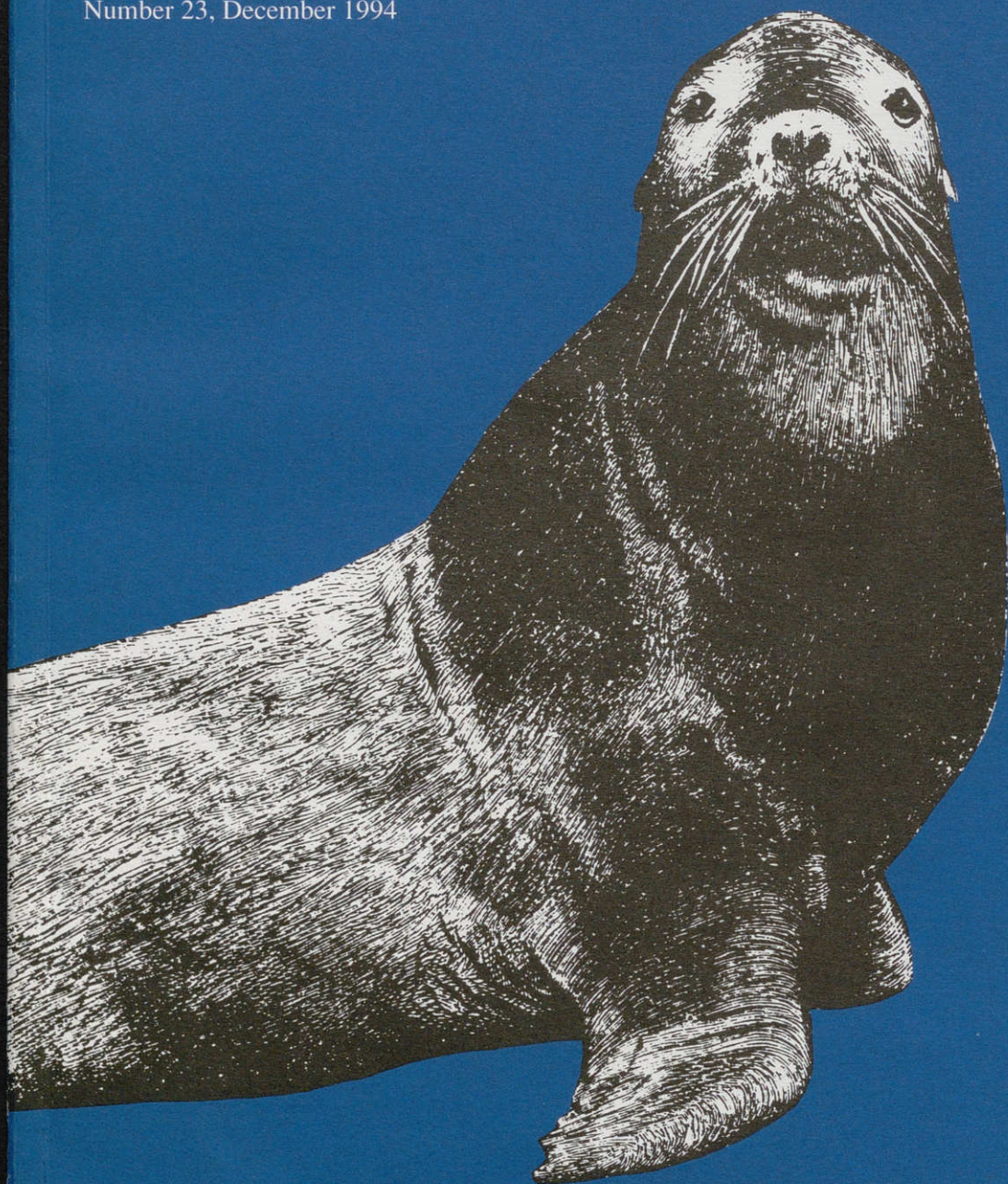


Species

Newsletter of the Species Survival Commission
IUCN—The World Conservation Union
Number 23, December 1994



Species is the newsletter of the Species Survival Commission of IUCN—The World Conservation Union. Commission members, in addition to providing leadership for conservation efforts for specific plant and animal groups, contribute technical and scientific counsel to biodiversity conservation projects throughout the world. Commission members also serve as resources to governments, international conventions, and conservation organizations.

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SPECIES SURVIVAL COMMISSION

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The SSC—Operations and Plans

From the Chairman

Diversity was the theme of this year's annual meeting of the American Association for the Advancement of Science (AAAS). Great prominence was given to the study and saving of biological diversity and to environmental concerns generally. Knowledgeable speakers on these topics came from academia, government and non-governmental organizations, and institutions, including people from IUCN member organizations, SSC Cooperating Organizations, and allied organizations. They said important things about the problems of knowing life's diversity, understanding relevant social and political dynamics, and responding to the overwhelming dominance of traditional economic thinking in approaching environmental problems.

However, most striking was the apparent incapacity of these talented people and their organizations actually to effect progressive change for environmental well-being. The small audiences and poor coverage in the news media spoke to a prime failing, namely, poor communications, which is not a problem unique to AAAS. As conservationists, we all must acknowledge that we are simply not doing an adequate job if we do not communicate well to all constituencies (policy makers, resource managers, producers and consumers of resources, the general public, other professional communities, and the news media).

We need to communicate widely and well in the idioms of the audiences at each stage of dealing with conservation matters:

- identifying emergent issues or unabated problems for the biota and other natural resources
- gathering information on status of species and ecosystems and on causes of threat
- analyzing the information for patterns and correlations
- planning the appropriate response and estimating risks
- prioritizing in accord with values, and with potential resources

- resourcing the response plan or policy
- implementing the plan/strategy
- evaluating the results or effects
- recognizing success/failure
- incorporating lessons learned in future projects, programs, plans, policies, and processes.

We evidently need to communicate not just basic information about the status of and threats to natural resources, but also about their intrinsic and extrinsic values. Perhaps it is equally important to convey why we ourselves care about these resources, whether we are concerned about a species or an ecosystem. Because we strive to present an objective viewpoint in our information gathering and analysis work, we often carry over this demeanor to communications when we are prioritizing and advocating. Although it takes some skill to distinguish the role one is playing when one shifts from neutral scientist to alarmed activist, we must learn to be more passionate and persuasive in influencing other constituencies to manage their activities better in relation to nature and its living resources.

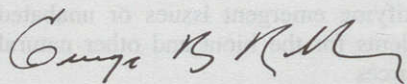
A major difficulty in communicating successfully to other constituencies about conservation is that we have a very diverse community of conservation interests, and consequently other people may hear confusing or even conflicting messages about what is happening to the natural world, people's relations to the problem issues, and what to do about the situations. The IUCN, of course, can alleviate some of this confusion at the international level through its unique governmental and non-governmental membership, but it is evident that we conservationists need more cohesion in what we present to the rest of world's peoples. Even with the acceptance of general global strategies and policies, there remains the enormous task of having consistent plans for action that incorporate the many disci-

plines and interests that are involved. With more unified efforts we gain strength in advocacy about the allocation of resources and about wise resolution of environmental issues. In technical fields such as particle physics there is considerable unity of approach, but conservation requires a much wider array of talents, involving social as well as biological sciences, and numerous professional disciplines such as law, environmental health, and economics.

To carry on our conservation activities without more collaboration among diverse professional and other constituencies on common agendas, or at least goals, will continue to make our successes less frequent than they should be. The current political scene in the United States reflects such a situation: although there are numerous non-governmental conservation groups and relevant institutions operating at local community as well as at national levels, at least temporarily the national direction is being set contrary to the general interests of conservation. Lack of a national policy on the environment and natural resources is a distinct handicap in this instance, but even with such a policy or plan, there has to be more commitment to cooperation by both governmental and non-governmental groups if the agreed goals are to be reached and respected by all the citizenry, including its political leadership.

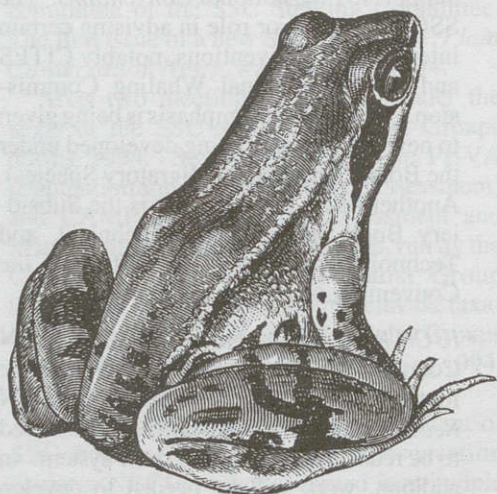
In relation to the problems identified above, I am pleased to report that a recent meeting of the chairs of IUCN commissions with the President and the Director General of IUCN and with principal IUCN secretariat staff has produced an initiative to achieve greater harmony in the workings of the World Conservation Union. Within the Species Survival Commission considerable progress has been made in strategic planning, and now we have underway subsidiary efforts to determine the best approaches for SSC within the IUCN in regard to data or information management, to communications, and to resourcing on the financial side. These are complex matters for a volunteer network to tackle, but I feel that the effort will be gratifying for SSC members and for conservation.

To conclude this homily and exhortation, I draw attention to an area where the professional conservation community desperately needs to combine data and information sources if it is to serve humanity and nature. The area is the future, which has had various scenarios painted by economists, sociologists, political scientists, and so-called "futurists." Although for many years conservation-minded authors and organizations have sketched generally disturbing future environmental scenarios, there are many matters that warrant much more scrutiny and analysis and discussion, especially at the broad interfaces between people's activities and the environment. Examples include the effects of global trade agreements on wildlife and environmental management; the effects of global trade and travel in promoting the spread of invasive species; the potential of host-jumping by viruses as a result of the continuing fragmentation of their natural host populations; the need for bioregional management, and in turn, the need for ecological knowledge applicable at the biome level; similarly, the need for the management of living natural resources to be based on modern population biology if sustainable use is to be achieved. We in the SSC can contribute in addressing these challenges in many ways, from local examples of how to manage species and their environments for the long term, to assembling pertinent information from our diverse membership to affect regional and global policy changes and developments. In all of these activities we must strive to communicate more fully and effectively than we have ever done in the past, and thereby maximize our contribution to conservation.



George B. Rabb

SSC Office Report



Review of 1994 SSC Activities

The last SSC Office Report, in *Species* 21-22, was written by my colleague Tim Sullivan, and provided a review of the SSC Meeting and the IUCN General Assembly in Buenos Aires in January 1994. As many SSC members will know, Tim's responsibilities have changed during 1994 as he has taken up the position of Director of Conservation Biology at the Chicago Zoological Society. I would like to take this opportunity to record my own thanks for all that Tim has done on behalf of SSC over the last four years. All of us who have worked with Tim can testify to his clear analytical mind and strategic thinking, to his ability to resolve conflicts and to find solutions to seemingly impossible problems, to his friendly character and excellent sense of humor. We miss you, Tim, as part of the SSC staff team, but the good news is that Tim is still able to devote some time to SSC issues, and is helping out in particular on policy issues.

Tim's replacement as Assistant to the SSC Chair is Elizabeth McCance, who joined the team in November 1994. Welcome Elizabeth! Otherwise, the SSC staff team (not including

the staff working with individual specialist groups) remained very stable during 1994. At the end of the 1994 it was as follows:

- *At IUCN Headquarters, Gland, Switzerland.* Simon Stuart (Head of SSC Program), Mariano Gimenez Dixon (Animals Officer), Wendy Strahm (Plants Officer), Linette Humphrey (Liaison Officer), Doreen Zivkovic (Membership Coordinator), Gabriela Allen (Secretary), Clotilde Mack (Secretary)
- *At the IUCN-UK Office, Cambridge, U.K.* Amie Bräutigam (Trade Officer), Tamsin Humphreys (Administrative Assistant), Frank Lambert (Indochina Project Coordinator)
- *At the SSC Chair's Office, Chicago, U.S.A.* Susan Tressler (Financial Development Officer), Elizabeth McCance (Assistant to the SSC Chair)
- *At the IUCN South America Office, Quito, Ecuador.* Bernardo Ortiz von Halle (SSC-CNPPA Officer)

In this report, I am providing an overview of SSC's activities during 1994 from the perspective of the staff. I apologize in advance that many important activities carried out by SSC Specialist Groups are simply overlooked. There is too much being done within the SSC to squeeze into a report of a few pages. Nevertheless, I think this report will be useful in informing you of some of the more important highlights.

SSC Strategic Plan

Perhaps the most important achievement during 1994 was the finalization of the SSC strategic plan. Most of the basic conceptual work of the strategic plan was carried out during 1993, and early in 1994 a small group started to pull this together into a logical framework.

Copies of the strategic plan can be obtained from the SSC Office in Gland, Switzerland, and a popular version is presented in this issue

on page 12. Several immediate priorities arise for the SSC from the strategic plan, all of which are addressed in more detail later in this report. These are:

- *Basic Support to the SSC.* The SSC's ability to implement its mission and contribute to the mission of IUCN depends upon the maintenance and enhancement of basic support to the SSC and its 100+ Specialist Groups. This includes managing the membership, organizing meetings, developing Specialist Group work plans, identifying new talent, producing and distributing *Species*, developing Action Plans, and promoting their implementation, communications, and fundraising.
- *National Biodiversity Conservation Groups.* A very high priority is to orient the SSC network to address national issues. It is envisaged that this will be done as part of a broader biodiversity focus, including CNPPA and other elements of IUCN. Such national groups will need to be supported by the IUCN regional and country offices, but in close liaison with headquarters Commission focal points.
- *Sustainable Use Initiative (SUI).* The SUI is a broadly-based cross-cutting initiative that relates to all sectors and regions of IUCN. The SSC is taking a leadership position in the SUI through the Specialist Group on the Sustainable Use of Wild Species. A major contribution that the SSC can make to the SUI is in monitoring the impacts of use on species (SSC already does this for species used in international trade). The Specialist Group will in fact consist of a series of regional networks, that will feed regional concerns and perceptions into the global network, thereby informing overall IUCN policy.
- *Data Management System.* The SSC collects a massive amount of information as part of its regular work. At the same time, IUCN members are constantly requesting information on the status of species and ecosystems. Unfortunately, the SSC's information is not stored or managed in a consistent way, and so it is almost impossible to deliver the information to users in

an integrated way. It is therefore a very high priority to establish a Data Management System during 1995, that would include other parts of IUCN and would link with partner organizations.

- *Support to International Conventions.* The SSC plays a major role in advising certain international Conventions, notably CITES and the International Whaling Commission. An increasing emphasis is being given to new Agreements being developed under the Bonn Convention (Migratory Species). Another likely high priority is the Subsidiary Body on Scientific, Technical, and Technological Advice (SBSTTA) of the Convention on Biological Diversity.
- *IUCN Red Lists.* In November 1994, IUCN Council approved the new categories of threat for the IUCN *Red List*. As a result, the IUCN *Red Lists* for both animals and plants will need to be redeveloped, using the new system. In addition, work will be needed to develop guidelines on the application of the new categories at the national level.

Network Building

One of the tasks of the staff following each General Assembly is managing the reconstitution of the SSC membership. In 1994, this got off to a late start, because the reconstitution unfortunately coincided with the development of a new and more sophisticated membership database. Nevertheless, by the end of the year, we had largely caught up, and 75% of the Specialist Groups had appointed the memberships for the new IUCN triennium. All this information is now being entered into the database. It is becoming clear that the SSC has grown yet again, perhaps to 6,000 members; we'll try to provide accurate statistics in the next issue.

An important emphasis during 1994, which will continue through the whole triennium, is the strengthening of the plant network. Five new groups were formed during 1994: Medicinal Plants; Indian Ocean Island Plants; Mediterranean Island Plants; Temperate Trees; and European Plants. Several more are in the process of formation. Existing plant specialist

groups are becoming more active, with seven of them now working on Action Plans. The Plant Conservation Task Force has become the driving force of the plant side of SSC, assisted by Wendy Strahm, and in recognition of this, it has been raised in profile to become a sub-committee of the SSC Steering Committee. The first issue of a new SSC newsletter, *Plant Conservation News*, was issued in 1994.

Sixty-two meetings were held under the aegis of the SSC and its Specialist Groups during 1994. Several of these were PHVA (Population and Habitat Viability Assessment) and CAMP (Conservation Assessment and Management Planning) workshops, run by the Conservation Breeding Specialist Group (CBSG) in association with the relevant tax-based specialist groups. SSC Specialist Groups produced a total of 41 newsletters during 1994, under 24 different titles.

Draft Guidelines for the establishment of SSC National Biodiversity Conservation Groups (NBCGs) were accepted in principle by the SSC Steering Committee in May 1994. These Groups will be established in collaboration with IUCN's Commission on National Parks and Protected Areas (CNPPA) and the IUCN Biodiversity Program. The SSC/CNPPA Officer based in the IUCN Quito Office, Bernardo Ortiz von Halle, began preliminary, exploratory talks with Commission members and other potential group members in Ecuador, Peru, Venezuela, Bolivia, Brazil and Colombia. Useful feedback from these initial contacts is guiding future strategy and action on the establishment of NBCGs. Agreement has been reached with the Ecuadorian Government to coordinate activities towards the implementation of the National Biodiversity Study and its follow-up strategy. Similar exploratory work has been undertaken in East African countries by Steven Njuguna, the Biodiversity Program Officer in the IUCN Nairobi Office.

As the size, activity, and scope of SSC expand, it has become increasingly clear that the staffing levels in support of the Commission are totally inadequate. In order to address this problem, a staffing strategy was prepared, and approved at the November meeting of the SSC Steering Committee. This strategy outlines a program for staff expansion. The level of expansion needed is such that IUCN cannot

shoulder all of the increase, and so other options are being considered. One option is that more IUCN member organizations that benefit from the work of the SSC might be encouraged to second staff to support the work of the Commission. More on this in subsequent issues of *Species*.

High Profile Species Issues

SSC continues to play a critical role on some of the high-profile species issues of global concern. The African Elephant and African Rhino Specialist Groups both met in Mombasa, Kenya, in May-June 1994. Topics covered included human-elephant conflicts, illegal trade and hunting, country status reports, a cost-benefit analysis of different rhino conservation options, and the updating of the African Rhino Action Plan. The African Elephant Specialist Group produced two major reports. The first, entitled *Four Years After the CITES Ban: Illegal Hunting of Elephants, Ivory Trade, and Stockpiles* was based on fieldwork carried out between January and June in nine African countries. The report shows a number of interesting things: that conservation budgets in most African countries have plummeted since the ban was introduced at the beginning of 1990; that there is some evidence of increased poaching since 1992; and that the incidence of human-elephant conflicts appears to be on the increase. The second report was an update of the African Elephant Database, and included the latest status information on the species on a country-by-country basis. The African Rhino Specialist Group (AfRSG) secured the funds to establish a small Secretariat, and in September 1994, Richard Emslie assumed his position as AfRSG Scientific Officer. The AfRSG was also requested by the CITES Standing Committee to prepare a draft resolution on rhino conservation. The draft was prepared at the May meeting, and was finally adopted at the CITES Conference in November. The resolution stresses the importance of developing innovative approaches to rhino conservation.

In Asia, the two equivalent Specialist Groups have also been active. The Asian Elephant Specialist Group secured an important grant from the MacArthur Foundation, which has

enabled it to start a high priority project in Myanmar in collaboration with the Forest Department. And the Asian Rhino Specialist Group collaborated very closely with the Indonesian and Malaysian governments to secure an emergency GEF grant for Sumatran and Javan rhino conservation. In October, there was a meeting between representatives of all four of the SSC elephant and rhino specialist groups and the UNEP Elephant and Rhinoceros Conservation Facility. This meeting resulted in an agreement that the SSC specialist groups would act as the official technical advisors to the Facility, especially on conservation priorities, and the Facility would focus on securing significant new financial resources for elephant and rhino conservation in both Africa and Asia.

The Marine Turtle Specialist Group was able to establish its secretariat in early 1994 when Marydele Donnelly took up her position as MTSG Executive Officer. A strategic planning workshop for the group was held in Mexico in July, as a result of which a draft global marine turtle conservation strategy has been drafted. A newsletter of the group has been started, and a number of priority activities have been identified. The Cetacean Specialist Group produced the third edition of its Action Plan in 1994. This new Action Plan is significant in that it reviews progress on the implementation of the previous edition, and it is encouraging to see good progress on well over half the projects recommended. Nevertheless, severe conservation problems are still faced by a number of river dolphin and other small cetacean species.

The Cat Specialist Group gave priority to the tiger issue during 1994. The CSG was instrumental in catalyzing the meeting in Delhi in March which led to the formation of the intergovernmental Global Tiger Forum (GTF). The CSG will be the scientific and technical advisor to the GTF. The Cat Action Plan was all but completed by the end of 1994. The Crocodile Specialist Group held its global meeting in Thailand in May, and proceedings have been produced in two volumes. Much of the focus of the group during 1994 was on the crocodilian proposals that were submitted to the CITES conference. The Crocodile Spe-

cialist Group worked with the governments concerned (in particular Ecuador, Indonesia, and Tanzania) to improve the proposals, with a view to ensuring the trade in crocodilian products is conducted at sustainable levels.

SSC Thematic Programs

The Conservation Breeding Specialist Group (CBSG) maintained its impressive level of activity during 1994. In addition to conducting eight PHVA workshops and eight CAMP workshops, CBSG put much effort into developing Global Captive Conservation Recommendations for several groups of species, and also helped Thailand to develop a national zoo masterplan with conservation goals. Work on animal genetic resource banking expanded during 1994, with an emphasis on drawing up guidelines for selecting individual animals for banking. To back up the PHVA workshops, a new version of the computer program VORTEX was developed, together with a new users' manual. A significant development was the first ever PHVA Facilitator's Training Workshop, at which 31 participants were trained. We welcome Phil Miller who joined the CBSG secretariat in October, with specific responsibilities for PHVA workshops.

As a result of successful grant applications to the Geraldine R. Dodge Foundation, both the Veterinary and the Reintroduction Specialist Groups were able to expand their operations. The RSG is expanding its small secretariat in Nairobi. Unfortunately, we had to say goodbye to Minoo Rahbar, who left the RSG secretariat at the end of 1994, but we welcome Annabel Fairclough as her replacement. The new Invasive Species Specialist Group really got going on its activities during 1994. A seed grant was provided from the Peter Scott IUCN/SSC Action Plan Fund, and a database on invasive species has been started.

SSC continued its work to examine the possible effects of global factors on species through the Task Force on Declining Amphibian Populations (DAPTF). Two major DAPTF groups were established during 1994, one on climatic and atmospheric change, and one on chemical contaminants. A fundraising committee was also established.

Action Planning

Two Action Plans were published during 1994: the *Red Panda, Olingos, Coatis, Raccoons, and their Relatives*, produced by the Procyonid Subgroup of the Mustelid, Viverrid and Procyonid Specialist Group; and the third edition of *Whales, Dolphins and Porpoises*, produced by the Cetacean Specialist Group. By the end of the year, the Wild Cat, Megapode, and Eurasian Insectivore and Tree Shrew Action Plans were in press. Progress was made on preparing the following Action Plans:

Mammals: African Rhinos (2nd edition); Antelopes (Part 4: North Africa and Asia); Asian Rhinos (2nd edition); Asian Wild Cattle; Bears; Bison; Wild Sheep and Goats; Deer; Hyenas; Insectivorous Bats; New World Marsupials; African Primates (2nd edition); Asian Primates (2nd edition); Neotropical Primates; Rodents (Regional Action Plans: North America; Australasia; Western Asia; Europe; Indian Subcontinent; and Africa); Dugong; Manatees; Tapirs.

Birds: Cranes; Herons; Storks, Ibises, and Spoonbills; and Waterfowl.

Reptiles and Amphibians: European Reptiles and Amphibians; Indian Subcontinent Reptiles and Amphibians; Marine Turtles.

Fish: Coral Reef Fish; Freshwater Fish; Sharks.

Invertebrates: Milkweed Butterflies; Freshwater and Terrestrial Molluscs; Dragonflies and Damselflies.

Plants: Cacti and Succulents; Bryophytes; China Plants; Orchids; Pteridophytes; Palms; Southern South American Plants.

SSC Indochina Program

Thanks to major financial and technical support from the National Wildlife Federation (NWF) and the World Wide Fund for Nature (WWF), and to collaboration with a number of other organizations, the SSC was able to launch a program for endangered species in Indochina (in Cambodia and Vietnam). A number of

discrete projects were carried out during 1994. An aerial survey for kouprey was conducted in Cambodia in March, which, although it recorded several important species of large mammals, unfortunately failed to record any kouprey. A report was published, which produced recommendations on how to follow-up.

A ground and aerial survey was carried out around the Tonle Sap (Great Lake) in Cambodia for endangered large waterbird species. Three important colonies were identified, and some flocks of greater adjutant storks, suggesting the presence of a reasonable population. A report is being prepared, and follow-up work is expected during 1995. In Vietnam, a survey for endemic pheasant species was carried out in June-July, and for the first time an area with a good population of the endangered Vietnamese pheasant was located. In addition, at another site, a population of the sooty babbler was discovered (first record of this species for 70 years), and also the first record of the Hatin leaf monkey in the wild. Attempts to locate the endangered imperial pheasant were not successful. A report was published and distributed.

