAN SONGBIRD TRADE



ASIAN SPECIES



ASIAN WILD CATTLE



BAT



BEAR



BIODIVERSITY AND FAMILY PLANNING



BISON



BRAZIL PLANT



BUSTARD



BUTTERFLY AND MOTH



CACTUS AND SUCCULENT



CANID



CAPRINAE



CARNIVOROUS PLANT



CAT



CAVE INVERTEBRATE



CETACEAN



CHAMELEON



CHINA PLANT



CHYTRID, ZYGOMYCETE, DOWNY MILDEW AND SLIME MOULD



CLIMATE CHANGE



COLOMBIAN PLANT



CONIFER



CONSERVATION GENETICS



CONSERVATION PLANNING



CONSERVATION TRANSLOCATION



CORAL



CORMORANT



CRANE



CROCODILE



CROP WILD RELATIVE



CUBAN PLANT



CYCAD



DEER



DRAGONFLY



DUCK



EQUID



FIREFLY



FLAMINGO



FRESHWATER CONSERVATION



FRESHWATER CRUSTACEAN



FRESHWATER FISH



FRESHWATER PLANT



FUNGAL CONSERVATION



GALAPAGOS PLANT



GALLIFORMES



GIRAFFE AND OKAPI



GLOBAL FRESHWATER MACROINVERTEBRATE SAMPLING PROTOCOLS



GLOBAL TREE



GRASSHOPPER



GROUPERS AND WRASSES



HAWAIIAN ISLANDS PLANT



HERON



HIPPO



HORNBILL



HORSESHOE CRAB



HOVERFLY



HUMAN WILDLIFE



HYAENA



IGUANA



INDONESIAN PLANT



INVASIVE SPECIES



INVERTEBRATE CONSERVATION



KOREAN PLANT



LADYBIRD



LAGOMORPH



LARGE CARNIVORE INITIATIVE FOR EUROPE



LICHEN



LOON



MACARONESIAN ISLAND PLANT



MANGROVE



MARINE MAMMALS



MARINE TURTLE



MASCARENE ISLANDS PLANT



MAYFLY, STONEFLY AND CADDISFLY



MEDICINAL PLANT



MOLLUSC



MONITOR LIZARD



MUSHROOMS, BRACKETS AND PUFFBALLS



NEW WORLD MARSUPIALS



ORCHID



OTTER



PALM



PANGOLIN



PECCARY



PELICAN



PENGUIN



PHYLOGENETIC DIVERSITY



PINNIPED



POLAR BEAR



PRIMATE



RED LIST



SALMONID



SOUTH ASIAN INVERTEBRATE



SEAGRASS SPECIES



SEA SNAKE



SEAHORSE, PIPEFISH AND SEADRAGON



SHARK



SIRENIA



SKINK



SMALL CARNIVORE



SMALL MAMMAL



SNAKE



SNAPPER, SEABREAM AND GRUNT



SOUTH AMERICAN CAMELID



SOUTH ASIAN INVERTEBRATE



SPECIES MONITORING



SPIDER AND SCORPION



STORK, IBIS AND SPOONBILL



STURGEON



SUSTAINABLE USE AND LIVELIHOODS



SWAN



TAPIR



TASK FORCE ON SYSTEMIC PESTICIDES



TERRESTRIAL AND FRESHWATER INVERTEBRATE



THREATENED WATERFOWL



TORTOISE AND FRESHWATER TURTLE



TUNA AND BILLFISH



VIPER



VULTURE



WESTERN GHATS PLANT



WILD PIG



WILDLIFE HEALTH



WOODCOCK AND SNIPE



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SSC
Species Survival Commission