A survey was carried out in Vietnam to evaluate the sustainability of trade in tortoise and freshwater turtle species, looking at trade routes, and species in trade, in sites throughout the country. Many tortoises and turtles are imported into Vietnam from Cambodia and Laos, and live specimens are exported to China for medicinal use. A report is being completed, which will detail management options. Also in Vietnam, a management feasibility study was completed for the endangered Tonkin snub-nosed monkey. This includes a proposal for the establishment of the Na Hang Nature Reserve. This would protect the main surviving population of what is possibly the world's rarest primate species. A report was published and distributed.

Finally, a survey for the newly-discovered and much-publicized Vu Quang ox was conducted, also in Vietnam, and a report is awaited. The major discovery of this survey was yet another new and highly distinctive species, the giant muntjac.

Data Management

One of the objectives in the SSC Strategic Plan is *To develop an effective and responsive global information system for the conservation of species*. To act on this objective, Andrew Smith, chair of the Lagomorph Specialist Group, has initiated a process leading to the development of a system that will manage the information contained within the SSC network. Andrew reports on this initiative on pages 18-20.

Policy Development

The most significant achievement in this area during 1994 was the final approval of the new IUCN *Red List Categories* by IUCN Council in November. This represents the culmination of five years hard work by many SSC members. In particular, thanks are due to Georgina Mace and her colleagues who devoted so much time to develop a really good system. Many SSC members commented on the final draft, and all comments were taken into consideration by the working group. The categories were tested against a huge variety of species across the taxonomic spectrum. We are grateful to everyone for their hard work. Probably many SSC members are now relieved that this long development phase is over, and are looking forward to putting the new system into practice.

SSC's *Reintroduction Guidelines* were all but completed during 1994. The Reintroduction Specialist Group devoted much time to them during the year. The guidelines were approved in principle by the SSC Steering Committee in May, and were then sent to other Commissions for comment. We expect the final version to be approved in 1995. The Reintroduction Specialist Group has also been busy working on *Guidelines for the Disposition of Confiscated Live Animals*. A second draft was prepared and provided to CITES for development of CITES guidelines on the same subject. We expect to see completed IUCN guidelines during 1995.

SSC's other significant policy work during 1994 relates to the CITES Conference.

CITES Conference

SSC had a major involvement in the Ninth Meeting of the Conference of the Parties to CITES. An IUCN delegation of almost 30 people, including SSC members, headquarters staff and regional office staff, was present for all or part of the time. Overall, despite certain disappointments and frustrations, this was the best CITES Conference in many years. SSC's overall objective in supporting CITES is to provide information and advice to help ensure that any trade is ecologically sustainable, and where possible, beneficial to conservation. A full description of the Ninth CITES Conference may be found in the *Features* section on page 34.

Other Conventions

SSC continued to provide policy advice to the International Whaling Commission (IWC) to ensure that any use of whales is sustainable. As in previous years, Justin Cooke very ably headed the IUCN team at the IWC Scientific Committee and 46th Annual Meeting of the IWC in Puerto Vallarta, Mexico in May. Earlier, IUCN was represented at the special IWC meeting on the proposed Southern Ocean Sanctuary, held in Norfolk Island (Australia) in February. An IUCN Statement was presented to the IWC meeting, which attached resolutions on whaling and on the proposed Southern Ocean sanctuary, which were adopted at the IUCN General Assembly in Buenos Aires in January. Resolution 19.63 reaffirms IUCN's views on the maintenance of the whaling moratorium. Resolution 19.64 calls IWC member states to support the proposed circumpolar whale sanctuary in the Southern Ocean. Also IUCN urged IWC members to work on effective conservation measures for all cetaceans, including small cetaceans (dolphins and porpoises). The major decisions of the 46th IWC meeting were the adoption of the Southern Ocean Sanctuary and the partial adoption of the Revised Management Procedure (RMP).

SSC participated in the Conference of the Parties to the Convention on the Conservation of Migratory Species (Bonn Convention) in Nairobi in June 1994. Steven Njuguna in the IUCN East African Regional Office organized

a special scientific session. The IUCN delegation at the Conference helped to push ahead development of agreements, especially on African/Eurasian waterfowl, and on the houbara bustard. During 1994, SSC took the lead on some initial steps for a possible Houbara Bustard Agreement under the Bonn Convention. Discussions were held with representatives of various range states and the Bonn Convention Secretariat to push ahead this initiative. To provide technical assistance, SSC established a Houbara Bustard Working Group. SSC looks set to take a higher profile in the work of the Bonn Convention in the future.

SSC members provided advice to Bonn Convention Agreement on the Conservation of Small Cetaceans of the Baltic and North Seas (ASCOBANS), the first meeting of which was held in Stockholm, Sweden, in September 1994. SSC members also provided advice on the draft Bonn Convention Agreement on the Conservation of Small Cetaceans in the Mediterranean and Baltic Seas (ASCOMABS).

SSC provided IUCN representation at the meeting of technical experts under the Convention on Biological Diversity in April 1994 in Mexico, and at the meeting of the Intergovernmental Committee on the Convention on Biological Diversity (ICCBD) in June 1994 in Nairobi. SSC will contribute its expertise on biological diversity at the species level to the Subsidiary Body on Scientific, Technical and Technological Advice (SBSTTA) of the Convention. The SBSTTA was formally established by the Conference of the Parties to the Biodiversity Convention in December. SSC will consult with the Convention on the type of data it would require from the SSC Data Management System (in particular for the Clearing House Mechanism), and explore other ways in which support can be offered to the Convention at the national level through the new National Biodiversity Conservation Groups (jointly with CNPPA).

Sustainable Use Initiative

During 1994, IUCN and SSC undertook a thorough review and evaluation of work carried out on sustainable use. This culminated in June 1994 in a meeting of a special expert task force, appointed by IUCN Director General

David McDowell and SSC Chair George Rabb. The task force concluded that IUCN needed a unified approach to sustainable use, and recommended that the programs of the SSC Specialist Group on Sustainable Use of Wild Species and the Secretariat-based IUCN Program on Sustainable Use of Wildlife be combined. This was done, and a unified Sustainable Use Initiative (SUI) was formed, under the guidance of an Advisory Group chaired by John Robinson. Marshall Murphree was appointed chair of the Specialist Group, which will be run mainly in regional sections, for the most part supported by IUCN regional and country offices. The SUI has two goals:

- to distinguish uses that are ecologically and socially beneficial from uses that are ecological and socially harmful.
- to assist IUCN members and others to optimize the benefits of uses of wild species to both ecosystems and people.

The SUI is conceived as a truly cross-sectoral initiative, involving experts from the ecological sciences, social sciences, as well as economists, lawyers and philosophers. The regional networks in the Sustainable Use Specialist Group will address the two SUI goals by reviewing sustainable use, within their regions, looking at: ecological factors; socio-economic factors; cultural/philosophical factors; and institutional factors. The Specialist Group will then assemble the regional lessons to form a global synthesis of understanding on sustainable use.

The SUI will clearly become a major focus of the SSC in the coming years, and Specialist Groups will have the opportunity to be major contributors, along with most other elements of IUCN.

Communications, Development, and Fundraising

The SSC strategic plan clearly identifies both internal and external communications as a major area of current weakness. The Steering Committee therefore gave priority to drawing up a communications strategy, as a follow-up

to the strategic plan. Linette Humphrey has been taking the lead in this, working with the IUCN Communications Division. As an initial step in formulating the strategy, the particular constituents most closely associated with SSC's goals and objectives were identified. For each audience, the response sought from them was identified, as well as benefits that would accrue to the target audience in responding to SSC. Messages designed to elicit desired responses were drafted. The best media and tools to deliver SSC's messages were identified. Possible constraints on audience response were investigated, and ways to overcome them explored. By the end of 1994, four of the 11 strategic objectives (taken from the strategic plan) have been addressed in the context of this communications strategy.

The SSC strategic objectives not yet tackled in formulating the SSC communications strategy will be analyzed so that the strategy can be completed during 1995. A plan to implement the priority actions identified by the strategy will be drawn up, and those that can be implemented within existing resources will be initiated. Resources needed to implement the remainder will be sought.

Development and fundraising continue to be overseen by Susan Tressler in the Chicago Office, working closely with the SSC Special Support Council. The Council now consists of 10 individuals from most parts of the world, with connections to a wide variety of funding sources. SSC employed a wide variety of funding strategies during 1994, including marketing agreements with the commercial sector, securing grants from private foundations, and working on projects with government agencies.

Major Publications

In addition to the Action Plans, SSC produced some important and high profile publications during 1994, while work continued on others.

Centres of Plant Diversity. This publication, the major product of the former IUCN Plants Program over the past eight years, produced in collaboration with WWF, was finally put to bed in 1994. It took much longer than expected, and with a huge network of volunteer

contributors worldwide, the work was divided up into three volumes. The first volume (Europe, Africa, Southwest Asia, and the Middle East) was published in 1994 and the second volume (Asia, Australasia, and the Pacific) went to press at the end of year. The third volume (the Americas), produced in collaboration with the Smithsonian Institution, is in the final draft and shall go to press in early 1995. These three volumes will be distributed to contributors, botanists, conservationists, decision-makers, and IUCN and WWF offices in the appropriate regions. The goal is to strengthen the plant conservation network, and provide guidance on areas of special importance for plants. Specialist Groups will be encouraged to promote conservation in the areas covered in the Centres of Plant Diversity, and areas deemed of highest importance, but which are not covered by a plant Specialist Group, will receive special attention in building up the SSC plant conservation network.

Manual for Collecting Plant Genetic Resources. This manual went to press at the end of 1994 and will be a major resource book for collecting plant genetic resources in an appropriate manner, ensuring that as much genetic variation is conserved as possible. It covers legal and ownership issues as well as the biological aspects of collecting plant genetic resources, and was a joint project with the International Plant Genetic Resources Institute (IPGRI), as well as UNEP and FAO. The next step is to use this manual to strengthen links between IUCN and IPGRI, and determine how we can collaborate to conserve the wild relatives of useful plants, implementing practices outlined in the Manual.

Principles and Practices of Plant Conservation. This book was published at the end of 1994 and provides the nuts and bolts of plant conservation using many case studies to illustrate good plant conservation practices. Written by a member of the SSC Plant Conservation Subcommittee and SSC Steering Committee, David Given, this book has included many years of research and experience. In 1995 this book will be distributed to as many hands-on

plant conservationists as possible to encourage increased work in plant conservation and provide lessons learned.

Encyclopedia of Endangered Species. The *Encyclopedia* was published, at last, at the end of 1994. This was a joint project with Gale Research Inc., and includes over 700 data sheets on threatened plants and animals, everyone of them reviewed and brought up-to-date by SSC members. This book is aimed in particular at university undergraduates and high-school students, and will bring SSC data to this unreachd audience for the first time.

IUCN Red List of Threatened Plants. Work continued on the first ever plants *Red List*, with basic compilation being undertaken by the World Conservation Monitoring Centre, and review is being undertaken by the SSC Specialist Groups. Agreement has been reached with the Nature Conservancy to include their information from North America, and similar linkages are expected with institutions in Australia, South Africa and Europe. Publication of this *Red List*, which will be the last publication using the old IUCN category system, is expected during 1995.

A New Look to IUCN

I am finishing this report where perhaps I should have begun. In April, IUCN said goodbye to Dr. (now Sir) Martin Holdgate, its Director General for the previous six years. It was a privilege for us, as staff, to have worked with this man, who built the organization into a much stronger and effective force than it was when he took up office. However, we have had

the great fortune to have gained another dynamic leader in his successor, David McDowell, who arrived in April.

David has been responding to the new priorities set by the IUCN membership at the General Assembly in Buenos Aires, and has embarked on an ambitious, and quite radical restructuring of the organization. Essentially, more resources are being devoted to the regional and country offices, and to the Commissions, and there is a consequential reduction in the size of the headquarters secretariat. The end result will be a more flexible, decentralized Union, giving much higher priority to serving the needs of the membership. The Commissions, including SSC, are likely to assume a more prominent role as IUCN gives higher priority to networking and teamwork.

For the SSC, this represents both an opportunity and a challenge. The opportunity is that the values and working style that SSC has always represented are increasingly been seen as the *modus operandi* for IUCN as a whole. The challenge is that we shall be given the opportunity to address the needs that IUCN member organizations and governments have in the area of species conservation in a greater way than ever before. SSC needs to position itself to ensure that it does indeed deliver on these expectations, and thereby becomes a corner stone in worldwide efforts to conserve biological diversity.

Simon N. Stuart, Head
Species Survival Program

A Strategic Plan for the IUCN Species Survival Commission

Susan Tressler

Foreword by George Rabb

Foreword

In 1992, the Steering Committee of the Species Survival Commission decided that in view of the rapidly changing context in which SSC works and the increasingly severe threats to species and their habitats worldwide, a strategic plan should be developed to ensure that the work of the SSC is focused and targeted toward the highest species conservation priorities. Because resources will always be limited, it is essential that the SSC establish priorities in relation to the overall program and activities of IUCN and other conservation organizations.

At the beginning of 1993 we surveyed SSC Specialist Group Chairs, IUCN member organizations and IUCN staff about SSC activities and their value. The results were used in subsequent meetings of the Steering Committee that explored the SSC's strengths and weaknesses in the context of perceived species conservation needs throughout the global conservation community, and identified the most appropriate conservation functions for the SSC to develop, maintain and strengthen.

A summary of the resulting Strategic Plan follows. It sets the stage for increasing the SSC's impact on the conservation of biodiversity and defines new ways of doing our business to ensure that impact is relevant, timely and cost-effective. The Plan suggests an ambitious course, but one we must take if we are to achieve our important conservation objectives.

Implementing the Strategic Plan presents a variety of challenges. Perhaps the most daunting is the need to harmonize our knowledge of species (status and threats), with perceived and real values (intrinsic and extrinsic), and with strategies and resources (financial, human and institutional) available to conserve them.

Values are the attributes that will drive this process and set the framework for prioritization

of conservation actions. However, the extrinsic values of species—defined primarily by their relationship to human needs—often dictate priorities in the allocation of precious and limited resources. We must endeavor to balance these extrinsic values with the intrinsic values resulting from millions of years of evolutionary and ecological processes.

Toward this end, the SSC must inform conservation debate and action. This begins with analysis and synthesis of species-based information (status and threats), thus increasing our understanding of intrinsic values. To ensure action we must follow on by strengthening the SSC network and developing links to legal, social, cultural and economic expertise. Herein lies the most comprehensive knowledge of the extrinsic values—the values that drive resource allocation—and the multiple strategies employable to achieve an appropriate balance between human need and nature. We close the circle by promoting appropriate actions, learning from our experience and integrating new knowledge into future endeavors.

Finally, in the process we must work toward the best possible use of finite human, political, institutional and financial resources. Every investment we make is an opportunity cost: Allocation of resources is not only a choice to implement specified conservation actions but also a choice not to implement other actions. Although various resources may not be interchangeable, the directions set in our prioritizations inevitably focus energies and attention with some exclusivity, and therefore they must be set with utmost prudence and skill.

Between now and the end of the century, the Strategic Plan will serve as a guide in making these very difficult choices. I welcome and encourage comments from the SSC membership.

*George B. Rabb, Chairman
Species Survival Commission*

A Strategic Plan for the IUCN Species Survival Commission 1994 - 2000

The Species Survival Commission's Strategic Plan was developed in the context of IUCN-The World Conservation Union, the parent organization of the SSC. IUCN's mission is to:

influence, encourage, and assist societies throughout the world to conserve the integrity and diversity of nature and to ensure that any use of natural resources is equitable and ecologically sustainable.

Within IUCN, the SSC is a fundamental element designated to address the species element of biodiversity conservation, with particular reference to the concerns of IUCN's member states, government agencies, and non-governmental organizations. Therefore:

The mission of the Species Survival Commission is to conserve biological diversity by developing and executing programs to study, save, restore, and manage wisely species and their habitats.

Conservation in a Changing World

SSC provides its service in conservation of biodiversity in the context of the continuing and accelerating loss of the diversity of life forms on this planet and the degradation and destruction of the natural environmental systems of which all species are part. The prime causes of these circumstances lie in human population growth and in the behavior of individual people and societies. Conservation action, however, has largely been in response to the immediate consequences of human behavior in habitat destruction, fragmentation, and degradation through conversion; species extinction and population diminution; pollution; and the introduction of non-native species to habitats.

From a broader perspective, conservation involves caring for the earth through fostering beneficial relationships between people and nature. Conservation requires changing people's behavior to reduce negative impacts on the environment and fellow living beings.

Thus a major trend in the conservation movement over the last 20 years has been to identify common ground between conservation concerns and economic and social development objectives. In IUCN, these issues came to a head in 1980 with the publication of the *World Conservation Strategy* (jointly with WWF and UNEP), which articulated the notion of sustainable development: improving the quality of human life while living within the carrying capacity of supporting ecosystems. The concept of sustainable development has been articulated in many ways since then, perhaps most significantly at the Earth Summit in Rio de Janeiro in 1992. The world's nations established a new inter-governmental body, the Commission on Sustainable Development, and concluded a major new treaty, the Convention on Biological Diversity.

Sustainable development is now firmly on the global political agenda. Through its broad membership, volunteer commissions, and partnerships with key international institutions and organizations, IUCN is uniquely positioned to integrate the biological, social, economic, cultural, and ethical dimensions of sustainable development into global policies to guide governments and international agencies in their decision-making. The SSC's greatest contribution to this process will emerge from its current and growing ability to provide sound baseline information about species and their habitats—their status, use and protection—needed to understand and measure ecological sustainability.

The Evolving Role of SSC

In the broadest sense, to achieve its mission the SSC must contribute to:

Understanding. SSC contributes most strongly to conservation by enhancing understanding. Its volunteers assess the status of biodiversity at the species level, determine conservation status of individual species, explore basic ecological processes, identify detrimental factors that may be operating, and devise strategies to mitigate these negative factors.

Appreciation. Appreciation means valuing. Intrinsic values of living creatures and their communities are found in their ecological roles, evolutionary histories, and biological qualities of organisms. Extrinsic values—ecosystem services, economic benefits, ethical and cultural values—are values determined by our relationship with nature; the opportunity to exploit these values in promoting sustainable relationships of people and natural resources is evident.

Commitment. In any complete conservation strategy we employ values to justify the commitment needed for conservation. Commitment implies the will to change our detrimental relations with other living things. It also means implementing the actions necessary for progressive change in the way we conduct our environmental relationships, and this means devoting resources to actions. Resources include human, financial and institutional components.

The SSC is the expert network that can bring understanding, appreciation, and commitment to bear on the survival of biological diversity. The primary mechanism for doing so is its diverse membership of individuals and institutions. The SSC serves as a broker, matching needs of clients for conservation action to the talents and capacities of conservation experts, particularly biological experts. It links conservation scientists, natural resource managers, and organizations dealing with problems at single or multispecies levels to maximize collective contributions to environmental well-being and the survival of species in nature.

In essence, the SSC can bring its collective wisdom and technical expertise to international, national, and local bodies to effect the policy and program changes most beneficial to the environment and human welfare.

Thus, the SSC's goals are to:

1. Assess the conservation status of and threats to species worldwide;
2. Identify conservation priorities and promote conservation actions for species and their habitats;
3. Develop and promote policies for the conservation of species and their habitats;
4. Enhance the ability of scientists and conservationists throughout the world to further conservation of biodiversity by linking them and providing access to an international forum;
5. Promote an understanding of the importance of the conservation of species to the well-being of people.

A Plan for Action

To achieve these goals, and to make the greatest possible contribution to the conservation of biological diversity, the SSC has identified five key areas for maintaining, expanding, and strengthening its structure, membership, and activities between now and the end of the decade:

- improve the SSC's ability to manage the vast amount of species conservation information contained within the network, and effectively use this information to the greatest good of conservation;
- organize its expertise to address national and regional concerns more effectively, and to empower local SSC expertise to support and guide the development of national plans and strategies for biodiversity conservation;
- develop a better understanding of sustainability, in particular the relationships between people, species, and the ecosystems containing them, from both ecological and socioeconomic points of view;
- increase expertise on the full range of threats to species, including habitat degradation, exploitation, climatic and atmospheric changes, chemical contaminants and pollution, and invasive species;
- develop and strengthen ties with groups from other disciplines to demonstrate the role that biological and ecological perspectives have to play in the broader goals of achieving sustainable development and conserving biological diversity.

By addressing the five key areas, the SSC will enhance its capacity to:

1. Assess the status of and threats to all groups of species determined to be a priority as rapidly as possible.

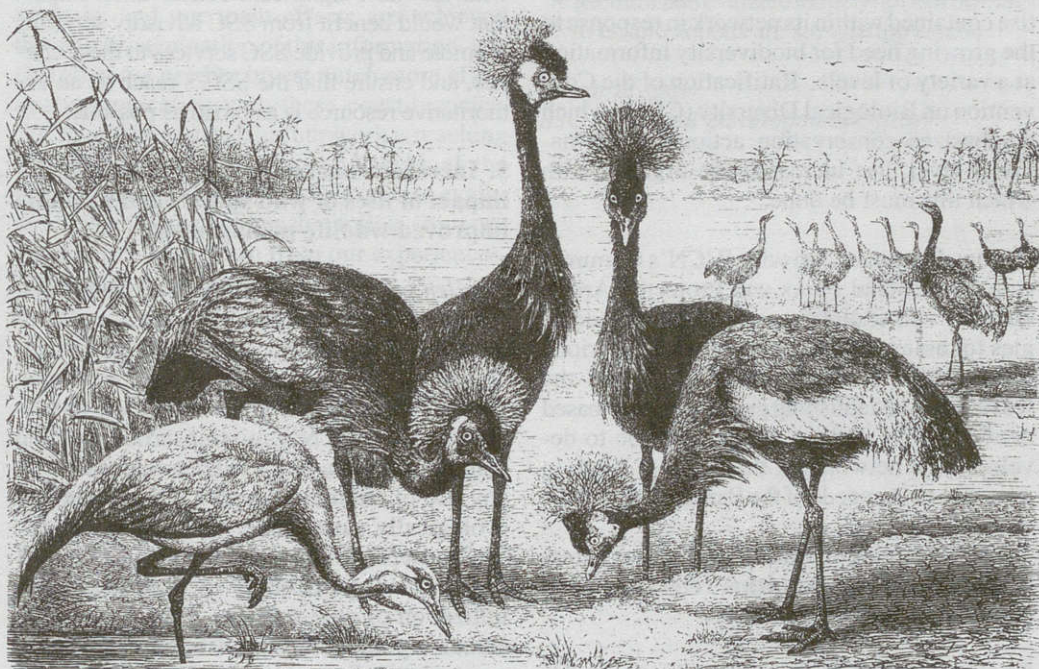
Challenge: The SSC's Action Plans and global Red Lists of Threatened Species are the primary means by which the SSC informs the conservation community about the status of and threats to species. However, significant gaps remain in the groups of species that have been assessed. The SSC must not only strengthen and accelerate the assessment process to fill these gaps, but must also determine, through a transparent process, which species are of highest priority for assessment.

Action: In 1994, IUCN adopted new criteria—developed by the SSC—for assigning Red List

categories of threat to animal and plant species. The SSC will develop tools for efficient application of the criteria, and ensure that these tools are accessible to all Specialist Groups and IUCN members positioned to make use of them. By the end of the decade, all animal and plant species included on the IUCN Red Lists will be reassessed against the new criteria, as well as high priority species and taxonomic groups not previously assessed. In addition, to assist IUCN state members and other governments, guidelines for assessing conservation status at the national and regional level will be developed.

2. Develop an effective and responsive global information system for the conservation of species.

Challenge: The SSC provides information in a variety of formats from multiple sources, prima-



rily along taxonomic lines. Demands for information from the conservation community are increasing, and the ways in which species conservation information must be delivered to maximize conservation impact are rapidly changing.

Action: A standardized information system will enable Specialist Groups to respond to a variety of species information needs. The system will serve as one component within a larger biodiversity conservation information system, comprised of IUCN entities and partner organizations, designed to ensure that international, national, and local actions relevant to and affecting the conservation of biodiversity are well informed.

3. Mobilize the SSC's expertise to address biodiversity conservation needs at the regional, national, and sub-national levels.

Challenge: Historically, the SSC has carried out its work along taxonomic lines. However, it must now harness the knowledge and expertise contained within its network in response to the growing need for biodiversity information at a variety of levels. Ratification of the Convention on Biological Diversity (CBD), which emphasizes conservation actions at the national level, has increased the urgency with which this must be done.

Action: In partnership with IUCN's Commission on National Parks and Protected Areas, the SSC will explore a variety of methodologies for assessing species conservation priorities at different geographic levels and the feasibility of establishing geographically-based networks. Of highest priority will be to develop these networks at the national level, in response to the needs of the Parties to the CBD.

4. Provide guidance and advice to key inter-governmental mechanisms relevant to the conservation of biodiversity.

Challenge: The SSC's traditional strength lies in its ability to bring the collective expertise of its members to bear on decisions made at the global level. This strength has been most evident in the context of the Convention on Inter-

national Trade in Endangered Species of Wild Flora and Fauna (CITES) and the International Whaling Commission (IWC), where the SSC operates as an authoritative scientific resource and assists Parties toward effective implementation of the treaties. The SSC must also establish an authoritative role with other Conventions (e.g., the Bonn (Migratory Species) Convention and Convention on Biological Diversity), and international institutions (e.g., the GEF and The World Bank) if it is to maximize its potential conservation impact.

Action: The SSC will continually evaluate its role with a broad range of conventions (international and regional) as well as other international institutions. It must ensure that the scientific and technical knowledge within the network is brought to bear on the decisions made by those entities with the highest potential impact (both positive and negative) on the conservation of biodiversity. The SSC will therefore identify the Conventions and institutions with the most significant conservation impact that would benefit from SSC advisory services, promote and provide SSC services to these entities, and ensure that the SSC's reach as an authoritative resource is as broad as possible.

5. Increase understanding of the ecological impact of uses of wild species and promote improved wildlife management.

Challenge: To move toward a sustainable relationship with nature, we must come to understand ecological constraints to sustainability as well as the social and economic factors that detract from or contribute to sustainability. IUCN's mission articulates the commitment to assist societies to ensure that any use of natural resources is equitable and ecologically sustainable. Within IUCN, the SSC must play a major role in the fulfillment of this mission, particularly as it relates to the utilization of wild species. This will require enhancing the ability to distinguish uses that are ecologically and socially beneficial from uses that are harmful. SSC must also increase its ability to assist IUCN members and others to optimize the benefits of uses of wild species to both ecosystems and people.

Action: The SSC will increase understanding of ecologically and socially beneficial uses by increasing its expertise in the social, cultural and economic disciplines surrounding wild species exploitation, and linking these factors to biological and ecological dimensions. Recognizing the differing regional issues and needs related to wild species utilization, the network will be strengthened in this regard primarily along regional lines. Uses related to commercial trade and subsistence will be explored. The SSC will serve as a global focal point for gathering and synthesizing this knowledge, and will develop communications mechanisms to ensure it is used in the widest possible context.

Toward Implementation

The SSC is challenged organizationally to develop its network's capacities for information management, communications, development of financial and human resources, and coordination of activities. When we consider that SSC's main products are information and analysis, and our main effects are achieved through dissemination of this information, it is clear that we need to invest much more effort in communication with these constituencies. We should be assured that our work is reaching the most relevant targeted audiences of the various constituencies. And we need to evaluate constantly the actions that follow from our communications, learn from our experiences, and know when to adjust course.

To ensure the capacity to implement the Strategic Plan the SSC will:

- Expand the network across disciplines and strengthen its taxonomic expertise to serve more effectively the international conservation community in its effort to conserve biodiversity.
- Build capacity of the human resources within the network to address conservation challenges and issues throughout the world.
- Improve the SSC's capacity to communicate priority recommendations and policies to promote the implementation of actions needed for the survival of species.
- Develop sufficient management capacity within the SSC to adequately serve the volunteer network.
- Secure financial resources and stability necessary to maximize the SSC's impact on the conservation of biodiversity.
- Monitor and evaluate the activities of the SSC to ensure actions are stimulating results.

Susan Tressler

SSC Financial Development Officer

The Development of a Species Conservation Data Management System—A Major New Initiative for the SSC

Andrew T. Smith
Foreword by Simon Stuart

Foreword

One of the highlights of 1994 from the perspective of the staff at IUCN headquarters was having Andrew Smith, Chair of the Lagomorph Specialist Group, as part of the team from January to August. Andrew was on sabbatical from Arizona State University, and helped out in innumerable ways, ranging from membership reconstitution, developing a proposal for an IUCN intern scheme, to developing proposals for SSC to become more effective in the Central Asian Republics.

However, Andrew's major contribution was undoubtedly the launching of an initiative to establish an SSC data management system (DMS). The SSC strategic plan identified data management as a major weakness of the SSC. It is clear that many elements of the SSC, in particular the Specialist Groups, are continuously collecting information on the status and conservation needs of species, and yet we are not able to deliver this information in a coherent manner to most users, except as publications. SSC has very little capacity to integrate information between the different Specialist Groups. Since the Convention on Biological Diversity entered into force, IUCN member organizations and governments have been requesting much more information of the sort that SSC routinely collects. The DMS concept envisages the development of a system whereby SSC Specialist Groups collect their information according to certain agreed standards, so each Specialist Group is speaking the same language as it were. To accomplish this ambitious program, the SSC will need to develop partnerships with several other institutions, in-

cluding those that can help manage information, and those that collect complementary types of data that need to be linked with SSC data.

*Simon Stuart, Head
Species Survival Program*

The Initial Stages

Here I report on activities that relate to the development of a species conservation data management system for the SSC. First, the "SSC Objectives in Species Conservation Data Management" (Table 1) were approved at the May 1994 SSC Steering Committee Meeting. At this time two working groups were established: the first to examine the vision, purpose, and focus of an SSC data management system, and the second to develop the technical aspects of the work. These groups have been constituted and appropriate terms of reference for their activities have been drafted. I serve as chair of both working groups to ensure a proper articulation of their activities and a smooth flow of information between them.

With regards to linking with other institutions, we are already integrating this initiative with two complementary organizations, TRAFFIC and BirdLife International. IUCN's Commission on National Parks and Protected Areas is also incorporated in our planning. Each of these three organizations is represented in the Vision Working Group.

The Vision Working Group met on 11 November 1994 in Fort Lauderdale, Florida, and there was further discussion of the data management system at the SSC Steering Committee meeting during the following two days.

Table 1. SSC Objectives in Species Conservation Data Management

Species conservation data management within the context of the SSC concerns data that originate and are managed through the SSC network specifically to serve its constituency. Thus, SSC objectives in species conservation data management fall into two broad categories: (1) the internal management of data within the SSC so that it is poised to contribute maximally to species conservation; and (2) the development of procedures to facilitate the use of species data by IUCN members, partner organizations and by third parties (conventions, organizations, implementing agencies, individuals) for conservation purposes.

Internal Mechanisms

1. To enable SSC to be the authoritative source of current expert information on the status of and threats to species on a global basis.
2. To enhance the ability of Specialist Groups to collect, store, manage, retrieve and analyze information about the taxa of concern to them.
3. To enable SSC to identify conservation priorities, make recommendations for conservation actions and develop conservation policies.
4. To enable Specialist Groups to share data effectively about their taxa within their own group and other Specialist Groups, and to facilitate a two-way flow of information between a central database and Specialist Groups.
5. To ensure that SSC is able to conduct status assessments such that IUCN Red List Categories can be assigned to species.
6. To ensure SSC is able to assess the sustainability of uses of wild species.

External Mechanisms

7. To facilitate the use of SSC information on species and their status by IUCN members, conventions, interested organizations, implementing agencies, and individuals, whether provided directly by SSC or through a cooperating data-management organization, leading to relevant analyses by managers and decision makers for setting conservation priorities and recommending conservation actions.
8. To enable SSC to provide to the international conservation community a dynamic and accessible global list of threatened species for use in national legislation and intergovernmental agreements.
9. To allow assembly of relevant information about species for specific geographic areas, thus ensuring that SSC species data are accessible for national and regional analyses.
10. To enable SSC species conservation data to be combined easily with other relevant data concerning habitats, protected areas, and socio-economic factors, to assist in determining priorities and designing management and educational programs.

Work is being finalized on a truly visionary profile for the initiative, and we are in the process of determining the appropriate spatial scale for the system.

A preliminary questionnaire concerning this data management initiative was circulated to all chairs and deputy chairs of Specialist Groups. Not surprisingly, the response was varied; but even this result is important in terms of our planning. It appears essential that a major effort must be made to build the capacity of the SSC network to contribute to this initiative. The bottom line must be: without the data, there will be no species conservation data management system.

The next stage in the development of this initiative will be a final meeting of the Vision Working Group. Tentative plans have been made to gather this group together in spring 1995 to discuss questions of output and products, scope, scale, audiences, partnerships, quality, ownership, and capacity-building. We desire to have this framework in place in time to present it to the next meeting of the SSC Steering Committee. We hope that at that time

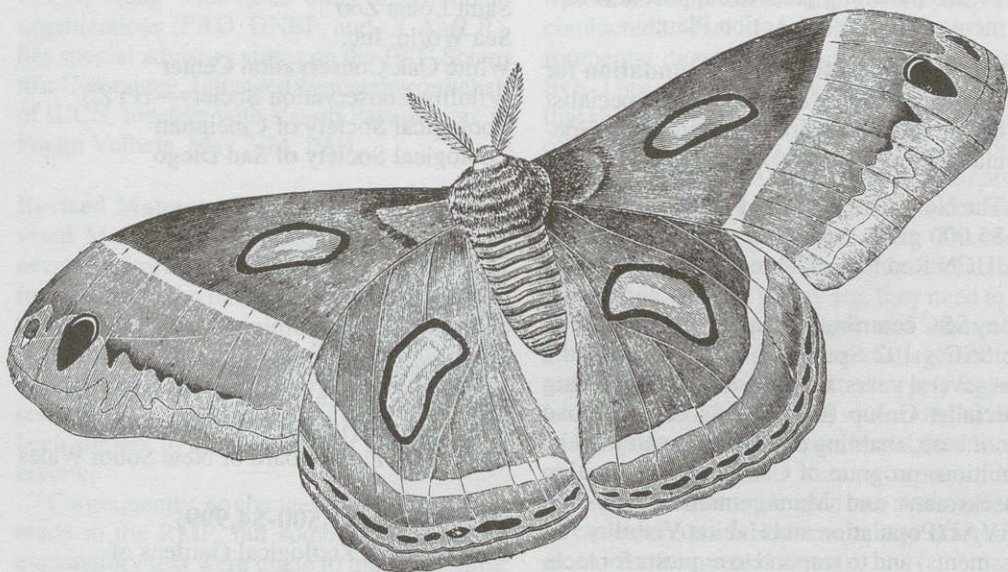
we can begin to finalize some of the specialized elements of the program's development and launch our efforts to generate support. At the SSC Steering Committee meeting, we also plan to design a work program for the Technical Working Group.

All members of the SSC network are encouraged to comment on the development of this initiative, either directly to me or through their Specialist Group chair. We will make every effort to keep all members of the SSC fully informed of our progress as we proceed with this extremely important initiative.

*Andrew T. Smith, Chair
Lagomorph Specialist Group*

Donations to the SSC

Susan Tressler



The SSC network thrives on generous financial and in-kind contributions from NGO, government, individual, and corporate donors. A few of these contributions are listed below. Our thanks, however, extend to all contributors, from the NGOs that support work of individual SSC members to foundations and government agencies that award large financial grants. In *Species* 23, we gratefully acknowledge:

- The **World Wide Fund for Nature** for its annual grant to support to SSC operations (SFr 300,000), in addition to multiple grants to Specialist Groups (SFr 15,000 to the Cat Specialist Group, SFr 35,000 to the African Elephant Specialist Group, and SFr 50,000 to the African Rhino Specialist Group);
- The **Chicago Zoological Society** for its continuing in-kind and cash support for general operations and for awarding its 1994 Presidential Awards to recognize the work

of the Reintroduction Specialist Group (\$15,000) and the Declining Amphibian Populations Task Force (\$15,000);

- The **National Wildlife Federation** for renewing its support for the SSC Conservation Communications Fund (\$25,000) and for species conservation work in Indochina (\$100,000);
- The **U.S. Department of State** (OES Special Fund), for granting \$25,000 to the Declining Amphibian Populations Task Force for its Climate Change Working Group, and \$25,000 to the Invasive Species Specialist Group to build its network and establish a database for documenting invasive problems and solutions. Two additional grants have been awarded to other IUCN programs: one to support development of an electronic conference, via the internet, on the Coral Reefs Initiative (\$22,500); the other to support a workshop on integration

of coral reef conservation with sustainable development practices on small islands (\$15,000). Several other grant requests are still pending;

- The **Zurich Orchid Foundation** for its SFr 15,000 matching grant to support development of the Orchid Action Plan;
- The **Geraldine R. Dodge Foundation** for supporting the Reintroduction Specialist Group (\$30,000) and the Veterinary Specialist Group (\$5,000);
- The **Norcross Wildlife Foundation** for its \$5,000 grant to support publication of the IUCN Red List of Threatened Plants.

Many SSC contributors support one or more of the SSC's 102 Specialist Groups. Over the past several years, the Conservation Breeding Specialist Group (CBSG) has built a broad donor base, enabling the CBSG to carry out an ambitious program of CAMPs (Conservation Assessment and Management Plans) and PHVAs (Population and Habitat Viability Assessments) and to respond to requests for technical assistance from a variety of governments and NGOs around the world. The CBSG donor pool is drawn primarily from the zoo community, but extends to others as well. Following are those institutions that have contributed \$2,500 or more to the CBSG in the past year and, as such, are members of CBSG's Institutional Conservation Council.

Conservators (\$10,000 and above)

Australasian Species Management Program
Chicago Zoological Society
Columbus Zoological Gardens
Denver Zoological Gardens
Fossil Rim Wildlife Center
Friends of Zoo Atlanta

Greater Los Angeles Zoo Association

International Union of Directors of

Zoological Gardens (IUDZG)

Metropolitan Toronto Zoo

Minnesota Zoological Garden

Omaha's Henry Doorly Zoo

Saint Louis Zoo

Sea World, Inc.

White Oak Conservation Center

Wildlife Conservation Society—NYZS

Zoological Society of Cincinnati

Zoological Society of San Diego

Guardians (\$5,000-\$9,999)

Cleveland Zoological Society

John G. Shedd Aquarium

Loro Parque

Lubee Foundation

North Carolina Zoological Park

Toledo Zoological Society

Wild Animal Habitat

Zoological Parks Board of New South Wales

Protectors (\$2,500-\$4,999)

Federation of Zoological Gardens of

Great Britain and Ireland

Japanese Association of Zoological Parks
and Aquariums

Jersey Wildlife Preservation Trust

Oklahoma City Zoo

Wilhelma Zoological Garden

Susan Tressler

SSC Financial Development Officer

Report of the 1994 Annual Meeting of the IWC Scientific Committee

IUCN, along with three other international organizations (FAO, UNEP, and CCAMLR), has special advisory status on the IWC Scientific Committee. I attended the meeting on behalf of IUCN, together with Vassili Papastravou, in Puerto Vallarta, May 2-14, 1994.

Revised Management Procedure. The Revised Management Procedure (RMP) is the new set of rules for determining catch limits for commercial whaling. Despite the fact that the final form was unanimously recommended by the Scientific Committee, the Commission did not adopt it; in particular, the United States resisted taking any action until the RMP had been subject to an independent national peer review.

Consequently, no changes of substance were made to the RMP, but some changes to the explanatory text were made to make it clearer that the RMP is consistent with the principle of monitoring as demanded by the U.S. delegation at the 1993 Commission meeting.

During the year, the RMP had been subject to an independent review by the U.S. National Marine Fisheries Service (NMFS). The review considered the process of testing the RMP to have been broadly valid, but considered that the range of tests to which it had been subjected was not exhaustive. It was pointed out that the NMFS operated management procedures for many fisheries, most of which had not been tested at all, let alone to the extent of the RMP.

The majority feeling was that there was no need for further testing of the RMP, but that the results of further simulation trials would be included in the report to better illustrate how the performance of the RMP was functionally related to two factors of especial current interest: positive bias in abundance estimates and underreporting of past catches.

Effects of Environmental Change on Cetaceans. This issue was put on the agenda in a response to a resolution passed by the Com-

mission last year. A major point of discussion was the extent to which the RMP/RMS might have to be modified to take account of environmental threats to cetaceans. Tests of the RMP conducted to date in scenarios involving environmental degradation had not been exhaustive. I presented a paper giving results of tests that showed that the conservation performance of the RMP relative to the case of no exploitation is essentially the same whatever the nature and severity of any impacts from environmental threats on cetacean populations. The message is not that the environmental threats are not serious, but that if they are, they need to be addressed in their own right and cannot be mitigated by modifying the management of exploitation. The Committee largely agreed with these conclusions and so decided to deal with the question of environmental threats as a separate matter rather than in terms of the RMS. It decided to focus on two areas: effects of contaminants on cetaceans and effects of global environmental change.

Abundance Estimation. The primary input data required for the RMP are direct estimates of abundance from surveys, and therefore it is important that these be valid.

At its 1992 meeting, the Committee had accepted a Norwegian estimate of the abundance of minke whales in the northeast Atlantic for use with the RMP. The data on which the estimate was based were not then available, and there was some discussion at the time whether it was appropriate to accept the estimate in these circumstances. The majority of the Committee had felt that the absence of the data did not matter. The data were subsequently submitted to the IWC, and this year I reanalyzed them with a view to reproducing the Norwegian estimate. Using essentially the same methods, I obtained an estimate only about half the Norwegian estimate but was unable to determine the causes of the difference because the Norwegian estimate was not fully documented. The Committee appointed a working group to resolve the discrepancy and some related matters.

Small Cetaceans. Although the Commission remains divided on its competence to manage small cetaceans, the Scientific Committee retains a special subcommittee to review their status. The subcommittee focused this year on small cetaceans in Latin American waters.

For the first time, a quantitative population estimate (118-847) was available for the vaquita (*Phocoena sinus*). The vaquita is confined to the upper Gulf of California, and incidental take in fisheries are feared to be unsustainable. In view of the dangerously low population size, the Committee recommended urgent steps to end all incidental takes. Information on abundance and incidental takes of the franciscana (*Pontoporia blainvillei*) and the tucuxi (*Sotalia fluviatilis*) were too sparse to assess their status, but because their coastal and riverine distribution renders them potentially vulnerable, the Committee strongly recommended that information be collected quickly.

Assessment of Southern Hemisphere Baleen Whales. The assessment of minke whales in the southern hemisphere was completed last year when the Committee recommended the management areas and other details for implementation of the RMP with respect to these stocks. The focus this year was on humpback whales because it is the species of large baleen whale in the southern hemisphere that is most likely to recover soonest to levels at which it would qualify for a non-zero quota under the RMP (ca. 20 years). The main topic of discussion was the question of stock structure and application of modern genetic techniques to the question of how many distinct populations there may be. The Committee also reviewed progress on the revision of catch figures for southern hemisphere baleen whales. Following the dissolution of the U.S.S.R., it had emerged that all catch data submitted to the BIWS and IWC by the U.S.S.R. were false. Some of the real catch data survive, and compilation of this is underway. The Committee received a progress report from the Russian delegation that indicated that catches of blue and humpback whales in particular had been grossly underreported.

Aboriginal Subsistence Whaling. A new assessment of the Bering Sea bowhead whale

stock resulted in a recommended annual take limit of 75 animals. An assessment of the eastern North Pacific grey whale stock resulted in an estimated sustainable yield of 400-800, but the Siberian catches from this stock seem to have ceased in 1992 for economic reasons. The Committee was unable to give any advice on the West Greenland fin whale stock because the abundance estimate was imprecise (50-600) and it wasn't known whether it was a separate population.

Scientific Whaling. Takes of whales for scientific purposes are exempt from most IWC regulations, and this category of whaling has become more prominent during the period of the moratorium. The Committee reviewed progress reports on Japanese scientific minke whaling in the Antarctic and Norwegian scientific minke whaling in the North Atlantic. The Committee reviewed a new Japanese proposal for scientific minke whale catches in the North Pacific, the stated goal of which was to obtain new data on population structure that would allow management area boundaries to be revised to enable higher catches under the RMP. While the moratorium remains in force, it is difficult to fault whaling countries for making use of the scientific whaling loophole; however, in the future, one should keep an eye open for use of the scientific loophole as a means of supplementing RMP quotas.

Other Matters. Results were presented to the meeting of genetic analyses that showed that whale meat marketed in Japan, ostensibly legally caught minke whale meat from scientific whaling, actually consisted partly of meat from protected species (fin and humpback whales). This issue relates to concerns previously expressed by IUCN that legal trade in whale products should not be used as a cover for illegal catches, and at the suggestion of other CSG members present I have included a reference to it in the draft IUCN statement.

Naturally, these findings were unwelcome in some quarters. In response, these members ensured that the research funding subcommittee blocked further funds to the scientist concerned. This kind of petty action does the committee little credit, and I hope it will not be repeated.

(Extracted from a report by Justin Cooke)

Australia Hails a Prehistoric Pine

Not the world's smallest Christmas tree, but—for those still seeking unusual Christmas presents—perhaps one of its first prehistoric pot plants. Research officers at the Mount Annan Botanic Gardens in Sydney, Australia, now have the first seedling raised from a new species of pine, thought to have been extinct for 150 million years, which was discovered in a national park 125 miles west of the city in August.

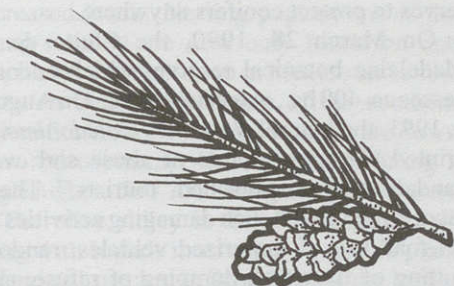
The discovery was hailed in Australia as one of the most important finds of the century, equivalent, according to Carrick Chambers, the director of the gardens, to “finding a small dinosaur still alive on earth.”

The pine was discovered by a project officer with Australia's National Parks and Wildlife Service when he abseiled into a 1800-foot deep gorge during a weekend bush walk. The full-grown version of the prehistoric pine tree was found in a secluded rain forest in the Wollemi National Park west of Sydney. According to scientists at the Royal Botanic Gardens in Sydney, the Wollemi pine is a newly discovered genus whose nearest relative died out in the Jurassic and Cretaceous eras, 195-140 million and 140-65 million years ago respectively.

The trees, about 40 meters tall and with a girth of three meters, are covered in a dense, waxy foliage, and have “a distinct nobbly bark that makes them look like they are coated with bubbly brown chocolate.”

Chris Hartcher, environment minister for New South Wales, has described the discovery as “the Australian Christmas tree.” Scientists have compared the significance of the discovery to that of the coelacanth discovered off the coast of Madagascar in 1948.

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Threats to Conifers in New Caledonia

The IUCN/SSC Conifer Specialist Group is very concerned about the destruction occurring in the small Chute de la Madeleine botanical reserve in the Plaine des Lacs on the island of New Caledonia. This Pacific island is one of the world's centers of botanical endemism and is particularly important to conifers.

Conifers are an ancient group of plants, and notwithstanding a number of very common trees, most of the ca. 600 species still extant today are rare. They occur on all continents except Antarctica. More than 350 of these are of greater or lesser conservation concern; they fall within the IUCN categories of threat. New Caledonia is the world's most important region by area for conifer diversity; 43 species occur there, of which 36 are listed as threatened, and *all* of these are endemic to the island! In a recent calculation, using a number of scientific criteria, it appeared that of the 48 conifer species of greatest conservation concern, six are endemic to New Caledonia; of these, two are listed as critically endangered and the other four as endangered. Of these six most important New Caledonian conifers (on a world scale), three (*Dacrydium guillauminii*, *Neocallitropis pancheri*, and *Retrophyllum minor*) occur in the Chute de la Madeleine botanical reserve. There is no other small spot in the world that can boast three of the 48 most precious conifers. On top of this, there are other rare endemic conifer species in the same area, so there is little doubt that this small reserve around the waterfall on the Plaine des



Lacs ranks as one of the most important reserves to protect conifers anywhere.

On March 28, 1990, the Chute de la Madeleine botanical reserve, which encompasses ca. 400 ha., was established. On August 6, 1991, the journal *Nouvelles Calédoniennes* printed alarming reports of abuse and even vandalism by uncontrolled "tourists." These reports mentioned such damaging activities as off-road use of motorized vehicles, random cutting of firewood, dumping of refuse, and uncontrolled "camp building" near the waterfall and along the Rivière des Lacs. A member of the SSC Conifer Specialist Group, Alistair Watt, visited the area in September 1993 to document the reported threats. Witnessing the above-mentioned damages, he added the threat of fire emanating from the camping activities to the list. A report in 1994 from a local conservation NGO concurred with Watt's report and added that the number of visitors is increasing and that the lack of regulation is the primary cause of destruction of botanical values.

Both reports included proposals to come to terms with the problems occurring in the reserve. These proposals amount to measures to diminish the human pressure on the reserve and to mitigate the side effects of tourism. Neither proposal envisions a (re-)closure to public access, merely a better regulation of this access. Rehabilitation of the site of the Chute de la Madeleine is deemed necessary in view of the damage already caused, and (temporary) closure of this and other rehabilitation sites may be necessary. Currently, the IUCN/SSC Conifer Specialist Group is advocating that the proposals to halt this alarming destruction in this important botanic reserve be thoroughly studied and their feasibility assessed.

For more information, contact Aljos Farjon, Secretary, IUCN/SSC Conifer Specialist Group, Scientific Officer, Department of Plant Sciences, University of Oxford, United Kingdom.

(Contributed by Conifer Specialist Group)

World's Largest Population of Nesting Turtles Threatened

During a single week in 1991, 610,000 olive ridley sea turtles (*Lepidochelys olivacea*) nested on a short stretch of the beach known as Gahirmatha, located on the east coast of India. In terms of numbers, this nesting represents an extraordinary spectacle, turning a beach which normally is deserted into one that supports the world's largest sea turtle nesting. Gahirmatha forms the eastern boundary of the 672 sq. km Bhitarkanika Wildlife Sanctuary, which was established in 1975, in the State of Orissa, bordering the Bay of Bengal, at the recommendation of an FAO consultancy project. While the beach is 35 km in extent, the mass nesting takes place only along the 10 km between Habalikhati and Ekakulanasi. Long-term studies on the nesting ecology of the species were begun here by the Orissa Forest Department, Utkal University, and the Central Marine Fisheries Research Institute.

Annual nesting between 1976 and 1985 was approximately 130,000 to 500,000 turtles. The nesting of the olive ridley, along with that of the critically endangered Kemp's ridley (*Lepidochelys kempi*) of central America, is en masse, usually involving many hundreds to many thousands of turtles, which are referred to as arribadas (from "arrival" in Spanish). At Gahirmatha, two such nesting peaks take place in a usual year, the first in January/February is generally larger (although in 1987, the second was larger (386,036) than the first (245,157)). The second mass nesting takes place 45-70 days subsequent to the first, or some time in March or April. This coincides with or is just before the peak hatching period of eggs laid during the first arribada. Mass nesting takes place at night, although during the big arribadas, nesting may spill over into the morning. Assuming a male:female ratio of 1:1, and that males accompany females, the adult olive ridley population here is thought to comprise a million animals, with up to an additional six million hatchlings being produced annually!

Now threatening this remarkable nesting population is a new fishing project. The 8.5

million rupee (=ca. U.S. \$280,000) project at Talchua, just 10 km from Gahirmatha, has commenced, which when completed, will establish a jetty, designed to dock 500 motor boats, and a fisheries complex, including a processing plant and prawn culture facilities. This operation will land an estimated 50 tons of fish every day, and considering that the current relatively low intensity fishing operations entrap sea turtles, it will severely endanger the ridley turtle. Turtles caught in trawler nets die by drowning, which represents a significant cause of mortality. The drowned turtles are removed from the nets and thrown into the sea, to wash up on the coast. In March 1983, between 55 and 150 dead turtles were found per 100 m of beach. Comparable to the potential for increased mortality from incidental capture will also be the increased mortality from disturbance by the commotion of the operations and the resulting environmental degradation of the area.

The plea for a letter writing campaign initiated recently has resulted in a large number of letters from all over the world being sent to the Prime Minister of India (Shri P. V. Narasimha Rao, Rashtrapati Bhavan, New Delhi 110 011, India), the Chief Minister of the State of Orissa (Shri Biju Patnaik, Government of Orissa, Bhubaneshwar, Orissa, India) and the Central Minister of Environment and Forest (Shri Kamal Nath, Paryavaran Bhavan, C. G. O. Complex, Lodhi Road, New Delhi 110 003, India). However, to keep up the pressure, this activity has to be sustained and even accelerated. Strong but respectfully worded letters urging the government to relocate the fisheries complex, perhaps at the nearby Paradeep and/or Dhamara areas, would spare this important ridley population.

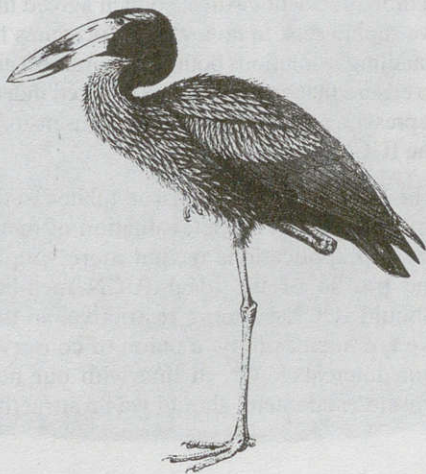
Although the government has assured a ban on fishing within 20 km of Gahirmatha and Talchua, it will not prevent turtle mortality for one simple reason: this ban cannot be implemented effectively. The unacceptably large numbers of turtles drowned in nets (despite a ban on fishing within 5 km of the coast) indicates ineffective enforcement of such bans. Another example is the declining Kemp's ridley turtle populations, where incidental capture in fishing gear has been found to be a

major factor for the population remaining at a decreased level. Nesting populations of the Kemp's ridley are now only found on one beach near Ranch Nuevo in Mexico and a few spots on the Atlantic coast of the southern United States, and these populations are down from approximately 40,000 females during a single night to 500-700 during the entire season.

The olive ridley is technically protected, along with India's most threatened wild plant and animal species, in Schedule I of the Indian Wildlife (Protection) Act of 1972, which implies that any form of capture or exploitation is punishable by a mandatory prison sentence as well as a heavy fine. In the past, collaborative operations to curb poaching and trawling were conducted by the Indian Coast Guards and the Navy, using patrol boats, planes and helicopters, but these efforts have been discontinued.

More than just the fate of the world's largest nesting population of marine turtles is at stake in Orissa. The future of the Bhitarkanika Sanctuary, India's second largest mangrove forest, is also threatened. Bhitarkanika Wildlife sanctuary harbors mainland India's largest population of the saltwater crocodile (*Crocodylus porosus*), as well as significant populations of water monitor lizards (*Varanus salvator*), the Asian giant softshell turtle (*Pelochelys bibroni*), open-billed stork (*Anastomus oscitans*), and several other species of protected reptile, bird, and mammal species, as well as the large patch of mangroves with 62 out of 67 species of mangrove trees known from the country.

(Contributed by Indraneil Das)



Species 27

Statutes Review Process

IUCN is seeking comments from member organizations and council members on the statutes review process. The statutes and regulations, together with the rules of procedure of the General Assembly, constitute the fundamental legal texts of the union. They define the union's purpose, establish how its policy is set and how its officers are elected, and determine the relations among the members, the commissions, and the secretariat. The statutes are the legal foundation of the Union and can be changed only by the General Assembly. The regulations interpret the statutes and are subject to change by decision of Council. Statutes Review Committee's (SRC) proposal is to simplify the statutes, leaving more to the regulations, and thus endow IUCN with a more flexible, adaptable instrument.

The three most controversial issues in this review process are:

1. What should the delineation of the statutory regions in IUCN be? An improved pattern of regions must ensure broad representation from all regions on the one hand and equitable representation of the members on the other. A balance must be found that gives every region a guaranteed representation while ensuring that regions with particularly heavy concentrations of members are rewarded with a stronger voice in IUCN's governance.
2. The second controversial issue concerns the handling of resolutions at the General Assembly. Subsequent to the General Assembly in Buenos Aires, council agreed that we should seek to review the procedures for handling resolutions both to streamline it and to ensure that the resolutions adopted indeed represent as far as possible the consensus of the IUCN membership.
3. The third controversial issue relates to the criteria applied to the evaluation of membership applications or, put more simply, the profile of the ideal IUCN member. Should IUCN be more restrictive, so that we are, increasingly, a union of conservation interests? Or, in line with our new mission statement, should we be attracting

into our union members from other fields who can make a significant contribution to conservation from their particular perspectives, or whom we should be trying to influence because of the impact of their activities on the environment?

For more information, a summary of the first meeting has been sent to all members, or you may contact IUCN headquarters. Please send comments to Dr. Parvez Hassan (Chair of SRC) c/o Director General, IUCN Headquarters, Rue de Mauverney 28, CH-1196 Gland, Switzerland.

(Contributed by Joanna Boddens)

African Wild Dog Survey

In 1985-1988, John Fanshawe and Lory Frame carried out a mail survey concerning the status and distribution of the African wild dog (*Lycaon pictus*). Their survey has been instrumental in improving our understanding of the plight of this animal. We know now that the species is headed towards extinction over much of its range and only concerted efforts will revert this trend. Although advances have been made in identifying and protecting wild dog populations in eastern and southern Africa, an adequate understanding of the distribution and abundance of this species in Western Africa is still lacking.

The IUCN/SSC Canid Specialist Group, sponsored by the Licaone Fund, is now undertaking a more detailed survey of countries in western Africa where wild dogs might still be present. If you have ever seen wild dogs in West or Central Africa, or know people who have seen wild dogs, we would be extremely grateful if you could contact us.

Dr. Claudia Sillero-Zubiri
Canid Specialist Group
Wildlife Conservation Research Center
South Parks Road
Oxford OX1 3PS, UK
Tel: 01865 271128, Fax 01865 310447
Email: sillero@vax.ox.ac.uk

Canine Distemper Epidemic in Lions

Earlier accounts of the canine distemper virus (CDV) epidemic in the Serengeti lions reported that the virus was affecting approximately 20-30% of this population of 3,000 African lions. The prides, which have been involved in long-term behavioral studies, have varied in their losses ranging from a few individuals to entire prides; the epidemic has thus far claimed more than 50 lions from these closely monitored prides. Controlling the epidemic through vaccination of wildlife is neither safe nor feasible because the modified-live CDV vaccines can induce disease in carnivores other than domestic dogs. Instead, the SSC Veterinary Specialist Group, along with other experts, has been recommending the vaccination of domestic and feral dogs as the best means of controlling the outbreak, although Tanzania still has not implemented a vaccination program due to political problems and concerns over the hunting dog.

As many feared, the outbreak is extending into other lion populations. The population in the Ngorongoro Crater has always been considered at risk due to its isolation, and now there are reports that the epidemic has reached this area. It is said that 25% of the lions have disappeared and are presumed dead, but, it is difficult to get accurate information.

The canine distemper epidemic has also reportedly extended to the Masai Mara game reserve in Kenya. An alleged 100 lions have died in this reserve. In an attempt to contain the disease, the chief veterinarian of the Kenya Wildlife Service has initiated a program of strategic

vaccinations of domestic dogs in the area.

Canine distemper is caused by a virus belonging to a group of viruses known as morbilliviruses. While morbilliviruses are associated with canine distemper in canids and measles in humans, disease caused by this group of viruses has only recently been reported in cats. One outbreak is the current epidemic in the African lions, and the other involved captive lions, tigers, and leopards in California. However, the canine distemper in a juvenile bobcat (*Lynx rufus*) was diagnosed in November 1993 in New Brunswick, Canada. As far as the SSC Veterinary Specialist Group knows, this bobcat is the first case to be observed in the wild in the New World.

To further investigate this disease, the SSC Veterinary Specialist Group would appreciate receiving any sightings of tremors, seizures, or unexplained deaths in wild cats or other carnivores in any country. If you have any such information, please contact Dr. Michael Woodford (Washington, D.C., U.S.A., fax 202-331-9448) or Dr. Linda Munson (Knoxville, TN U.S.A., fax 615-974-5616).

(Contributed by Dr. Michael Woodford,
SSC Veterinary Specialist Group)



New Facility Available for Research, Environmental Studies in Central American Tropics

Caribbean Conservation Corporation, one of the world's leading non-profit marine and coastal wildlife conservation organizations, has recently completed construction of a field research complex in the Central American tropics: The John H. Phipps Biological Field Station at Tortuguero, Costa Rica.

The John H. Phipps Biological Field Station is located on the northern Caribbean coast of Costa Rica, in a biological corridor connecting Tortuguero National Park and the Barra del Colorado Wildlife Refuge. These two sanctuaries join with the 290,000 hectare Indio-Maiz Biological Reserve in Nicaragua to contain the largest continuous expanse of protected tropical rain forest north of the Amazon.

The Tortuguero area offers excellent research opportunities in ecology, botany, wildlife, hydrology, soils, and aquatic, estuarine, and terrestrial systems. The new complex is surrounded by a rich diversity of plant and animal species, giving scientists and students access to an interesting and wide array of habitat types, including four species of endangered marine turtles that crawl ashore to nest on Tortuguero's black sand beaches each year. Species lists of the flora and fauna of the area are available, as is an extensive bibliography spanning three decades of research conducted at Tortuguero.

The new station is open year-round and is an ideal site for anyone planning environmental studies throughout the Central American tropics, as well as for group meetings, conferences, and seminars. In addition to bedrooms for up to 24 people, a spacious kitchen and dining hall, a classroom, a quiet reading room, and outdoor rustic verandas, the complex includes a Natural History Visitor Center. Tour guide services, research assistants, and extended in-country travel can also be arranged through Caribbean Conservation Corporation. For more information, contact Caribbean Conservation Corporation, P.O. Box 2866, Gainesville, FL 32602-2866, fax: 904-375-2449.

(Contributed by Gina Bonarigo)

British Herpetologist Honored by Göteborg University

British citizen Keith Corbett, a well-known European wildlife conservationist from Moordown, Bournemouth, in Dorset, has been conferred the Honorary Academic Doctors Degree at the Göteborg University in Sweden for his efforts to protect species of amphibians and reptiles and their habitats.

Corbett has been working with nature conservation organizations on national and international levels, and particularly with the Berne Convention (Council of Europe). He is one of the most important persons promoting the protection of rare and endangered amphibians and reptiles in Britain and Europe today. Due to his efforts, many heavily threatened animals and important habitats now have the attention necessary for their protection.

The Swedish king, His Royal Highness Carl Gustav XVI, honored Corbett already in 1991 with the *Global 500 Award*, a recognition with great prestige. Much of the work has been carried out in close cooperation with the Conservation Committee of the European Herpetological Society SEH, which is also the IUCN Specialist Group for European Amphibians and Reptiles. On October 29, 1994, Corbett was conferred his Honorary Academic Doctors Degree during a ceremony at the Göteborg Concert Hall. Later the same day, a banquet was held in the City Hall for 500 invited persons, where Corbett and his wife were prominent guests.

(Contributed by Claes Andrén, Göran Nilson, Richard Podlousky, and Anton Stumpel)



Grants and Jobs

Earthwatch Grants

The Center for Field Research (CFR) invites proposals for 1996 field grants awarded by its affiliate Earthwatch. Earthwatch is an international non-profit organization dedicated to research and public education in the sciences and humanities (see *Species* No. 20 for full description).

Earthwatch field grants average \$20,000. These funds are derived from the contributions of Earthwatch members who pay for the opportunity to join scientists in the field and assist with data collection and other research tasks. Earthwatch field grants cover the costs of maintaining volunteers and principal investigators in the field and may help with other field expenses.

For more information, contact Dee Robbins, Life Sciences Program Director, The Center for Field Research, 680 Mt. Auburn Street, Watertown, MA 02172. Phone: 617-926-8200; fax: 617-926-8532; e-mail: drobbins@earthwatch.org., or Sean Doolan, Scientific Development Officer, Earthwatch Europe, Belsyre Court, 57 Woodstock Road, Oxford, OX2 6HU, U.K. Phone: 0865 311 600; fax: 0865 311 383; e-mail: Doolan@vax.oxford.ac.uk.

Graeme Caughly Traveling Fellowship

The Australian Academy of Science seeks to establish a traveling fellowship with the purpose of honoring the contributions of Graeme Caughly to ecology and conservation. Caughly contributed greatly to the study of large vertebrate communities, conservation biology, and wildlife management, and he leaves behind three influential books: *Analysis of Vertebrate Populations*, *Wildlife Ecology and Management*, and *Conservation Biology: In Theory and Practice*. The Graeme Caughly Traveling Fellowship is to be awarded to an ecologist, resident in Australia or New Zealand,

to visit scientific centers outside their own country. The fellow may be drawn from any field of ecology, but special consideration will be given to those areas in which Graeme Caughly had a special interest, namely population ecology of wildlife and its scientific management. To sustain the fellowship, a capital fund of about A\$50,000 is required. So far, more than two-thirds has been raised and the aim is now to raise the balance by a public appeal, conducted by the Division of Wildlife and Ecology and the Australian Wildlife Management Society. Contributions should be sent to Australian Academy of Science, GPO Box 783, Canberra, ACT 2601, Australia.

The Darwin Courses in Tropical Biology

In 1995, the Tropical Biology Association is planning to hold four Darwin Courses. Two courses, focused mainly on tropical forest ecology, will return to Kibale Forest, with excursions planned to the lakes and savannahs of Queen Elizabeth National Park. Another, examining both aquatic and dryland systems, will be based at the Elsamere Field Studies Centre in central Kenya—on the shores of Lake Naivasha, and a few kilometers from the spectacular Hell's Gate National Park. The fourth skips continents to southeast Asia, where Malaysia's Danum Valley—the 'Flying Forest'—provides an exciting site for another tropical forest course.

Approximate dates for the field courses are: Kibale June 29 to July 30 and August 3 to September 3; Naivasha August 31 to October 1; Danum June 15 to July 13. Interested parties should contact the Director, Tropical Biology Association, School of Biological Science, University of Bristol, Woodland Road, Bristol B58 1UG, United Kingdom.

In Memoriam



Ian Martin Coulson. Ian Coulson died on October 2, 1994, aged 36, of severe injuries received five days earlier during an aircraft accident in a remote area of northern Zimbabwe. Ian and two members of his staff from the Sengwa Wildlife Research Institute were collaborating with the WWF to count elephants from the air. Ian had been involved in these surveys for many years, contributing to the quota setting process in *CAMPFIRE*, Zimbabwe's renowned program in which rural communities manage their wildlife and receive the benefits of its use.

Ian always considered this sort of low-level survey to be uncomfortable (to put it mildly) but shrugged off the danger. On this occasion, the aircraft appears to have run into difficulties shortly after the survey started, whereupon it touched the top of the trees and plunged into the ground. With a full load of fuel, it burst into flames on impact. Two of the occupants were killed outright, but Ian and Andrew Masarirevu managed to get out, though with broken limbs and severe burns. Somehow they helped each

other traverse several miles of extremely rough country to a village where the elders sent runners for medical assistance. In the sad inevitability of the following five days, during which both men died of their injuries, it is typical of Ian that his main concern was clearly for the welfare of his colleague.

Ian Coulson was born in England but left for Africa with his parents at the age of eight. Throughout his schooling his main interest was natural history, and the more slithery and slippery the creature the better. A fascination with snakes was not diminished even when his brother was bitten by a black mamba. At university, ear-splitting rock music joined Ian's lengthening list of interests. Several years later his wife Sylvia finally managed to reduce the volume, but the snakes persisted and tortoises and pangolins were added. Not surprisingly, Ian was best known to the SSC as a member of the African Reptile and Amphibian Specialist Group.

After university in South Africa, from which he graduated with a first in zoology, Ian joined

the Department of National Parks and Wild Life Management in Zimbabwe shortly before independence in 1979. He was posted to Gonarezhou National Park and then to Sengwa, where he remained for 13 years, initially as the junior ecologist but later as officer-in-charge. Sengwa is one of the few wildlife areas in Africa set aside for research, and among his other duties he hosted and assisted a long list of both local and international researchers working on issues ranging from dung beetle distribution to elephant communication. His own research centered on the interaction between elephants and riverine acacia woodlands. Despite his love of elephants, Ian weighed up the issues and determined that the Sengwa woodlands should be allowed to recover from the elephant-induced damage of the 1970s. He therefore insisted that 250 animals be culled, and as a result of this decision the acacia woodland is almost mature. It will be a lasting memorial to a biologist whose honesty, integrity, dedication, and courage was recognized far beyond the wildlife community in Zimbabwe.

(Contributed by Dr. Jon Hutton, African Resources Trust)

Gerald Durrell 1925-1995. Gerry Durrell used to earn his living as an animal collector on contract to zoos to supply exotic wild animals. He ended up one of the most published authors in the English language, selling tens of millions of books in numerous languages, and the dozen of those who gave zoos a *raison d'être*. But my abiding memories of him are rather different: making the most fabulous curries and his startling perceptiveness about people, the very heart of his books and his ability to choose great people to work with him. He was a close and trusted friend with whom I shared the same visions and prejudices; we both preferred animals to humans and hated cocktail parties!

From his time in Corfu, immortalized in *My Family and Other Animals*, to his collecting days in Africa and South America, to establishing his zoo in Jersey, and to the time when his single-minded initiative went broke and he had to mortgage books he hadn't yet written to National Westminster for a loan, he exempli-

fied what someone with vision can achieve by giving their all.

From 1980, when Gerry and Lee invited me over to Les Augres Manor, our collaboration took off: the UKC-validated Diploma in Endangered Species Management, the self-funding R&D program we have in Provence, the Jersey Scientific Advisory group, postgraduate research projects, international workshops, the Madagascar tortoise project. In the summer of 1989, I sat with Gerry and asked him if I could call my new institute after him in recognition of his life's work. It was a significant moment I will always remember. G. Durrell speechless! And then "What do you want me to do?" and the response "Nothing!" He called his brother Larry (Lawrence Durrell) in France and told him that an institute was going to be named after him, to which the immediate barb was "What? A mental institution!" Conscious of what it costs someone personally to build something like an institute or a zoo, always skeptical of academics and pretensions, he helped and gave time to our endeavors, for which this university recognized him on November 24, 1989, with a DSc. Later that summer, we hosted or launched the First World Congress of Herpetology at UKC, The Herpetological Conservation Trust, DICE, and the international journal *Biodiversity and Conservation*. We will dedicate the next theme issue on captive breeding to Gerry.

But there is one thing over all else that makes him one of the greatest conservationists that ever lived. On meeting he was exactly as one imagined him: warm, intelligent, loyal, and full of fun. A university colleague writes "... in a busy series of engagements he still found time to chat something not many would have bothered to do." He did more for animals and the people who cared about them than any person alive. This institute, its staff and many friends worldwide, and our trustees will miss him dreadfully. There are very few left like him.

He lived a life without which the world would have been a poorer place and without whom our job is that bit more difficult.

(Contributed by Ian R. Swingland, Founder, The Durrell Institute)

Features

IUCN's Report on CITES Ninth Conference of the Parties

Simon Stuart

IUCN had a major involvement in the Ninth Meeting of the Conference of the Parties to CITES held in Fort Lauderdale, Florida in November 1994. A delegation of almost 30 people, including SSC members, HQ staff and RCO staff, was present for all or part of the time. Overall, despite certain disappointments and frustrations, this was the best CITES Conference in many years. This report on the meeting is divided into two main sections: (1) Key results of the meeting; and (2) Evaluating IUCN's impact.

Key Results from the CITES Meeting

A Question of Balance

This time, the Parties pulled back from the ugly confrontation that we have seen in recent years, and started to address difficult conservation issues in a pragmatic manner. Thus, they pushed for strict conservation and trade bans where needed, but allowed options for sustainable use where this is the best approach. Examples of strict protection being brought in for certain species include two endemic species of flying foxes from the Philippines, red panda, giant muntjac, Vu Quang ox, red-and-blue lory, Egyptian tortoise, and various rare and threatened Madagascar succulent plants. All these were good decisions. In addition, several species that are subject to unsustainable use for international trade (or which are thought likely to become so in the future), but which were previously unlisted, were added to Appendix II. These include: three species of African pangolin; hippopotamus; saiga antelope; North American box turtles; red sandalwood; African stinkwood; Himalayan yew; and agar wood. Again, these were sound decisions.

Keeping the Appendices Clean

The Parties also made a lot of progress in tidying up inappropriate and unjustified listings of species that are not subject to significant levels of trade. Several species were removed from Appendix I, or from the Appendices altogether, for this reason, including: brown hyaena; three species of tinamou; and several species of cactus and orchid. The Parties also rejected a number of proposals to list species that do not appear in international trade at any significant level: four species of armadillo; three species of kiwi; and several orchids.

Sustainable Use Options

More significantly, a number of high profile species were transferred from Appendix I to Appendix II for sustainable use programs that will benefit conservation. This shows unusual courage by the Parties. Examples include: black caiman in Ecuador (for a ranching program); white rhinos in South Africa (for hunting trophies and live animals only); and vicuña in Chile and Peru (for wool from live-sheared animals). Each of these was controversial with animal welfare groups, and it is remarkable that the Parties actually permitted sustainable use options for these high-profile species. The key issue with the vicuña is that Chile and Peru are clearly trying to be innovative in departing from traditional (and, in Peru, unsuccessful) law enforcement, and are instead involving local communities to enhance the benefits to both the vicuña and the communities. The changes agreed at the meeting also allow Peru to sell its legal stockpile of vicuña wool. It is hoped that these decisions put to rest a controversy that has raged under CITES for the last ten years.

Disappointments

In addition to the timber issue (see below), there were several other disappointments. The Parties lost their courage when it came to the African elephant proposal from South Africa. Although a number of countries supported South Africa's request to resume international trade in non-ivory products, most African countries (in particular the francophone ones) did not. However, no-one was able to put forward any convincing arguments that trade in non-ivory products from South Africa would pose any risks to elephants elsewhere. Aware of the lack of objective reasons for rejecting South Africa's proposal (in fact the proposal was withdrawn by South Africa before a vote was taken), the Parties decided to establish an inter-sessional mechanism to attempt to resolve the African elephant problem before the next Conference of the Parties. This mechanism will involve all the range states of the African elephant. The establishment of this mechanism represents a major step forward.

Another example of lost courage relates to Italy's proposal to list the edible-nest swiftlets from tropical Asia on Appendix II. This would have had the effect of bringing the issue of sustainability into the massive trade in swiftlet nests, and was strongly opposed by the edible-nest trade and by several range states. The proposal was withdrawn in favor of a process to examine the sustainability of nest harvesting, and to establish conservation priorities. This was quite similar to the issue of timber trade, where powerful economic interests attempted to block rational discussions of conservation and sustainability. However, this establishes the precedent of CITES mechanisms examining trade issues in non-listed species (see also sharks below).

Another disappointment was the withdrawal of a proposal (which admittedly contained a number of problems) to list several species of North American freshwater mussel species on Appendix I. The harvest of North American freshwater mussel species, which form the basis of the world's cultured pearl industry, is seriously endangering a number of species. Unfortunately, the United States withdrew the proposal.

The Criteria

The big decision of the meeting was the unanimous adoption of the new criteria for listing species on Appendices I and II. These criteria were largely drafted by IUCN, and were strongly opposed by certain NGOs (for-the-most-part not IUCN members) and some governments (mainly the United States). However, after careful explanation of the issues by the IUCN and TRAFFIC delegations, and a working group brilliantly chaired by Jim Armstrong (of Australia, also Chair of the CITES Plants Committee) the criteria were adopted with surprisingly few amendments. About 90% of the changes put forward by IUCN, TRAFFIC, and WWF were accepted. The main differences between the version finally adopted and the version put forward by the Standing Committee were: (a) the quantitative guidelines for including species in Appendix I were moved out of the biological criteria themselves, and placed instead in an annex defining terms used in the criteria; and (b) the inclusion of more explicit language relating to the precautionary principle. The new criteria clearly provide a far more rational, scientific, objective, and explicit basis for making listing decisions. However, the most radical (and largely overlooked) aspect of the new criteria is that they are explicit that listing on Appendix II does not necessarily need to relate to potential threat of extinction. Essentially, a species could be listed in Appendix II if harvesting for international trade may have a detrimental impact by exceeding the level that can be continued in perpetuity.

Review of the Effectiveness of CITES

During the process of developing the new criteria, a number of fundamental questions about the effectiveness of the Convention were asked. As a result, it was decided to conduct a thorough external evaluation of CITES, and the results of this exercise will probably be the leading agenda item before the next COP. The need for this external evaluation was the major issue being pushed by the Zimbabweans and their allies at the meeting. The evaluation will be most timely in view of: (a) the persistent failure of many governments to fulfill their obligations under the Convention; (b) the prob-

lem that many small island states do not have the critical mass within their governmental machineries to implement the Convention (thus a huge hole in CITES in the South Pacific); (c) the possibly anachronistic emphasis on protection as opposed to sustainable use options; and (d) the likely future confrontation between CITES and GATT. All these argue for a good, hard look at the treaty.

Timber

The role of CITES in regulating the timber trade remains a sore point. Apart from the adoption of a proposal by the U.K. to establish a temporary working group to look at the role of CITES in relation to timber, little other significant progress was made. The Red Sandalwood from India was listed on Appendix II (after a protracted fight), but proposals on African blackwood, mun ebony, and various species of African mahogany were withdrawn. However, it was agreed to hold an intersessional meeting on African blackwood, and this will be coordinated by Mozambique. The proposal to list the big-leaf mahogany from Central and South America on Appendix II unfortunately failed by just six votes (few species so clearly meet the criteria for listing on Appendix II). Several countries were very vocal in opposing timber listing in principle, notably Malaysia, Singapore, Brazil, and Bolivia. There is also considerable misunderstanding of the effects of Appendix II listing on timber species. Much of the misinformation floating around the meeting led many timber-exporting countries to believe that timber listing on Appendix II would mean a trade ban. Because of these misconceptions, great importance will now have to be given to the new inter-sessional mechanism on timber.

Medicinal Plants

The Parties did list three medicinal trees on Appendix II: African stinkwood; agar wood; and Himalayan yew. These new listings open some interesting new possibilities for CITES in the listing of medicinal plants. The saiga antelope was a "medicinal animal" listed on Appendix II.

Marine Issues

There was less focus on fisheries issues at this CITES Conference, principally because the proposal to list certain tuna species on Appendix II had been withdrawn earlier. However, the Parties did agree to look at the issue of shark trade (assigning responsibility to the CITES Animals Committee), and come back to it at the next Conference of the Parties. This establishes the precedent of CITES mechanisms examining trade issues in non-listed species (see also edible-nest swiftlets above). Norway's proposal to transfer two North Atlantic minke whale stocks from Appendix I to II was not supported. However, from the direction of the debate, it seems likely that such stocks could be downlisted in future if they are given quotas under the IWC Revised Management Procedure (if and when the whaling moratorium is lifted). CITES will therefore follow the IWC on whales, rather than lead it.

Enforcement

A number of measures were agreed to improve enforcement of the Convention. The agreed measures are as follows: (a) giving high priority for additional funds to be allocated to the CITES Secretariat's Enforcement Project (for appointment of additional staff in the Secretariat to work on enforcement, for assistance to regional law enforcement agreements, and training and technical assistance to Parties); (b) closer cooperation with the World Customs Union and Interpol; (c) better coordination between CITES Management Authorities and customs and police at the national level; (d) the establishment of wildlife enforcement teams at the national level; (e) the promotion of incentives to secure the support and cooperation of local and rural communities in managing wildlife resources; and (f) increased use of information from NGOs on illegal trade.

Budget

Pressure from northern countries resulted in the proposed Secretariat budget for 1996 and 1997 being cut by almost SFr 900,000 per annum, to approximately Sfr 5,476,000 and Sfr 6,536,000 respectively. IUCN might be affected in that the budget for significant trade (animals) was reduced from the original re-

quest by Sfr 14,000 in 1996, and Sfr 21,000 in 1997. Nevertheless, the budget increase is still 14.5% over the previous biennium.

Miscellaneous

Other measures agreed to at the meeting include: (1) a new set of guidelines for the disposition of confiscated specimens of animal species; (2) a new system to register plant nurseries under the Convention; (3) a new set of guidelines to evaluate marine turtle ranching proposals (this was important, because otherwise marine turtle ranching would be evaluated on the same basis as crocodilian ranching proposals, which would be biologically inappropriate); (4) various recommendations to develop innovative new measures to conserve rhinos, to improve CITES enforcement and implementation with regard to rhinos, and to evaluate the effectiveness of the various measures employed to conserve rhinos; and (5) recommendations to tighten enforcement and implementation of the ban in trade on tiger parts, and to eliminate use of tiger parts. Another significant decision related to trade in hunting trophies of Appendix I species. In order to reduce the work required in processing permits, it is now recommended that the Scientific Authority in the importing countries accepts the findings of the Scientific Authority in the exporting country, unless there is evidence to the contrary. In addition, it recommends that Appendix I quotas accepted by the Conference of the Parties be accepted as being non-detrimental. Improved reporting procedures were also agreed for leopard quotas. Finally, the Conference of the Parties (COP) directed the Standing Committee to pursue with the Executive Director of UNEP the extension of the contract of the current Deputy Secretary General until COP10. Jaques Berney will be 60 next February (U.N. retiring age) and this decision (which might be hard to implement) is well-deserved recognition of the person who most symbolizes CITES as an institution.

Politics

A word is needed on the political dynamics of the meeting. The most notable change was the more vocal role played by developing countries at the meeting. This new trend for devel-

oping countries to take CITES more seriously has arisen from two sources: (1) the proposals to list several tropical timber species on Appendix II, with the predictable backlash from the Malaysia-Brazil axis; and (2) the moves taken by the southern African countries (led by Zimbabwe) to forge a wider pro-sustainable use block including countries from outside their region (especially from Latin America (notably Panama), the Caribbean, and Asia). One immediate consequence of this is that the Standing Committee now has a broader regional balance with more members. However, there are some negative political trends as well. The opposition by certain Parties to timber and fisheries listings in principle is little more than vested interests being used to defend unsustainable use. It is clear that most governments, north and south, would like to restrict CITES to the "backwater of nature conservation, narrowly defined," to quote Sonny Ramphal. IUCN should resist this trend. There was also the beginning of an unhealthy emphasis on national sovereignty at the expense of global responsibility. When range states united behind a politically motivated (but technically indefensible) line, the COP tended to let them get away with it.

Evaluating IUCN's Impact

There is no doubt that IUCN had a major positive impact on the decisions taken at the CITES meeting. This becomes even greater when combined with the very effective role played by TRAFFIC, which is a joint IUCN-WWF program. The most obvious positive impacts were on: (1) the 135 proposals to amend the CITES Appendices; and (2) the revised CITES listing criteria. However, IUCN's influence went much wider than this, as is documented below.

Proposals to Amend the CITES Appendices

IUCN Analyses of Proposals to Amend the CITES Appendices

As has been the case for every CITES meeting since 1987, SSC, through the trade program office in Cambridge (formerly the SSC Trade

Specialist Group) and the specialist group network, reviewed all the proposals to amend the CITES Appendices and prepared the *IUCN Analyses of Proposals to Amend the CITES Appendices* for circulation to all CITES Parties and other government and non-government delegations attending the CITES meeting.

The 1994 *IUCN Analyses* jointly prepared by SSC and TRAFFIC were available to the Parties much earlier before the CITES meeting than in the past, which ensured that the Parties had an opportunity to use them, and from the decisions taken, it was clear that they had a major influence. This influence was enhanced through their serving as the background document to the elaboration of the TRAFFIC Network Recommendations on the amendment proposals. These Recommendations go one step further than the *Analyses* in concluding specifically whether each proposal should be accepted or rejected. IUCN/SSC had major input into the TRAFFIC Recommendations, and according to TRAFFIC's analysis, the Parties followed these Recommendations in 92.6% of their decisions on listing proposals. They were ignored essentially only when heavy politics came into play (e.g., the African elephant, timber, etc.).

IUCN intervened many times in the debate on the listing proposals, principally through John Howes on animals and Nina Marshall on plants, and in this way, we influenced the debate on many of these issues. Every proposal that SSC had drafted on behalf of a government or contributed to the development of was accepted by the Parties. In addition, two SSC Specialist Groups made their own recommendations on listing proposals: Cacti and Succulents; and Crocodiles. All the recommendations of the Cactus and Succulent Specialist Group were adopted. For crocodiles, see below.

Crocodilians

The SSC Crocodile Specialist Group had been heavily involved in the development and review of all these crocodilian proposals. There were four controversial issues: (1) the transfer of Ecuador's black caiman population to Appendix II to enable the development of a ranching operation; (2) the maintenance of

Indonesia's saltwater crocodile population (currently allowed for wild harvest on a quota basis) on Appendix II for ranching; (3) the maintenance of Madagascar's Nile crocodile population (currently allowed for wild harvest on a quota basis) on Appendix II for ranching; and (4) approval of a wild harvest quota for Nile crocodiles in Tanzania (previously approved by the CITES Parties for ranching rather than wild harvest). On all of these, the Crocodile Specialist Group (through IUCN delegation members Perran Ross and Specialist Group Chair Harry Messel) played a central role in developing the final compromise.

The Ecuador proposal was accepted with a zero export quota for the first two years (because the ranching facility in question was still in the experimental rather than the operational phase and the management plan for the ranching program was not well-developed). In future, IUCN should probably push for such proposals to be submitted as export quota proposals, and not as ranching proposals, until the management plans are developed. The Indonesian proposal was accepted, but with a zero export quota until issues relating to the implementation and enforcement of the ranching program are resolved. The Madagascar proposal was amended to an export quota proposal, which, unlike the ranching proposals, gives the CITES Parties the opportunity to review progress on management in two years' time.

The result of the Tanzanian proposal was one of the less satisfactory outcomes of the meeting. Tanzania requested a quota of 2,000 per annum to harvest nuisance crocodiles; IUCN suggested 300 (Tanzania actually culls only 100 or so nuisance animals annually). The compromise reached was 1,000, which is much too high. Although not a particularly serious conservation problem in regard to Tanzanian crocodiles, it does set a dangerous precedent of wild harvest quotas being approved in the context of CITES ranching programs, which are intended to replace such harvests.

Rhinos

A draft resolution recommending widening the options available for rhino conservation had been prepared by the SSC African and Asian Rhino Specialist Groups and submitted

by the CITES Standing Committee for the consideration of the Parties at the meeting. SSC Asian Rhino Specialist Group Executive Officer Tom Foose presented the draft resolution to the meeting, and, despite some criticism from certain groups, it was adopted with very few changes. This resolution goes wider than the traditional CITES approach for rhinos, which has been to push for ever tighter trade controls. The new resolution supports tight enforcement, but states that international interventions to put pressure on countries trading illegally in rhino products (such as the highly-publicized actions of the CITES Standing Committee in relation to China and Taiwan) should: (a) be evaluated for their effectiveness; (b) be linked to standardized indicators of success in relation to levels of poaching and rhino population trends in the range States; and (c) the policies guiding such interventions are responsive to the outcomes of such evaluations. In other words, the application of heavy-handed pressure on importing countries will be evaluated more critically in future in terms of its effectiveness in conserving rhinos. The resolution also calls on all rhino range states to develop recovery plans for their rhino populations which: (a) are appropriate for the situation in their countries; (b) will not adversely affect rhinoceros conservation in other range states; (c) include provisions for the reinvestment of revenues derived from the sustainable use of rhinos, in order to offset the high costs of their conservation; and (d) aim towards a long-term goal of self-sufficiency and sustainability of their rhino conservation efforts. As evidence of the seriousness of this new approach, the Parties agreed to the controversial proposal by South Africa to transfer its white rhino population from Appendix I to Appendix II for trade in hunting trophies and live animals only. IUCN spoke strongly in favor of the South African proposal (a statement was read by Richard Emslie, SSC African Rhino Specialist Group executive officer).

African Elephant

Although IUCN did not speak during the debate on the African elephant because South Africa withdrew their proposal before we had the opportunity, there was considerable dis-

cussion by the African range states of a possible role for IUCN in assisting the inter-sessional mechanism. While this is not yet formalized, it remains a possibility.

Tigers

Negotiation on a draft resolution on the conservation of tigers benefited greatly from the major efforts made by SSC Cat Specialist Group Chair Peter Jackson to bring together the tiger range states and assist them in resolving differences of opinion on the text. Adoption of the resolution was almost scuppered when one radical NGO requested certain changes that subverted hard-won compromises but received temporary support from India. Difficult negotiations ensued, but the compromise text agreed by the range states was adopted by the Parties.

Sharks

This was the only fishery issue formally before the meeting, as proposals to list various bluefin tuna species (submitted by Kenya) had been withdrawn before the meeting. As was expected, there was opposition to discussing sharks as a commercial fishery in the context of CITES, with Japan taking the lead, arguing that there were other agencies more competent than CITES to regulate trade in sharks.

Although not formally an amendment proposal, a discussion document submitted by the United States and calling for the CITES Animals Committee to review the status and trade of sharks, no species of which are currently listed on CITES, was adopted after negotiation in a working group. IUCN (through Sonny Gruber and Carl Safina of the SSC Shark Specialist Group) played a major role in achieving a satisfactory outcome to this debate, through an intervention and negotiations on the working group established to draw up a compromise text. Although the CITES Animals Committee will be responsible for the review that was agreed, the Committee expects the technical work to be carried out by the SSC Shark Specialist Group and TRAFFIC.

This decision by the Parties sets a precedent whereby species not listed on CITES may be formally reviewed by CITES structures, with

input of information from the Parties. It may prove useful for other species or groups of species that are being overexploited for international trade but may be difficult to list owing to lack of information or because of the complexity of the problem.

Timber

As is the case with commercial fisheries, there was opposition to any attempt to extend CITES to tree, particularly timber tree, species (although several such species are already included on the Appendices). A discussion paper submitted by the Netherlands on ramin incited the most acrimonious debate. Unfortunately, this paper was discussed prior to any of the listing proposals for timber species and, therefore, set a negative tone to these discussions.

IUCN had prepared a policy statement on CITES and timber species. This statement supported CITES as an instrument for regulating trade in timber, and urged adoption of a draft resolution submitted by the United Kingdom recommending the establishment of an *ad hoc* CITES working group on timber, involving all concerned parties (ITTO, FAO, etc.) to discuss problems relating to implementation of CITES for timber. IUCN (Nina Marshall and Wendy Strahm) participated in the extensive negotiations on this resolution, which was also opposed by several timber-producing countries but finally adopted. The most contentious proposal, to list big-leaf mahogany on Appendix II, was discussed in several working group sessions, but no consensus was possible, and the proposal ultimately failed to make the necessary two-thirds majority. IUCN was the only NGO invited to join this working group (Nina Marshall and Wendy Strahm took part), suggesting that we have a major role to play on this issue in the future.

Medicinal Plants

A number of medicinal plant species were proposed for listing on the CITES Appendices, but the documentation was generally poor. Although most were rejected, they were referred to the CITES Plants Committee, with assistance from the SSC Medicinal Plants Specialist Group, for further evaluation. Three medicinal plant species were

listed on Appendix II, although, as with timber, questions were raised as to implementation of the listing in terms of the products to be subject to trade controls.

Revision of the CITES Listing Criteria

IUCN, through SSC, had been heavily involved in the process of revising the CITES criteria since such a revision was first proposed in 1991. In an effort to ensure the best possible outcome of the criteria revision, IUCN developed a joint position statement on the criteria with WWF and TRAFFIC. The joint statement was accepted as an official working document of the Criteria Working Group that was established during the meeting, and c. 90% of the changes that we requested were adopted in the final version. IUCN was included as a member of the Criteria Working Group (represented by Simon Stuart) and made a major contribution to its deliberations.

Prior to the establishment of the Working Group, IUCN delegation members (in particular, Simon Stuart, Joshua Ginsberg, Wendy Strahm, Amie Bräutigam, Bernardo Ortiz von Halle, Steven Njuguna, Tim Sullivan, and Karen Bjorndal, together with Steve Broad from TRAFFIC) carried out extensive consultations with the Parties on the criteria, including consultations with Parties on a regional basis. These consultations played a major role in dispelling much of the misinformation surrounding the criteria and building support for IUCN's position. Without these consultations, it is unlikely that the new criteria would ever have been adopted.

Confiscated Specimens

SSC has, for several years, been conducting a broad consultation to develop guidelines on the disposition of confiscated live animals, which we expect to result in an IUCN policy statement. As this issue has increased in prominence in the context of CITES, SSC has been providing the results of its consultation to CITES, through the Animals Committee.

The draft resolution tabled at the CITES meeting was the result of the CITES Animals Committee deliberations in which SSC has actively participated, while the 18-page Annex, CITES Guidelines for the Disposal of

Confiscated Live Animals, was in its virtual entirety the work of SSC (Joshua Ginsberg and Mark Stanley Price of the SSC Reintroduction Specialist Group, who are taking the lead on this for SSC, and Amie Bräutigam of the trade program in Cambridge).

To enhance the chances for success of the resolution, which was opposed by animal-welfare interests (the guidelines discourage release to the wild and incorporate euthanasia as a valid option for disposition), IUCN issued a position paper on responsible disposition of confiscated animals. This had a major impact on the discussions held on this issue, as did IUCN's participation (through Joshua Ginsberg and Mark Stanley Price) in a working group. Although there were protracted negotiations, opposition to IUCN's approach from the animal-welfare contingent did not in the end get very far, and the final resolution adopted by the Parties was very close to the original document and to what IUCN had recommended.

Marine Turtle Ranching

IUCN has been heavily involved in the development of guidelines for ranching of marine turtles since 1987, when the CITES Parties specifically requested IUCN to develop such guidelines. The need for specific guidelines arose from concerns that the general CITES criteria for ranching operations, developed for crocodilians, are not applicable to migratory (and much more biologically complex) marine turtles. Lack of consensus on the IUCN draft guidelines in 1988 and a resolution adopted in the 1988 IUCN General Assembly precluded further work by IUCN on the IUCN/CITES guidelines. However, the continued operation of several marine turtle captive breeding and ranching operations and the prospect of ranching marine turtles to replace commercial fisheries has kept this problematic issue percolating in CITES.

Perran Ross, Executive Officer of the SSC Crocodile Specialist Group and member of the SSC Marine Turtle Specialist Group, has been the major technical advisor on this issue for the Animals Committee and was available at the CITES meeting, along with Karen Bjørndal, Chair of the Marine Turtle Specialist Group, to assist in negotiating for the reinstatement of an

essential element of the draft resolution that had been deleted by the Animals Committee, namely the requirement that a ranching program for marine turtles be firmly embedded in a regional management plan. The working group established to thrash out this problem and on which IUCN (through Perran Ross and Karen Bjørndal) served, agreed to reinstate this requirement; hence, the CITES "Guidelines for Evaluating Marine Turtle Ranching Proposals" that have been adopted specifically provide for the development and implementation of a regional management protocol before any marine turtle ranching proposal can be approved by the Parties.

Significant Trade in Appendix II Plants and Animals

IUCN's efforts since 1989 to steer this process, aimed at identifying CITES Appendix II species traded at unsustainable or threatening levels and measures needed to reverse over-exploitation, were vindicated at this meeting. IUCN had been the target of considerable criticism from NGOs and a few CITES Parties for its role in securing the adoption in 1992 of a CITES resolution establishing a process for consultation between the CITES Secretariat and permanent committees and individual Parties regarding measures necessary to reverse over-exploitation of CITES Significant Trade animal species (rather than a much more punitive process establishing blanket trade prohibitions for species). However, the Parties, including those who have been the focus of most questions concerning possibly unsustainable levels of export, expressed support for the process, and no opposition was expressed by any party or NGO.

Registration of Nurseries Exporting Propagated Appendix I Plants

The purpose of establishing a system for the registration of nurseries exporting propagated Appendix I plants was to encourage the artificial propagation of Appendix I species by providing a fast-track for issuing CITES documentation for registered nurseries. However, the challenge in doing so has been finding the right balance between reducing the regulatory

burden and providing adequate safeguards to ensure that any reduction in controls does not lead to an increase in illicit trade.

IUCN was strongly represented on the working group established to negotiate a revised text (Wendy Strahm and Nina Marshall, as well as Eric Hagsater and Vinciane Dumont of the SSC Orchid Specialist Group). As a result, the resolution firmly reflected IUCN's input.

National Legislation

The inadequacy of national legislation to implement CITES in many CITES Parties has been a persistent problem compromising the effectiveness of the treaty. In an attempt to address this, the Parties directed the CITES Secretariat, in 1992, to identify those Parties that did not have legislation to implement the treaty's provisions. The CITES Secretariat contracted IUCN (through the Environmental Law Centre) and TRAFFIC to conduct analyses of legislation implementing CITES in 81 Parties. A report of the findings indicated that 33% of the Parties had totally inadequate legislation to implement CITES, while less than 20% had totally adequate legislation. An initial draft resolution calling for possible trade sanctions against Parties not having enacted adequate legislation by the tenth CITES meeting was amended to require that *draft* legislation be *introduced* by that time. Although this will mean slower progress than had been hoped for, there is at least a realistic target against which the progress of Parties can be measured.

Communications

Since 1987, IUCN's contribution to the biennial meetings of CITES has been largely restricted to the documents prepared and distributed by SSC, primarily through the SSC trade program (formerly the SSC Trade Specialist Group). This was the first CITES meeting for which IUCN made any serious preparations in regards to communications, and a Communications Strategy was developed for the first time. The strategy targeted: CITES Parties (many of which are also IUCN members); IUCN members and their networks; and selected media.

In addition to the *IUCN Analyses of Proposals to Amend the CITES Appendices*, mentioned above, the SSC trade program publication *CITES: A Conservation Tool* (in English, French, and Spanish) was produced in its fourth edition and circulated to the CITES Parties, IUCN Regional and Country Offices, and the WWF CITES Working Group seven weeks prior to the CITES meeting. These two documents were the major technical components in the communications strategy. Several additional documents were prepared in advance of the meeting as part of the strategy: *IUCN Factsheets*, *IUCN Position Statements*, and an IUCN Discussion Paper (The Conservation and Recovery of Species Listed on Appendix I). Based on the number of times these documents were referred to and the number of copies we circulated at the meeting, we are confident that they were successful in communicating IUCN's message as well as emphasizing IUCN's advisory role. It was clear that advice coming from IUCN and TRAFFIC is held in much higher regard than the general input from NGOs.

For the first time at a CITES meeting, IUCN received major global press coverage, largely coordinated by Peter Hulm. IUCN was featured by Reuters, AP, and UPI, and nine press releases were issued during the meeting. Press pickup was substantial, including leading U.S. and international papers (such as the New York Times, Miami Herald, and El Pais).

Conclusions

On balance, significant gains were made at the 1994 CITES Conference, and IUCN was able to have a major influence at the meeting. However, there were also a number of disturbing trends as well, and we shall need to be better prepared to address these during the tenth Conference of the Parties.

*Simon Stuart, Head
Species Survival Program*

The Convention on Biological Diversity: Results from the First Conference of the Parties

Jeffrey A. McNeely, Martha Rojas, and Caroline Martinet

Introduction

Over the past several decades, the general public has become aware of increasing problems of pollution, species loss, climate change, deforestation, and a whole litany of other environmental problems that may have made at least some people despair about society ever finding solutions. In tandem with this awareness has come the understanding that a simple focus on deforestation or individual species has not been an adequate response to the problem of the erosion of biological resources. A far more holistic and multi-disciplinary approach was required that would enable a far larger set of related interests to be involved and to provide a comprehensive way of addressing conservation, bringing information, knowledge, awareness, and ethics into a complex mixture of protected areas, agriculture, endangered species, economics, intellectual property rights, land tenure, trade, forestry, and so forth. This broad approach has been given the label of "biodiversity." Defined more narrowly, biodiversity is the measure of the world's variability of genes, species, and ecosystems. The tangible manifestations of biodiversity are biological resources, which are defined by UNEP as including "genetic resources, organisms or parts thereof, populations, or any other biotic component of ecosystems with actual or potential use or value for humanity." Thus, variability is essential to human and ecological welfare, and its conservation is also a major development issue.

The Convention and its Conference

The Convention on Biological Diversity (CBD) was signed at the "Earth Summit" in Rio de Janeiro in June 1992, entered into force on December 29, 1993, and has now been ratified by over 110 countries. The CBD is one of the most innovative international instruments to have been developed in recent years. It recog-

nizes the importance of biological diversity for humanity both in terms of its intrinsic value and because humans depend on its maintenance to achieve sustainable development. The CBD is comprehensive, addressing biological diversity in terms of genes, species, and ecosystems, whether in their natural state or modified by human intervention. It is also the first environmental treaty to address equity issues, including the recognition of the role of indigenous and local communities in conserving biodiversity.

The main decision-making and implementation is at the national level, addressing the priorities of each Party (see Box 1 for principles and provisions of the Convention). The Convention does not prescribe the means by which the goals agreed are to be met—the CBD has no lists or annexes of accepted sites or species to be protected. In this and other regards, the CBD differs from the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), the World Heritage Convention, and the Convention on Wetlands of International Importance (the Ramsar Convention). The comprehensiveness of the treaty constitutes one of its main strengths, but its complexity also helps explain the difficulties it has encountered and the strong forces that threaten to weaken its development and implementation.

The first meeting of the Conference of the Parties (COP) to the Convention was held in the Bahamas in late 1994. It started, although somewhat timidly, to set into motion the machinery provided for in the Convention. It accepted UNEP as the provider of the permanent secretariat. It agreed policy, strategy, program priorities and eligibility criteria for utilization of financial resources and to continue its interim funding mechanism (the Global Environment Facility). A medium-term workplan 1995-1997 for the COP was adopted.

Key Elements in the Convention on Biological Diversity

Major Principles

Biodiversity has intrinsic value and is a common concern of humanity

Governments have sovereignty over their biodiversity

States are responsible for conserving their biodiversity and using their biological resources in a sustainable manner

Causes of significant reduction of biodiversity should be attacked at their source

The fundamental requirement for the conservation of biodiversity is the *in situ* conservation of natural habitats and the maintenance of viable populations of species in their natural surroundings. *Ex situ* measures, preferably in the country of origin, also have an important role to play

Many indigenous and local communities with traditional lifestyles have a close and traditional dependence on biological resources and need to share equitably in the benefits arising from biodiversity

International cooperation is an important part of implementing the Convention

Major Measures

Contracting parties agree to:

- Develop national biodiversity strategies, plans, and programs
- Identify and monitor important components of biodiversity
- Establish systems of protected areas, manage biological resources, rehabilitate degraded ecosystems, regulate risks of living modified organisms, control alien species, protect threatened species
- Establish facilities for *ex situ* conservation of plants, animals, and micro-organisms and adopt measures for the recovery, rehabilitation, and reintroduction of threatened species
- Implement measures for sustainable use, including use of economic and social incentives
- Establish programs for training, education, and research; and promote access to relevant technology
- Facilitate access to genetic resources, on mutually agreed terms and under prior informed consent of Party providing such resources
- Promote access to relevant technology
- Promote technical and scientific cooperation, including exchange of information relating to biodiversity
- Provide funds to developing countries to help implement these measures and benefit from the Convention's provisions
- Promote technical and scientific cooperation, including exchange of information relating to biodiversity, and provide funds to developing countries to help implement these measures

Among the issues to be discussed at the 1995 COP2 are components of biodiversity under particular threat; marine biodiversity; access to genetic resources; technology transfer issues; the need for and modalities of a protocol for safe handling and transfer of living modified organisms; the financial mechanism; and the FAO global system for plant genetic resources of food and agriculture. The 1996 COP3 will include discussions on the knowledge, innovations, and practices of indigenous and local communities.

The Subsidiary Body on Scientific, Technical, and Technological Advice (SBSTTA), called for in Article 25 of the Convention, was put in operation; chairs were appointed for 1995 and 1996; and its first meeting was scheduled to be held at the UNESCO headquarters in Paris, on September 4-8, 1995. The agreed agenda for this meeting includes: components of biodiversity under threat and the corrective action which could be taken under the Convention; ways and means to promote the transfer of technologies relating to the conservation and sustainable use of biological resources; contents of national reports on the implementation of the Convention; and conservation and sustainable use of coastal and marine biological resources.

It was agreed to hold the second meeting of the COP on November 6-17, 1995, possibly in Indonesia, thereby agreeing to the need for an annual meeting of the COP at least for the first several years. Given the glacial pace of negotiations, such frequency of meetings may well be necessary to move the proceedings along. Finally, December 29 was proposed as the International Day for Biological Diversity (this was subsequently agreed by the United Nations General Assembly).

As can readily be concluded from this brief outline, the magnitude, complexity, and cross-sectoral nature of biodiversity conservation, sustainable use, and equitable sharing of benefits exceed the ability of any Party to successfully implement the Convention by itself or for the Conference of Parties and its Secretariat to provide the technical support required for the effective and proper guidance for the implementation of several of the provisions. We believe that IUCN's Species Survival Commission has a critical role to play in assisting

the Convention process and suggest the following as only a partial list of opportunities for SSC's input in the coming years.

A major item included in the Convention's workplan for 1995 and on the agenda for the SBSTTA—components of biodiversity under threat and action which could be taken under the Convention—especially needs input from the work of SSC, especially its work on "Categories of threat" and identification of components (i.e., species) under threat. CITES already does some of this work when it comes to "tradeable" animals, or parts thereof. But the COP could use effective policy guidance by SSC on the identification of species under the threat, whether currently or in the future (also link with indicator species and keystone species) and the critical importance of linking this with monitoring and assessment.

Ecological impact of living modified organisms and their consideration as invasive species. Biosafety, or the safety of biological material in the environment, has been a major concern throughout the negotiations of the Convention, and Article 19 is devoted to this topic. Within the Convention, biosafety is related to the "safe transfer, handling and use of any living modified organism resulting from biotechnology," a rather overly-narrow definition. While some products which are crucial to human welfare, such as insulin and interferon, are the result of gene technology, many governments and public interest groups are worried that the growing ability to modify genes may result in abuses or unintended impacts on biodiversity, the health of ecosystems, and even on humans themselves. SSC may wish to consider preparing a policy statement on this issue, especially how it affects species of conservation concern.

Clearing-house mechanism. Another innovative aspect of the Convention is its provision to create a clearing-house mechanism (CHM) to promote technical and scientific cooperation (Article 18). Thus, the CHM elucidates a critical aspect of the Convention's objectives, which is the flow of information, techniques, and technologies between Parties.

Article 18 of the Convention required the COP, at its first meeting, to determine how to

establish a clearing-house mechanism. At the Nassau meeting, several countries, led by Sweden and the Bahamas, called for the clearing-house mechanism to become more than simply a switchboard for data and services, by providing brokerage services and facilitating the building of national capacity to manage information. Debate is ongoing as to whether or not the clearinghouse will remain a "switching center" for information or expand to take on "brokerage" functions; however, there seems to be much agreement that the CHM should not duplicate existing information systems, including the species database held at WCMC or SSC's new efforts to establish a data management system. The COP has requested the preparation of a comprehensive study, including costed recommendations, on the needs of Parties, exactly what such a mechanism should include, and how it should operate. Without a doubt, SSC contains the largest reservoir of information, methodology, and technological know-how on *in-situ* and *ex-situ* conservation, especially with animals. Providing this information to the clearing-house mechanism creates an excellent opportunity for this information and know-how to be available. It would be worthwhile to continue to seek opportunities of collaboration with the CBD to ensure the inclusion of SSC species databases, if appropriate.

Conclusions: The Way Ahead

The fact that over 110 countries have already ratified the Convention on Biological Diversity indicates the seriousness with which governments are dealing with the issues. Several important steps still need to be taken:

- The first objective of the CBD is the conservation of biological diversity, yet discussions have tended to focus more on financial and sustainable use areas. SSC should lead the IUCN effort to support global and national action for identifying the priority actions which need to be taken, helping to promote those actions on the ground, and implementing conservation activities when required.

- Numerous challenges to governments are to be expected in the implementation of the Biodiversity Convention, requiring them to regulate access to genetic resources, develop mechanisms for conserving threatened species, designing recovery plans, developing mechanisms to identify the source of material from which any particular benefit is derived, designing ways to ensure equitable benefits sharing, and so forth. SSC advice on these matters would be very useful.
- The Conference of the Parties is and will remain primarily a political forum where governments hammer out compromises. To proceed effectively to implement the three objectives of the CBD, governments will need to move ahead to address their own priorities, often starting with the preparation of the national biodiversity strategies and action plans called for in Article 6 of the CBD; indeed, many governments are already making significant progress in this direction. Perhaps more important, activities to implement the Convention need to be supported by all sectors of society, including local communities, NGOs, the scientific community, industry, and so forth. The CBD offers a unique opportunity for this diverse mixture of interests to work toward the same broad objectives, and SSC needs to play an active role.

Above all, conserving biodiversity and using biological resources sustainably will benefit all of society. Therefore, action to promote the objectives of the CBD at the national level is needed immediately. The international consensus will be often difficult to attain, unless all sectors of society come to contribute in their capacities to the common goal of achieving conservation of biological diversity, sustainable use of resources, and equitable sharing of the derived benefits.

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A longer discussion by the authors may be found in the IUCN Focus series.

Commercial Collecting as a Threat for Amphibian and Reptile Species of the Former Soviet Union

Sergius L. Kuzmin

Mass commercial collecting of amphibians and reptiles in the U.S.S.R. had been limited mainly to widespread and common species, such as newts *Triturus vulgaris* and *T. cristatus*, frogs *Rana temporaria*, *R. arvalis*, and *R. ridibunda*, snakes *Natrix natrix* and *Vipera berus*, and turtles *Agrionemys horsfieldii* and *Emys orbicularis*. These species had been collected officially in hundred thousands each year, mainly for educational and experimental purposes. Threatened species were collected sporadically and in very small numbers. Of the threatened species, only venomous snakes, such as threatened *Naja oxiana*, had been regularly caught for venom extracting. Red Data Book species, in most cases, were collected only with special permission issued by governmental organizations and only for scientific and educational, not commercial, purposes. The only exception was the above-mentioned case with the venomous snakes. Strong control on the private trade and transportation of goods across the Soviet frontiers was sufficient enough to prevent illegal commercial use of threatened species, at least in large numbers. Only a few such cases with threatened amphibians and reptiles are known to have occurred; one instance was the illegal selling abroad of large numbers of the threatened salamanders *Ranodon sibiricus* and *Mertensiella caucasica*.

The so called "perestroika" and resulting destruction of the Soviet Union led to the establishment of a community with unclear status, called the Commonwealth of Independent States, and of three independent Baltic republics. These events are accompanied with profound political and economic crisis. The former all-Union broad system of wildlife protection and management ceased to operate. The systems of wildlife protection and management on the level of the republics are not clearly defined as of yet, and the existing programs of wildlife conservation do not re-

ally work. On the other hand, official declarations on the course towards the open economics in Russia and other former Soviet republics are accompanied with an explosive development of poorly controlled private trade, opening of frontiers for export, and disregard of laws.

This has resulted in unprecedented trade in amphibians and reptiles for the pet trade. The few former official collections of animals for educational and medical purposes comprised a much smaller threat for amphibian and reptile populations than do the current numerous legal and illegal personal dealers and private firms which are supplying the pet trade. Some foreign herpetological trade companies from Western Europe and the U.S.A. now are trying to establish permanent contacts with herpetologists and dealers in the former U.S.S.R. for regular export of local amphibians and reptiles.

At present, the number of people and firms engaged in this trade are not known exactly, but it appears they are numerous and operating in the different republics of the former Soviet Union. Russia and the Baltic states are the main centers of such business. Almost all the species of amphibians and reptiles are now available for trade: some species as pets, others as their food. The more rare and attractive a species is for pet keepers, the more profitable trade in it is. As a result, such species are collected in especially large numbers, which may result in sharp declines not only on a population level but also on a species level. Although exact numbers of purchases of such species are unknown, existing information leads to the estimation of thousands of specimens per year being ordered. Barbaric methods of collecting, transportation, and temporary keeping, which are used by those seeking immediate profit, lead frequently to high mortality among animals. In reality, the trade is not controlled officially, and the species from Red Data Books of the former Soviet republics are

in open trade. Also, poorly accessible species may become a goal of special orders, if a client offers to pay enough money.

The majority of animals are collected in the Middle Asia, Caucasus, and Carpathian Mountains, including natural reserves. Among the threatened species¹ collected are: salamanders and newts *Ranodon sibiricus* (Kazakhstan), *Salamandra salamandra*, *Triturus alpestris*, *T. montandoni* (Ukraine), *T. vittatus ophryticus* (Russia and Georgia), *Mertensiella caucasica* (Georgia), monitor *Varanus griseus* and cobra *Naja oxiana* (Turkmenistan and Uzbekistan), lizard *Eumeces latiscutatus* and turtle *Trionyx sinensis* (Russia), vipers *Vipera ammodytes* and *V. kaznakovi* (Russia, Armenia, Georgia). The newts which are likely to be included in the next Red Data Book of Russia, *Triturus karelini* and *T. vulgaris lantzil*, are also sold in high numbers. Mass collecting of large but popular Far Eastern snakes *Rhabdophis tigrina* and *Elaphe schrenckii* has resulted in a sharp decline of some of their populations.

Unfortunately, the kind of "open frontier" politics which exists today in the former Soviet republics promotes domestic and international trade in threatened amphibian and reptile species. Due to the high rate of inflation and the price difference of food and goods between the former U.S.S.R. and the western countries, international trade in amphibians and reptiles is quite profitable. On the other hand, customs control is not sufficient to prevent export of threatened amphibian and reptile species. These species frequently are not declared properly. For example, in 1993 a large number of *T. vittatus* and *T. karelini* were exported to West Europe via Moscow, but were declared only as "*Triturus* sp."

Common species may also become threatened in the near future due to non-controlled collecting and export. There is a danger of regular export from Russia of large numbers of common newts, brown frogs, and other amphibians, which are protected in Western Europe. Such an export may lead to decline of many local populations of these animals. Intensive immigration of Chinese citizens to the

Russian Far East for "temporary work" and for trade has led to serious destruction of not only large mammals (which has yet been reported in local and foreign media), but also of amphibians and reptiles used in traditional Chinese medicine and food. According to some, collecting of frogs by the Chinese has led to notable declines in various populations in the Khabarovsk Province. Also, in the Primorye Province, there were attempts to export dried frog legs by the sack full.

All of this indicates the necessity of immediate elaboration of an effective system of control on animal collecting and trade in the former Soviet Union. A new system of wildlife management must be created, and the former Red Lists for different republics must be re-evaluated according to new political realities. Intensive work on amphibian and reptile commercial breeding in captivity must be prompted to undermine their commercial collecting in nature. All the former Soviet republics, including the Baltic states, must elaborate and adopt an effective common system of wildlife protection and trade control.

Until effective systems are in place and because the laws today are widely violated in the former Soviet republics, international efforts for amphibian and reptile protection are necessary. It would be desirable if the World Conservation Union (IUCN) would draw the attention of the governments of these republics to the alarming situation with animal trade. It would also be desirable if the IUCN would request the governments of the western countries to prohibit the import of large numbers of all species of amphibians and reptiles from the former Soviet Union (first of all, species from local Red Data Books), until these problems are resolved. Western European and American officials involved in wildlife protection must understand the real danger of uncontrolled commercial contacts between pet dealers in their countries and in the former Soviet Union.

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¹ The parentheses indicate the republics to whose Red Data Book the species belong.

Dolphins, Porpoises, and Whales: 1994-1998 Action Plan for the Conservation of Cetaceans.

Compiled by Randall R. Reeves, Stephen Leatherwood, and the IUCN/SSC Cetacean Specialist Group, 1994, 92 pp., £13.50, U.S. \$20.00. Available from the IUCN Publications Services Unit, 219 Huntingdon Road, Cambridge CB3 0DL, United Kingdom or in the United States and Canada from Island Press, Box 7, Covelo, California 95428, U.S.A.

The challenge before the Cetacean Specialist Group (CSG), and indeed before most of the IUCN/SSC specialist groups, was well defined by Katona in his discussion of planning for the recovery of humpback whale populations: "... management of the humpback whale or of any endangered species cannot be regarded as a task to complete. While there may be some actions that need to be accomplished only once, for example designating certain locations as sanctuaries for the species, other actions may need to be overseen or repeated forever, or until a decision is taken that the species should not be protected."

It can still be stated that humans have not caused the extinction of any cetacean species. However, this is a tentative and somewhat hollow claim. Surviving wild populations of at least four species (baiji, vaquita, northern right whale, and bhulan) are in the low to mid-hundreds, and in the cases of the baiji and the vaquita, a declining trend is thought to be continuing. Some populations of other species have been exterminated or very greatly depleted, e.g. the Atlantic gray whale (extinct) and the eastern spinner dolphin in the Pacific (reduced to about a third of its population size in the 1950s).

Conservationists and scientists campaigned for many years to bring the direct exploitation of large cetaceans under effective control, largely by changing the policies of the International Whaling Commission (IWC). Right whales and bowheads have been protected from commercial whaling under international law since 1935 (although with some well-known violations), gray whales since 1946, humpbacks and blue whales since the mid-

1960s. The worldwide moratorium on commercial whaling, which took effect beginning in 1986, can be seen as the most recent in a long line of protective measures.

There is now reason for cautious optimism about the status and future of certain populations of large whales. For example, right whales in the South Atlantic, humpbacks off Australia, gray whales in the eastern North Pacific, and possibly blue whales in the eastern North Pacific have shown signs of steady recovery under protection. Some stocks, however, such as those of right whales in the North Pacific, bowheads in the North Atlantic, and blue and fin whales in the Southern Ocean, apparently remain dangerously small, and there is no reason to be complacent about their future. The lack of adequate monitoring makes it impossible to investigate trends in these stocks. In the 1980s and early 1990s, direct exploitation has not posed an immediate threat to most endangered whale populations, but accidental mortality in fishing gear, reduction of prey due to competitive harvesting by humans, and pollution have emerged as potential threats that give cause for continuing concern.

There is still much interest in the conservation of the great whales. The high public profile of commercial whaling ensures that governments, non-governmental organizations (NGOs), and inter-governmental organizations (IGOs) will continue to apply pressure on the whaling nations to eliminate whaling altogether or to keep harvests within sustainable limits and protect at least some populations. The CSG membership has always been well represented in the IWC's Scientific Committee as well as in many of the relevant govern-

mental agencies, NGOs, and other IGOs. Many members therefore have been involved directly in the work of developing an effective regime for large-whale conservation.

The first CSG Action Plan deliberately redirected the attentions and energies of conservationists from the commercially exploited great whales to the smaller cetaceans, and the present Action Plan continues the emphasis on river dolphins and coastal populations of marine species. With the possible exception of the northern right whale, these groups encompass the most critically endangered species whose exceptional vulnerability is often tied to a geographically restricted range, a relatively narrow ecological niche, and a dependence on resources that are also used by humans.

The survival of river dolphins depends on the health of major river systems in less developed countries. These dolphins are in direct competition with humans for the necessities of life: food and fresh water. Whether it is to control flooding, support irrigation, or produce electrical power, the impetus for dams, barrages, embankments, and other river modifications grows relentlessly. These structures fragment populations of dolphins and their prey and reduce the amount of suitable habitat available to them. Moreover, the drive toward economic development through industrialization, coupled with rapid growth in human populations, has meant that rivers must absorb ever-increasing amounts of waste products, while at the same time they are expected to produce larger and larger quantities of fish, crustaceans, and mollusks for human consumption. Although river dolphins in many areas enjoy religious, customary, or legal protection from hunting, they face many threats, for example from accidental fouling in fishing nets

and hooks, collisions with powered vessels, underwater detonations, and polluted or diminished food supplies. In some areas, directed takes (i.e. those where the cetacean was the fisherman's or hunter's intended target) continue to occur, and there is a demand for river-dolphin products such as meat, oil, and reproductive organs.

Coastal small cetaceans are also perceived as competing with humans for certain resources, often with no direct evidence to support such perceptions. Some populations have experienced high rates of mortality due to accidental entanglement in fishing gear, and in areas such as Peru, Sri Lanka, and the Philippines, the bycatch has given rise to a directed catch as fishermen have become more aware of markets for cetacean meat, blubber, and organs. Culling operations, inspired by the perception that depredations by small cetaceans are responsible for local declines in fish harvests, continued at least until 1991 in Japan and may continue in the Philippines and Turkey.

(Reprinted from 1994-1998 Action Plan for the Conservation of Cetaceans: Dolphins, Porpoises, and Whales, compiled by Randall R. Reeves and Stephen Leatherwood. In addition to assessing the status of species and populations, this Action Plan describes the problems faced by cetaceans, including direct exploitation, habitat loss, and bycatches. This document also includes two different chapters on cetacean conservation; one describes possible solutions, the other recommends various actions.)

Birds to Watch 2

The World List of Threatened Birds

BirdLife Conservation Series No. 4, N.J. Collar, M.J. Crosby, and A.J. Stattersfield, 1994, 407 pp., £18.50. Available from the Publications Department, BirdLife International, Wellbrook Court, Girton Road, Cambridge, CB3 0NA, United Kingdom

Two weeks ago here in London I spoke about endangered species to a group of school children aged under 10. The occasion sticks in my mind for two reasons. First, compared to groups I generally talk to, they were agog with interest throughout (it was a short talk). But secondly, they asked a stream of extremely demanding questions about numbers: how many species there are, the number that are endangered, the number of lions, tigers, bats, crabs, and millipedes, extinction of big trees versus small trees, and so on. In short, they wanted data.

I don't think this obsession with data is restricted to London school children. Actually, I share it, and so do many scientists, despite being skeptical about the precision with which we can estimate the almost unknowable elements of our world. When we move up (or along) and into the realm of policy makers and especially the press, data become supreme. These are the people that species conservationists most need to impress, and we are going to have to get better at presenting the information that we have in a way that impresses them. *Birds to Watch 2* meets this aim, and most importantly does it in an authoritative and fully documented way. Here is a complete listing of all globally threatened bird species, including for each one a short account that includes distribution, trends in population, habitat, and the major threats. With remarkable symmetry and economy of numbers, Collar *et al.* identify 1,111 bird species as threatened (11% of the total). A further 11 species (0.1%) are classified as Conservation Dependent and 66 (1%) are Data Deficient. As will be clear, *Birds to Watch 2* is also notable for its pioneering role in applying the new IUCN threatened species criteria (see Mace & Stuart, *Species* 21-22:13-24). The entry for each of the threatened spe-

cies also includes the category of threat (Critically Endangered, Endangered, or Vulnerable) and lists the numerical criteria that causes it to be listed at that level. Nigel Collar, and other members of the BirdLife team, were extensively involved in the drafting process for the new criteria, and as Collar *et al.* mention, the criteria and *Birds to Watch 2* evolved together. In fact they were finalized at about the same time, so that the differences between the version of the criteria used here and that finally adopted by IUCN are relatively trivial.

The total of 1111 threatened bird species is 81 more than the total of 1030 in the previous *Birds to Watch* (Collar & Andrew 1988), but the differences between the two lists are more interesting than this simple statistic suggests, and are examined by Collar *et al.* in one of the introductory chapters. In the first place, the actual change in species is greater: 214 species have been taken off the list and 295 added to it. Most of the deletions result from improved information, or arise through changes in the structure of the threatened categories (in 1988 species that were poorly known were included in the threatened list but under the new system such species are explicitly classified outside the threatened list as Data Deficient). No species has been removed from the threatened list because its status has genuinely improved. On the other hand, of the species joining the threatened list, 85 are there because of improved information about their status and 10 because their status has genuinely declined. Ninety-three were upgraded from near-threatened, again usually because of improved information. Discounting the differences due to changing definitions or taxonomy, the actual increase is probably about 50, i.e. a little under

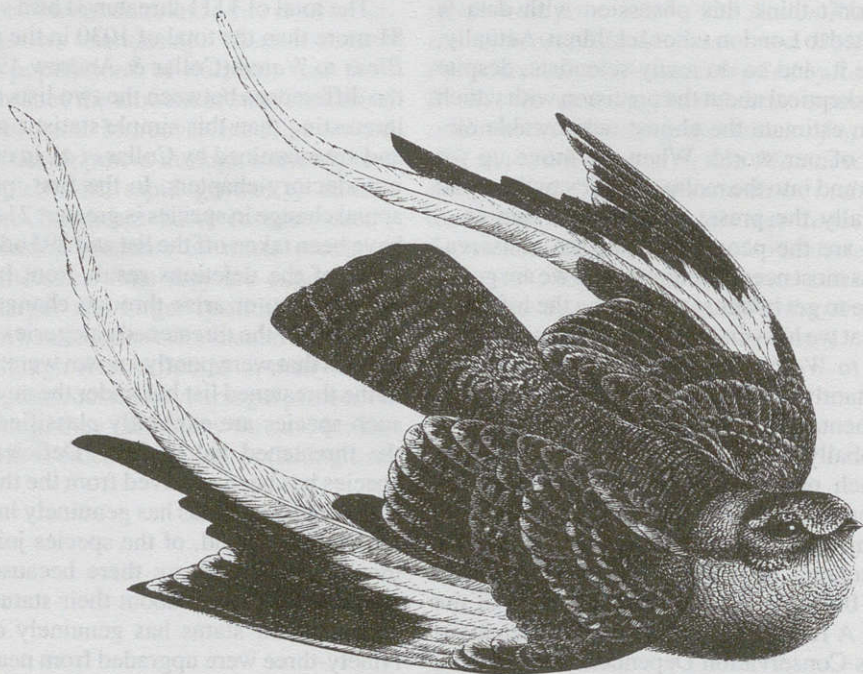
5%. Over a period of six years, this is a substantial net increase.

For SSC, the publication of *Birds to Watch 2* emphasizes some fundamental issues about alternative ways to gather, assess, and publish the data that we have concerning species' conservation status. As Nigel Collar discussed in an earlier letter (*Species* 21-22:132-133, 1994) there are clear advantages in publications such as *Birds to Watch 2* and the *Red Data Books* in that consistency is assured, and that most importantly, the species data is then in a form that can readily be fed in to systems for area-based planning. BirdLife activities in bringing the species data and area priorities together are a model in this regard. However, outside the bird groups, the bodies of expertise that most often compile species' status within SSC are the Specialist Groups, which suffer severe limitations on their time and resources, and which are characterized by more individual approaches in terms of the data they

record, the analyses they undertake and the final interpretations they make. There is little doubt that Specialist Groups can assimilate the necessary data quickly, and, from their more specific standpoint, can generate effective conservation action recommendations. However, to benefit from the value of the assimilated data, and to generate sensible area-based analyses, we need publications like *Birds to Watch 2* for other taxa.

In conclusion, *Birds to Watch 2* is an excellent publication full of useful and documented data, and it provides an important set of summary data for different taxa and geopolitical units. It is a remarkable testament to the energies of the authors and the effectiveness of the BirdLife network that the time elapsed from starting data gathering to publication of the book was little over a year.

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Centres of Plant Diversity A Guide and Strategy for their Conservation

Volume 1. Europe, Africa, South West Asia, and the Middle East.
S.D. Davis, V.H. Heywood, and A.C. Hamilton, 1994, 354 pp., £30.00.
WWF and IUCN. (Two more volumes to follow.) Available from the
IUCN Publications Services Unit, 219 Huntingdon Road, Cambridge
CB3 0DL, United Kingdom.

At last the real issues of plant conservation are being addressed. My feelings on this started with the preface, where Claude Martin, Director General, WWF International, and Martin Holdgate, former Director General of IUCN, signed off in one page on the rationale for modern conservation, placing it firmly in the context of the need for human development—but underlining that our science must be based on the wisdom of local peoples and practices if it is to succeed and be sustainable.

By drawing together so many authors to provide regional overviews and detailed country perspectives, one would inevitably expect some sense of unevenness of treatment. This is not so, and the editors are to be most heartily congratulated that this volume provides a remarkably consistent approach—somebody applied a firm hand or did a lot of rewriting. It was well worth it!

Contributors to all three volumes are identified in this volume, alongside what I suspect will be one of the most heavily used sections of the whole work—the introduction. Here, extremely successfully, Heywood and Davis lay out “The importance of plant diversity;” “The concept of identifying centers of diversity and endemism;” “Determining priority areas for plants;” and “The selection of sites.” There are also tables, arranged by continent or region, and then by country, which give figures for species richness and endemism. The objectives of the Centres of Plant Diversity project are then laid out:

- “to identify which areas around the world, if conserved, would safeguard the greatest number of plant species;

- to document the many benefits, economic and scientific, that conservation of those areas would bring to society and to outline the potential value of each for sustainable development;
- to outline a strategy for the conservation of the areas selected.”

The criteria and methodology used for selecting sites is also clearly defined.

“The criteria adopted for the selection of sites and vegetation types was based principally on a requirement that each must have one or both of the following two characteristics:

- the area is evidently species-rich, even though the number of species present may not be accurately known;
- the area is known to contain a large number of species endemic to it.

The following characteristics were also considered in the selection:

- The site contains an important gene pool of plants of value to humans or that are potentially useful;
- the site contains a diverse range of habitat types;
- the site contains a significant proportion of species adapted to special edaphic conditions;
- the site is threatened or under imminent threat of large-scale devastation.”

The point is clearly made that the three volumes deal only with "first order" sites that are of global botanical importance. These hard decisions will inevitably cause discussion as to why site A over site B or why country A or B was included or left out. Any selection, even using the well defined criteria of this project, will cause national or regional heartache for those species or sites left out, but what is essential for all of us in the conservation movement is to ensure that the diverse sites that are included be secured. They do not and cannot cover all endemic species, or countries, but they do form a well thought-out and logical series of sites, which, if appropriately integrated into local and national planning, can ensure that a very large and diverse number of the world plant species will survive.

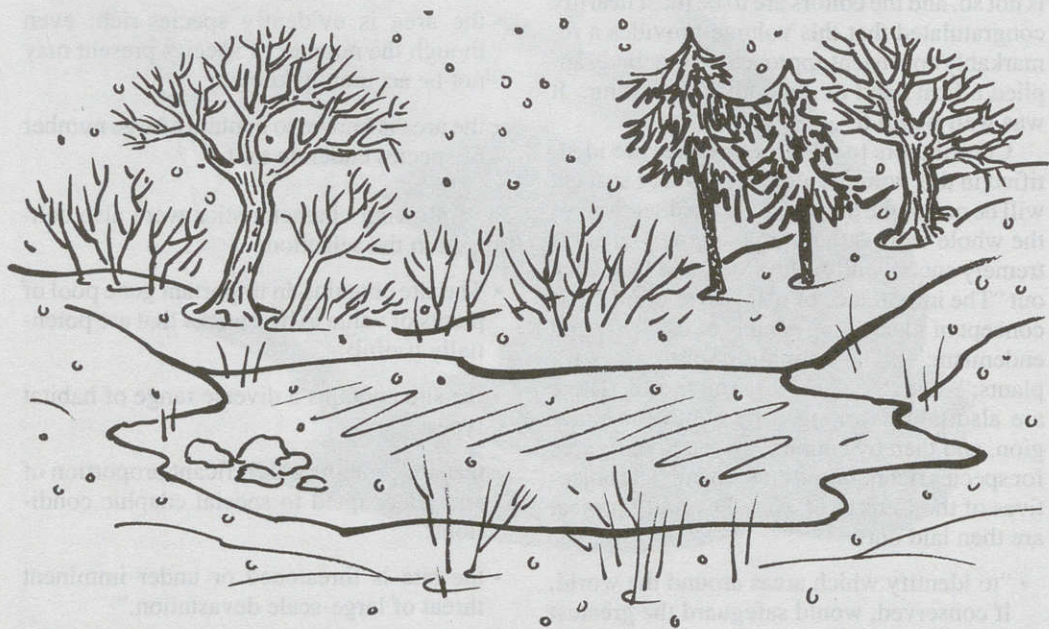
Local data gathering and local conservation projects will hopefully continue to be carried out in every country of the globe as resources are made available, in the first place, to feed, clothe, house, and ensure the well-being of humankind. This volume takes us to the other end of the spectrum: it is that essential key to ensure that on a world and regional scale resources can at last be appropriately focused

to ensure that all these sites receive the necessary attention and support to ensure their permanent protection. No excuse will suffice if any site listed is lost or severely damaged. Then I believe, conservationists will have failed and any talk of an improved understanding of the need to ensure sustainable development and maintenance of all biodiversity by governments and international agencies would be a lie.

This volume carefully, page by page, addresses those areas where we first need to focus large resources. This is an essential first volume for all those who wish to help manage and support the plant kingdom over the next 10 years to ensure its survival for the next 1,000 years—a real tour de force!

Reprinted from PLANT TALK, the first ever magazine devoted to international plant conservation. Issue 1 was published in March 1995. Specimen copies available from P.O. Box 400, Richmond, Surrey TW10 7XJ, U.K.

*Contributed by Gren Lucas
Keeper of the Herbarium
Royal Botanic Gardens, Kew*



Books of Note

Birds in Europe: Their Conservation Status

Tucker, G. M. and Heath, M. F., 1994, 600 pp., £28.00. Available from the Publications Department, BirdLife International, Wellbrook Court, Girton Road, Cambridge CB3 0NA, U.K.

This milestone publication presents the first thorough and detailed review of the conservation status of European birds. Detailed breeding and wintering population information has been collected on all bird species in each European country. Text, accompanied by color maps and tables, provides a review of the population sizes and trends of species of European conservation concern. The major threats to each of these species are discussed and the basic measures that need to be taken to conserve them and their habitats in Europe are indicated.

Important Birds in the Middle East

M.I. Evans (compiler) 1994, 410 pp. £22.50 (shipping: surface £3.50; air £8.00). Available from the Publications Department, BirdLife International Wellbrook Court, Girton Road, Cambridge CB3 0NA, U.K.

Breaking new ground, this is the first book to publish details of the sites—over 300—that are vital for bird conservation in the Middle East, from the Levant and Arabia to Afghanistan. Described for each are the habitats, important species, threats, and conservation issues. It will be an essential tool for decision-makers in the Middle East but will also become an invaluable guide for visiting bird watchers.

Seabirds on Islands: Threats, Case Studies and Action Plans

D. N. Nettleship, J. Burger and M. Gochfeld (eds.) 1994, 318 pp. £21.50 (shipping: surface £3.50; air £8.00). Available from the Publications Department, BirdLife International Wellbrook Court, Girton Road, Cambridge CB3 0NA, U.K.

This volume forms the proceedings of the Seabird Specialist Group Workshop held in New Zealand during the BirdLife/ICBP 1990 World Conference, and contains summaries and analyses by leading workers of problems facing seabirds around the world.

Priority Areas for Threatened Birds in the Neotropics

D. C. Wedge and A. J. Long, 1995, 370 pp. approx., £22.50 (shipping: surface £3.50; air £8.00). Available from the Publications Department, BirdLife International Wellbrook Court, Girton Road, Cambridge CB3 0NA, U.K.

This book presents, both on an area and on a country-by-country basis, the detailed information on sites and their birds which was collected during the compilation of *Threatened Birds of the Americas: the ICBP/IUCN Red Data Book*. The information will thus become more accessible and useful to conservation planners, managers and decision-makers involved in Neotropical conservation issues. This book will help form a framework for any national bird conservation strategies currently being developed in the Neotropics.

Principles and Practice of Plant Conservation

David Given, 1994, 264 pp.
U.S. \$39.95 (shipping: U.S. \$6.50)
£27.50. Available from the Timber Press, 133 SW Second Ave., Suite 450, Portland, OR 97204 U.S.A. or Chapman and Hall, Cheriton House, North Way, Andover, Hants, SP10 5BE, U.K.

Sponsored by the World Conservation Union and the World Wide Fund for Nature, this book presents the first systematic treatment of conservation principles and practices for rare, threatened, or disappearing plant species. Using detailed case studies from all over the world, it provides a comprehensive summary of current information and techniques on sustainable resource management, including short-term and long-term economic implications.

The Elephant in Sri Lanka

J. Jayewardene, 1994, 120 pp.
U.S. \$35.00 (shipping: surface \$6.00, air \$20.00). Available from The Wildlife Heritage Trust, 95 Cotta Road, Colombo 8, Sri Lanka.

The author presents a readable synthesis of the present state of knowledge of almost every aspect of the Sri Lankan elephant. The book traces the historical and cultural role of the elephant, identifies its habitat preferences, describes its diet, behavior, social structure and reproduction biology, methods of capture and domestication, and most importantly, addresses in detail the conservation status of the elephant in Sri Lanka while proposing strategies for improved conservation management.

Widening Perspectives on Biodiversity

Krattiger, A. F., J. A. McNeely, W. H. Lesser, K. R. Miller, Y. St. Hill, and R. Senanayake (eds.), 1994, 473 pp.
Sfr. 45.00, U.S. \$30.00. Available from the International Academy of the Environment, 4 Chemin de Conches, 1231 Geneva, Switzerland.

This book contains contributions from individuals of developing and industrialized countries across the world, active in protecting biodiversity and/or affected by the loss of biodiversity: farmers, government, indigenous peoples, lawyers, scientists, women, special interest groups, diverse NGOs, academia, conservation unions, and many more.

The Action Plan for Australian Reptiles

H. Cogger, E. Cameron, R. Sadlier, and P. Eggler, eds. Europe, North and South America: surface A\$30, air A\$41; Australia A425; elsewhere: surface A\$30, air A\$34. Available from the Australian Nature Conservation Agency, P.O. Box 351, Jamison ACT 2614 Australia.

A landmark document for anyone involved in the conservation of Australia's unique reptiles. Of 765 species, 204 are considered to be of some conservation concern. Fifty-three species have been classified as endangered or vulnerable, requiring action to slow or halt the processes which are threatening their survival. The Action Plan for Australian Reptiles was prepared in consultation with relevant experts and conservation agencies to provide an up-to-date review of the conservation status and needs of our reptilian fauna. The Action Plan provides a species recovery outline for each threatened species, providing information on: former and current distribution; habitat; reasons for decline and current threats; presence in reserves and other lands; recovery plan objectives; management actions underway; management actions required; organizations and individuals involved; approximate costs of recovery action.

1992 International Zoo Yearbook, Vol. 32

P. J. S. Olney, P. Ellis (eds.), 1993, 546 pp., £56, Available from the Zoological Society of London, Regent's Park, London, NW1 4RY, U.K.

This volume has a section of 24 articles on ungulates and ranges widely from follow-up articles on the Arabian oryx reintroduction programs in Saudi Arabia and Oman to reviews of the breeding and management of tapirs and Nile lechwe. Following this section there are a further 14 articles on recent developments in the zoo world, including a behavioral study of the fascinating Jewel wasp, two papers on elephants, and a survey on visitor reaction to the World of Birds at Bronx Zoo/Wildlife Conservation Park in New York. Volume 32 includes 107 pages of vertebrate species bred in collections worldwide in 1991, a 45-page census of rare animals held in collections on January 1, 1992, and an up-to-date list of International Studbooks. This volume also contains a list of current zoo associations worldwide and the biennial directory of zoos and aquaria.

Other new titles by SSC Members

Conservation versus Development

by Dr. Kalyan Chakrabarti
Available from NP Sales PVT LTD.,
206 Bidhan Sarani, Calcutta-700 006,
India.

Conservation and Utilization of the Nile Crocodile in South Africa, Handbook on Crocodile Farming

edited by G.A. Smith and J. Marais.
Available from: The Crocodilian Study Group of Southern Africa, Department of Animal and Wildlife Sciences, Faculty of Biological and Agricultural Sciences, University of Pretoria 0002, South Africa.

New Journals

Chelonian Conservation and Biology

J. L. Behler, P.C.H. Prichard, A. G. J. Rhodin, eds. Contact: Anders G. J. Rodin, Chelonian Research Foundation, 168 Goodrich Street, Lunenburg, MA 01462 U.S.A.

The inaugural issue of *Chelonian Conservation and Biology*, the new scientific Journal of the IUCN/SSC Tortoise and Freshwater Turtle Specialist Group and International Bulletin of Chelonian Research, was published in November, 1993. Manuscripts are welcome from any individual and are not limited to members of the Specialist Group. Manuscripts may cover any aspects of turtle and tortoise research with an emphasis on conservation or biology. Studies of freshwater turtles and tortoises are of primary interest, but articles on marine turtles are also welcome. Manuscripts dealing with conservation biology, systematic relationships, chelonian diversity, geographic distribution, natural history, ecology, reproduction, morphology and natural variation, population status, and human exploitation or conservation management issues are of special interest.

Herpetological Conservation

Stephen Corn, ed. Contact: Stephen Corn, National Biological Survey, 4512 McMurtry Avenue, Fort Collins, CO 80525-3400 U.S.A.

The Society for the Study of Amphibians and Reptiles announces a new publication series, *Herpetological Conservation*, to present information about the preservation and management of amphibians and reptiles. This series will be published about once per year and each issue will concentrate on a single subject. Most often, an issue will consist of a monograph, but proceedings of topical symposia may be considered. Papers submitted for publication should document thoroughly a need for conservation and evaluate and recommend management alternatives.

Specialist Group Reports

African Elephant Specialist Group

Ruth Chunge

The current triennium continues as an active and productive period for the African Elephant Specialist Group (AfESG). While many members were reappointed, several newcomers were added 1994, most of whom are young, dynamic nationals from various range states who are either involved in elephant research or are responsible for elephant management activities. Dr. Holly Dublin was appointed chair of the group, with Dr. Bihini Won wa Musiti as the deputy chair—a slight reorganization of the previous co-chair titles—to reflect their respective roles.

The highlight of the 1994 agenda was the AfESG meeting, in Mombasa, Kenya, on May 27 to June 1. It was attended by individuals from over 20 range states, many of whom presented status reports and gave scientific papers. The two themes of the meeting were human-elephant conflict and the trade and illegal hunting of elephants. These topics of discussion provide constant challenges to the group, and many members are directly involved in finding solutions to issues of conflict, illegal hunting, and poor law enforcement. Issue 19 of *Pachyderm* highlights the recommendations made by the working groups, as well as several of the individual presentations.

In 1994, extensive work went into the WWF/USFWS-sponsored study, coordinated by the AfESG and TRAFFIC, to reassess the impact of the ivory trade ban on illegal hunting and to examine domestic trade legislation in nine range states on the continent. The results from each country, with overall conclusions, are summarized in the report *Four Years After the CITES Ban: Illegal Hunting of Elephants, Ivory Trade, and Stockpiles*, co-authored by Holly Dublin, Tom Milliken, and Richard Barnes.

The revision and updating of the UNEP-based African Elephant Database project was considered a priority by the membership. At the AfESG Mombasa meeting, many members provided updates to the AED consultant. By

the time of the CITES meeting, a preliminary update of the AED had been prepared and several fundamental improvements had been made to the database. The final updated AED will be released during 1995.

Several AfESG members actively participated at both the last CITES meeting and at the EU-sponsored meeting of elephant range states on *The African Elephant in the Context of CITES*, held in Botswana in September 1994. Both meetings stressed the need for more direct discussions between range states on issues relating to African elephant conservation, particularly between anglophone and francophone countries. Key issues are trade, ivory stockpiles, and human-elephant interactions. AfESG efforts toward inter- and intra-regional cooperation, which have not always been easy to implement in practical terms, will undoubtedly benefit from the current plans to open a small office in west/central Africa, with the services of a bilingual program officer. A west/central Africa link will greatly assist in the expansion of technical activities, communication, and networking and improved participation of the AfESG members in fulfilling the group's terms of reference.

In addition to the existing support from the United States Fish and Wildlife Service, the World Wide Fund for Nature, and the Peter Scott IUCN/SSC Action Plan Fund, the AfESG has received substantial support from the European Union and the U.K. Department of Environment. Thanks to this support, the AfESG can confidently talk of funding the new office, holding another meeting in early 1996, and providing small grants for research projects, as well as continuing the important functions of the AfESG secretariat in Nairobi.

Ruth Chunge
Program Officer
African Elephant Specialist Group

Antelope Specialist Group Report

Zhigang Jiang, Zuojian Feng, Zuwang Wang, Liwei Chen, Ping Chai, and Yuongbo Li

Saving the Przewalski's Gazelle

The Historical Distribution

Przewalski's gazelle, *Procapra przewalskii* (Buchner), is a gazelle species found only in central China, where there are regions of steppes, alpine grasslands, and deserts. Przewalski collected the first specimen of the gazelle in southern Ordos and named it as *Antilope gutturosa* in 1875. He later renamed it as *Antilope cuvieri* in 1888. Buchner, in 1891, shot specimens of the gazelles in Lan Shan, Ganshu. Based on the characteristics of horn shape, body size, and habitat, Buchner named the gazelle as *Gazella przewalskii*. Lydekker called the species *Procapra przewalskii* in 1914. Stroganov collected specimens from southern Ordos and southwest Ganshu in 1949. There are six skulls of the species in the Northwest Plateau Institute of Biology, Chinese Academy of Sciences (CAS), Xining, all were collected from Gangcha, Qinghai, in 1973. Some 50 years ago, four specimens were collected from Tianpong, Qinghai. Now the specimens are kept in the Institute of Zoology, CAS, Beijing. American scientists also collected two specimens from the region east of the Qinghai Lake in the late 1980s. The specimen-collecting spots marked the historical distribution of the species.

The Animals

Przewalski's gazelles are small, alert, and fast-moving ungulates. Mature male individuals average 27 kg in body weight, females 23 kg in body weight, about one meter in length. Only males have horns, with the horn points curved inward. The gazelles have black lips, cream-white bellies, and rump patches with distinctive brown tails. The summer coat of the gazelle is reddish brown, and the winter coat is thick and pale fawn. Group size varies from fewer than ten up to sixty. Normally, about ten gazelles form a group. April-May is the rutting

season. Rams roar, challenge, and chase each other in the herd during the reproductive period. However, there is seldom serious fighting. Sometimes, weak rams may be kicked out of the herd, but no single male can dominate a whole herd. Ewes give birth in mid-July, normally to a single lamb. When local herdsman occasionally catch and try to feed a lamb of the species, they always fail to keep the lamb alive for long, for it will not stay with domestic sheep. Up to now, the zoos in the world have never kept the gazelle in captivity, and there is no single scientific report on this species in the literature. Called "moraine yellow sheep" by local people, the gazelles were hunted as game meat in the past. During the early 1960s, thousands of them were killed, local herdsman recalled.

Current Status

Growth of human population threatens the surviving wildlife. After 120 years, since the first recording of the species, distribution of Przewalski's gazelle shrunk to the area around the northern half of Qinghai Lake (36° 23' 37" 15' N, 99° 36' -100° 47' E). The lake, 4,583 km² in area, is the largest salt lake in China. The altitude of the lake drainage area is between 3194-5174 m. Characterized by dry and cold plateau-continental climate, the average temperature in January varies between -12.3° to 14.7° C, and 10.3° to 11.9° C in July. Annual precipitation varies between 290-580 mm. Annual solar radiation is 6289-6397 MJ/m². Typical vegetation in the area are alpine and desert shrubs, alpine grassland, and sedge wetlands. The area used to be a pastoral area shared by yaks (*Bos grunniens*) and Tibetan sheep (*Ovis ariens*). Herdsman and livestock migrate between seasonal ranges.

Now there are only three populations of Przewalski's gazelle on the eastern, northern, and western shore of the Qinghai Lake. In the area, human density increased from about 20,000 in 1949 to 90,000 in 1987. During the

same period, the number of domestic animals increased three-fold from 921,000 sheep-equivalent units—one yak is equivalent to three sheep—while the area of farm lands increased 20 times, from 1,100 ha and industrial output increased more than 300 times, from 20,000 yuans. Besides man-caused reasons, desertification also reduced rangelands shared by both wildlife and domestic animals. The area of sand hills and deserts doubled in the past 50 years. It was reported there were only about 350 Przewalski's gazelles left in the area in 1986 and no chance of gene exchange between the east and northwest populations.

Przewalski's gazelle is one of the endangered wild animals with first-class priority in the Namelist of State Key Protected Wild Animals, announced by the State Council in 1988. It is forbidden to hunt the gazelle, and sacrifice of individuals of the species for scientific research needs approval from the state. However, poaching is still reported, because the gazelles live in remote areas with little law enforcement and there is no reserve for the species. One of us worked as a warden in the Bird Island Protected Zone (36° 59' N, 99° 52' E) on the western shore. Half of the zone are sand hills, more than 10 km² in area, which are used as refuge by the gazelles. Daily census counted 37 gazelles in 1992, but the number was down to 19 during our last survey during the Christmas-New Year period of 1994. Except for two gazelles killed by wolves in 1993, no traces of other wolf killing or dead gazelles were found during the daily surveys. The missing gazelles were believed to be victims of illegal hunting.

On the other side of the lake, there used to be about 100 Przewalski's gazelles in the late 1980s, where they live on the margins of rangeland. As the stock rate of domestic animals increases in their natural habitat, the gazelles have to change their behavior. Spatially, they move into sand hills to seek shelters after feeding. In the desert, there is no human and domestic animal presence, but the gazelles are hunted by hungry wolves. Temporally, the

gazelles change their feeding rhythm from short but frequent feeding bouts to a dusk-dawn biphasic feeding pattern. They graze in early morning and later afternoon. Living space for the gazelles is gradually getting smaller, however, they stay on the site and never migrate to mountains or other regions. Unfortunately, a social event changed their fate. The pastures of a former state-run farm on the eastern shore were divided among the rangers in October 1994. Since the ownership of land is clear, the pastures are fragmented by game fences; wild herbivores were fenced out. Having been stripped of their last foraging site, the 60 to 70 Przewalski's gazelles that live on the eastern shore now have to jump over fences and sneak for food. At the same time, the third population of about 70 to 80 survivors in the Chalatan area on the northern shore is hunted by poachers.

Altogether the total number of Przewalski's gazelles still living in the three populations in the Qinghai Lake area are fewer than 200; they may be the only survivors of the species in the world. We are investigating and assessing the distribution and habitat of the gazelles. We do not know how long the species will exist. It may be gone forever before we understand its evolutionary and genetic backgrounds. However, we are considering all possible means to save the species, including *in situ* captive breeding and *ex situ* conservation. The key issue is the funding for researchers and conservation operations. Considering its habitat and numbers, the Przewalski's gazelle is the most endangered ungulate species in China, probably in the wild.

Zhigang Jiang, Zuojian Feng, Zuwang Wang,
Liwei Chen, Ping Chai, and Yuongbo Li
Antelope Specialist Group

Asian Wild Cattle Specialist Group

Simon Hedges

Activities in the 1990-1993 Period

During this period, Asian Wild Cattle Specialist Group (AWCSG) members were active throughout much of the Asian region. Roberto Escalada served as project officer and veterinarian for the Tamaraw Conservation Program in the Philippines, and Roger Cox and Michael Woodford conducted a technical evaluation of this program in 1990. Theerapat Prayurasiddhi recently conducted a study on banteng in Huai Kha Khaeng in Thailand, and since late 1991 Simon Hedges has been studying the ecology and behavior of banteng and feral water buffalo in east Java. Mangala de Silva, Charles Santiapillai, Sarath Dissanayake, and A.H. Sumanasena were involved in assessing the status of water buffalo in Ruhuna National Park, Sri Lanka, during 1991-1993.

Between 1989 and 1992, group members Roger Cox, Ha Dinh Duc, John MacKinnon, Bouaphanh Phanthavong, Richard Salter, Sivannavong Sawathvong, and Michael Woodford were involved in surveys for kouprey in Vietnam and Laos. Unfortunately, all of the surveys produced either negative or inconclusive results. In 1994, Michael Woodford participated in an aerial survey of kouprey and other wild cattle in Cambodia. The results of this survey, which was led by Robert Olivier and funded by the NWF/IUCN/WWF Collaborative Program on Endangered Species in Southeast Asia, further heightened concerns about the survival of this species (no kouprey were seen). The survey also confirmed that the status of gaur and banteng in Cambodia is a matter for serious concern.

A preliminary Wild Cattle CAMP meeting was held in San Diego in early 1994 by members of the American zoo community and the CBSG, but unfortunately due to a number of factors, not least the expense of attending, the only member of the AWCSG present was Bruce Read. Another Wild Cattle CAMP meeting is being organized and will be held in

Thailand in April or May 1995 where it is hoped that a greater proportion of the specialist group's members will be able to participate.

Reorganization and the Action Plan

The AWCSG is currently involved in a process of reorganization and enlargement, a process from which it hopes to emerge both revitalized and with a clear agenda for the next five years. The publication of *Asian Wild Cattle and Buffaloes: Status Report and An Action Plan for their Conservation, 1995-1999*, which has now been completed by Simon Hedges but awaits final checking, will help the AWCSG focus its activities more effectively in the future.

The Action Plan reviews the various options for the conservation of cattle and buffaloes in Asia, addresses the problems inherent in setting priorities, and discusses the questions raised by feral animals. Attention is also drawn to the threat posed to wild cattle and buffaloes by the trade in wildlife parts—a threat that has often been overlooked in the past. The final section provides the most up-to-date account of the status of the eight species of Asian cattle and buffaloes available, as well as a summary of their taxonomy, distribution, ecology, and behavior, emphasizing those aspects most relevant to their conservation. Each species account also provides a detailed conservation plan, with clearly identified priorities and criteria for assessing the success of the recommended program.

Implementation of the Action Plan will form the main topic for discussion at the proposed AWCSG meeting planned to concur with the Wild Cattle CAMP.

*Simon Hedges, Interim Coordinator
and Action Plan Compiler
Asian Wild Cattle Specialist Group*

Bear Specialist Group

Bernard Peyton

Spectacled Bear Specialist Group

The Spectacled Bear Specialist Group (SBSG) is a subgroup of the Bear Specialist Group (BSG). It had an initial nine years of active leadership and participation (1980-1988) during which time the group distributed 13 editions of its newsletter to 110 members. Among its achievements were the completion of status surveys on the spectacled bear in eastern Venezuela, scattered areas in Colombia, northern Ecuador, all of Peru, and the south half of Bolivia. Ten national parks were established that benefited bears as a result of the efforts of SBSG members. During the past six years the BSG assumed the function of keeping SBSG members informed due to the failure of that group to publish more than one newsletter. With encouragement from IUCN/SSC, the BSG has appointed the former Secretary/Treasurers of the SBSG, Dr. Jeffrey Jorgenson and Amanda Jorgenson, to be the group's co-presidents. Their immediate agenda is to reestablish communication within the group.

During the past four years more than 60 experts have contributed their knowledge to five country reports on the status of the spectacled bear. These reports will be part of a Bear Action Plan being prepared under the leadership of Dr. Steve Herrero and Dr. Chris Servheen (co-chairmen of the BSG). Spectacled bears are doing a lot better in the wild than what is generally reported (only 1,000-1,200 bears left, etc.). Report contributors estimate there are a minimum of 10,000 wild spectacled bears, and the true number could be several times that amount. Unbroken tracts of the Andes stretching more than 100 kilometers and extending over 3000 meters of elevation still exist for this species in the southern third of its range (Peru and Bolivia). Without combining the areas of Venezuelan or Ecuadorian parks, which were recently connected by protected corridors, 14 of the 42 conservation units that contain spectacled bears are over

250,000 hectares in size. During the past two years the Ecuadorian government has established three conservation units with spectacled bears (El Angel Ecological Reserve, Antisana Ecological Reserve, and the National Park of Sumaco-Napo Galeras) and nearly doubled the size of Sanguay National Park to protect the Paute River drainage, an area inhabited by both spectacled bears and woolly tapir. Both Venezuela and Ecuador have managed to put 15% of their national territory under some form of protection. Tony Luscombe (president of ECCO, a conservation NGO in Peru), is working to double the size of Tablaconas-Namballe National Park in northern Peru (established in 1988 with 295 km²) to include an adjacent forest. Augmenting park boundaries, creating limited human use zones in buffer areas surrounding parks (e.g., La Planada, Colombia; Yanachaga-Chemillen, Peru), development of alternative resources or methods of harvest (education, orchid farming, palm oil extraction, strip forestry, pharmaceuticals, tourism) and improved agriculture are all measures SBSG members are involved in to take these parks from paper to functioning institutions for managing resources.

In the future we can expect more cooperative ventures between NGO's and government agencies. The consolidation and decentralization of resource management agencies that occurred in Peru in the late 1980s and is now occurring in Colombia has placed severe strains on those countries to implement management on the ground. For example there is only one park guard for every half million hectares of spectacled bear habitat in Peru and no vehicles for transportation. The situation is worse in Bolivia where there is confusion about where park boundaries are, let alone if bears reside in parks (Pilón-Lajas) or if parks have conservation value for bears (Isoboro-Sécure, Eva-Eva, and Bella Vista; Damian Ignacio Rumiz, pers. comm. 1994). NGO's with SBSG guidance have and will continue to share more of bear

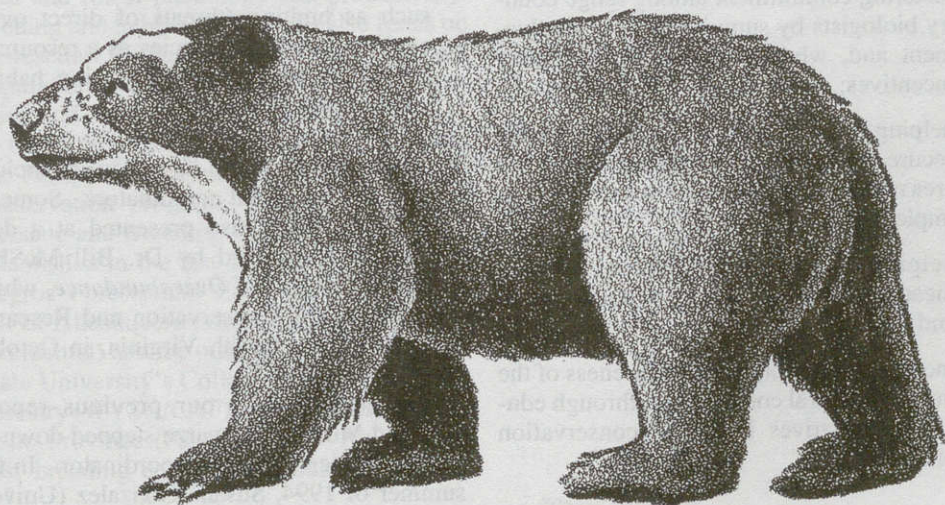
management responsibilities as they are permitted to do so.

These same report contributors revealed that hunting has become as important a factor in bear population decline as habitat destruction. This was not evident 15 years ago. Spectacled bears continue to be hunted in corn fields which are rapidly replacing the bear's natural food sources. The number of parks infiltrated by drug traffickers has tripled in the past 15 years; now comprising half the parks with bears. The hot spots of terrorism and drug trade within the bear's range now include the Sierra de Perijá that forms the border between Colombia and Venezuela, most of the middle Andean Range in Colombia and Peru, and most of the northern half of the bear's range in Bolivia. Political instability has prevented SBSG members to learn about the status of spectacled bears or help manage them in these regions. In the future we expect drug trafficking to increase in the remote foothills of the Oriental Andes (eastern range), particularly with the further development of coca strains that thrive in wetter environments. This will have an adverse impact on spectacled bears where most of them live. International trade in spectacled bear gall bladders has been confirmed in Ecuador and is suspected in Peru. The BSG is very concerned that traders in

bears and bear parts will find increasingly secure environments to conduct their activities in areas controlled by drug traffickers. Recently enacted laws in Peru that allow the government to collect a fee for the transfer of endangered wildlife (spectacled bears included) to captive breeding centers do not prevent the government from profiting from "take" of endangered species, whether intentional or not. Similar laws now compromise spectacled bears in Bolivia. Such take was formerly prevented by both national law as well as international agreements (CITES).

Future plans for the SBSG include hosting a conference in Latin America to review the country reports and implement the action plan. More news about the conference will be forthcoming in a future edition of *Species* and in the next publication of the SBSG newsletter. To receive the newsletter or correspond with the SBSG please contact Dr. Jeffrey and Amanda Jorgenson at the following address: Departamento de Biología, Facultad de Ciencias, Pontificia Universidad Javeriana, Carrera 7 Número 43-82 Edif. 53 Of. 502, Santafé de Bogotá, DC, COLOMBIA; tel: 57-1-288-3788, fax: 57-1-285-0503.

*Bernard Peyton, Member
Bear Specialist Group*



Deer Specialist Group

Christen Wemmer

Significant progress toward completing the Action Plan continued in 1994. In February, Andrew McCarthy (Sheffield City Museum, Sheffield, England) was contracted to review Action Plan species accounts, which were updated with the latest information from correspondents and the literature. Ironically, the discovery of two new species of deer has complicated the task since almost all information has been in the popular media and scientific publications are not yet available. To gain insight into the various formats and approaches that have been used, an intensive review of published action plans was conducted, and as a result the plan's "strategic approach" to implementation was drafted.

As we approach completion of the plan, several important sections have been added, including specification of the target audience and the plan's conservation philosophy, which includes for main considerations:

- facilitating local involvement in plan implementation by training range country nationals in critical skills;
- fostering commitment among range country biologists by supporting their involvement and, when possible, by providing incentives;
- helping range country agencies and NGOs secure resources to strengthen protected area management and reinforce the work of implementors;
- helping local agencies/NGOs develop means for self-sufficiency when possible; and
- increasing environmental awareness of the public and rural communities through education initiatives linked to conservation projects.

Considerable thought has also been devoted to the process of implementing recommendations. Several Action Plan objectives were elaborated, as follows:

- determining the status of poorly known populations using scientifically proven methodology (since the status of most threatened taxa may be classed as "enigmatic," status surveys are a de facto priority);
- developing species conservation priorities within each range country, which will be assigned on a geographic basis at the national level; and
- consideration of three main factors when determining priorities for conservation action: (1) population determinations within and outside of protected areas, including size, age structure, and habitat; (2) adequacy of protection within protected areas, including staffing, infrastructure, proximity and size of adjacent communities, current management, existing protective measures, etc.; (3) the nature of the threats to the population: (a) direct species-specific threats such as hunting (threats of direct over-exploitation of the species as a resource); (b) indirect threats such as grazing, habitat conversion, deforestation, etc.

This section was sent to six reviewers, including the DSG regional coordinators. Some of these issues were also presented at a deer symposium organized by Dr. Bill McShea titled *The Science of Overabundance*, which was held at the Conservation and Research Center in Front Royal, Virginia, in October 1994.

As mentioned in our previous report, Dietland Mueller-Schwarze stepped down as Latin American regional coordinator. In the summer of 1994, Susana Gonzalez (University of Montevideo) was selected as Dr.

Mueller-Schwarze's replacement, and her new post was announced to a segment of the DSG membership at the CBSG's Marsh Deer PHVA in São Paulo, Brazil. Susana is assisted by Mariano Merino and has significantly increased the Latin American membership. Her access to Internet has also allowed rapid communication to DSG headquarters at the Conservation and Research Center.

Modification of the *DSG Newsletter* to a double-column format resulted in a late mailing (in spring 1994), but the improvements will allow future incorporation of black-and-white photographs.

A significant DSG achievement was the initiation of the Thamin Ecology Project in Myanmar's Chatthin Wildlife Sanctuary in November/December 1994. A project team of 12 Wildlife and Sanctuary Division personnel is supporting three M.Sc. projects on this population of threatened Eld's deer (*Cervus eldi thamin*), which at approximately 800 head is the largest free-ranging population in Asia. The project is headed by U Myint Aung, warden of the sanctuary, who is investigating home range, movements, and social organization using radio-telemetry. At the time of writing (January), Drs. Steve Monfort and Bill McShea were in Myanmar assisting in the capture and instrumentation of study animals. Daw Khin Lay Win and Daw Thin Thin Yu are investigating feeding ecology, including grassland and forest phenology and productivity. Feeding and habitat studies will also focus on Shwesettaw Wildlife Sanctuary, where the deer population seems to be suffering from competition and disturbance by livestock.

Good progress continues to be made with the Philippine spotted deer (*Cervus alfredi*) conservation program, with two new local "Rescue and Breeding Centers" having been established in the last 18 months, one at the Negros Forests and Ecological Foundation (NFEF) headquarters in Bacolod City (Negros Occidental) and the other at the West Visayas State University's College of Agriculture and Forestry (WVSU/CAF) campus in Lambunao, Iloilo Province (Panay Island). As with the first breeding center at Silliman University

(Dumaguete City, Negros Oriental), these new centers were established under formal agreements with and between the Mulhouse Zoo (France) and the Department of Environment and Natural Resources (DENR, Government of Philippines). The Bacolod Center is an entirely new development. The Lambunao Center replaces an earlier attempt to initiate such a project at Bitu Farm, which was suspended owing to continued local management problems. The "World Herd" of spotted deer, which was established in May 1990 with 15 (mostly donated) animals, now stands at 47 (24.23), of which 20 are captive-bred. In addition, some of the first Mulhouse Zoo-bred progeny have been sent on breeding loan to the West Berlin Zoo, and it is hoped to place further animals with other participating/supporting institutions in the near future. Other related activities in this program include organization of two local biodiversity conservation workshops; facilitation of the declaration of two new protected areas in the region; fast-tracking of efforts to promote the formal declaration of the Panay Mountains National Park; the production and distribution of tens of thousands of posters in the "Only in the Philippines..." series; and other education materials. The program also includes field surveys and additional research projects and is developing similar conservation recovery programs for a variety of other critically threatened species endemic to the West Visayas faunal region.

Christen Wemmer, Chair
Deer Specialist Group

Insectivore, Tree-Shrew, and Elephant-Shrew Specialist Group

Peter J. Stephenson



Habitat Disturbance Threatens the Tenrecidae of Madagascar

Madagascar has long been identified as an international conservation priority. Most of the attention on species conservation has focused on lemurs, but recent research has brought to light the threats facing the island's small mammal fauna, most especially the Insectivora.

Besides two apparently widespread species of shrew, Madagascar's insectivore fauna comprises endemic species of the Tenrecidae. Precise species richness is unclear due to taxonomic confusion surrounding shrew-tenrecs of the genus *Microgale*, but there are probably more than 26 tenrec species on Madagascar in total. This means they are the second largest group of extant mammals on the island after primates and, as such, a significant component of the country's biodiversity.

Most tenrecs are found in eastern rain forests, but many species are known from only a small number of specimens so limited information is available on species distributions and habitat requirements. The African Insectivore Action Plan advocates extensive surveys to determine the status of Malagasy insectivores. It assumes that many species will be protected by the establishment and effective management of sufficient numbers of nature reserves. However, recent evidence suggests that certain species may be more susceptible than others to habitat disturbance and that in protected areas managers must take account of the often-overlooked insectivore fauna.

A recent study into the small mammal fauna of Analamazaotra Special Reserve in east Madagascar demonstrated that endemic species richness was reduced in habitats disturbed by tree felling or tourist activity. Sites regularly visited by tourists to watch lemurs exhib-

ited the lowest level of insectivore diversity, even though habitat disturbance at these sites was largely restricted to trampling. Ecotourism can have beneficial consequences for local and national economic development, but besides the apparent reduction in insectivore diversity where human activity is greatest, potential impacts include direct interference with wildlife, socio-economic disruption to local communities, and general environmental degradation. Although there are probably few significant detrimental environmental effects of tourism to date, there is a fear that uncontrolled expansion of tourism activity could threaten the integrity of Analamazaotra and other protected areas in Madagascar. The impact of habitat change varies between insectivore species. Small tenrecs of the subfamily Oryzorictinae, such as small shrew-tenrecs (*Microgale spp.*) and fossorial tenrecs (*Oryzorictes hova*), were only trapped in undisturbed forest at Analamazaotra and were assumed to be most vulnerable to disturbance. Indeed, recent records of fossorial tenrecs suggest that some oryzorictine species may be less widespread and more dependent on primary rain forest than previously thought.

The tenrec species identified as conservation priorities in the African Insectivore Action Plan include mostly small *Microgale* species since these are either insufficiently known or have indeterminate status. It now appears that it may be these poorly known species that are at greatest risk from habitat disturbance. The Malagasy species identified as the greatest conservation priority is the aquatic tenrec (*Limnogale mergulus*). This species appears to depend on permanent, clean, fast-flowing water with an abundance of aquatic prey. It must be assumed that deforestation will lead to soil erosion and the silting up of river systems, but no study has yet been con-

ducted into the effects of habitat disturbance on this rare insectivore. Local extirpation of aquatic species such as *Limnogale* can be more serious since they generally find it more difficult to recolonize areas, especially if they are eradicated from entire river systems.

Conclusions

Although areas of rain forest in Madagascar may appear to be effectively conserving species when large mammals such as lemurs are present, even relatively minor anthropogenic disturbance may cause subtle habitat changes that affect insectivore distributions and cause local reductions in biodiversity. There is urgent need to implement the recommendations of the African Insectivore Action Plan and conduct extensive surveys to determine species distributions and habitat requirements throughout eastern rain forests. Studies should concentrate on small species of terrestrial and fossorial oryzorictine, as well as the aquatic tenrec.

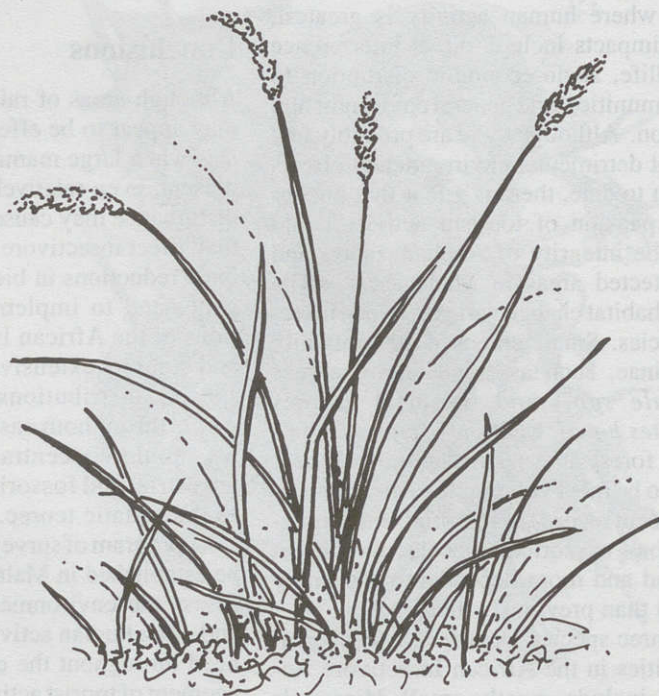
A program of survey and monitoring should be established in Malagasy protected areas to assess the environmental impact of tourism and other human activities. There is a general need throughout the country for active management of tourist activity and the provision of interpretive information reserves.

Core areas of rain forest reserves should be left undisturbed to safeguard a sufficient diversity of habitats. This should ensure the long-term conservation of the insectivore fauna and maintain biodiversity within this diverse ecosystem.

*Peter J. Stephenson, Member
Insectivore, Tree-Shrew, and
Elephant-Shrew Specialist Group*

Lagomorph Specialist Group

Andrew T. Smith



The Last Pikas and the Last Steppes in Europe

Nikolai Formozov and two of his students, Sergei Lukyanov and Oleg Ermakov, conducted a thorough status survey of the dwarf pika, *Ochotona pusilla*. Supported by the Peter Scott IUCN/SSC Action Plan Fund, they attempted to locate the form throughout its supposed geographic range and identify areas that could be set aside for its protection. They filed the following report:

"Our project focused on that forgotten representative of the European fauna, the dwarf pika (*O. pusilla*). This diminutive relative of the hare inhabits the dense steppe brush.

Unlike the hare, the dwarf pika is amazingly vociferous. On quiet nights, its bird-like songs can be heard for a mile or more. Yet in the 200 years since its discovery, the dwarf pika has been all but ignored by naturalists; most lists of European species leave it out.

The history of the dwarf pika—among contemporary mammals—is the longest documented history of extinction. Since the end of the Ice Age when this species spanned Europe, from England to the Urals, the dwarf pika's range has shrunk steadily. At the beginning of the Holocene, dwarf pikas were still found in Hungary, in the 10th century in Ukraine, in the 18th century

between the Don and the Volga, but by the 19th century, they lived only east of the Volga. Our research shows that several small populations of the dwarf pika still exist on the easternmost edge of the European continent, in Russia's Saratov region. The loss of the dwarf pika's range is due in part to nature (the global change in climate between the Pleistocene and Holocene) and in part to man (overgrazing, steppe fires, and insularization of habitats due to total ploughing).

Our goal is to preserve the dwarf pika—which constitutes a separate genus and family of fauna—in Europe. We plan to reintroduce the dwarf pika in isolated areas where it has disappeared, protect its current habitats from fire, and organize several pika sanctuaries. Pikas are an excellent indicator of the state of steppe ecosystems which have disappeared almost entirely in Europe. The gullies in which they dwell, because of their relief, are often the last islands of unploughed steppe. In addition to dwarf pikas, a whole complex of rare European steppe species (Bobac marmots, Corsac foxes, steppe eagles, demoiselle cranes, ruddy shelducks, booted warblers, red-headed buntings, two species of ground squirrels, three species of harriers) inhabit these gullies. We plan to create a register of the steppe "islands" (east of the Volga) and their inhabitants, thus to help preserve both the dwarf pika and these last fragments of the steppe ecosystem on the continent of Europe."

Nikolai Formozov was invited to present the results of this project at this year's Ford European Conservation Awards. He shared the first and second award in this competition with a mutual Polish-Ukrainian team in the Natural Environment Projects category.

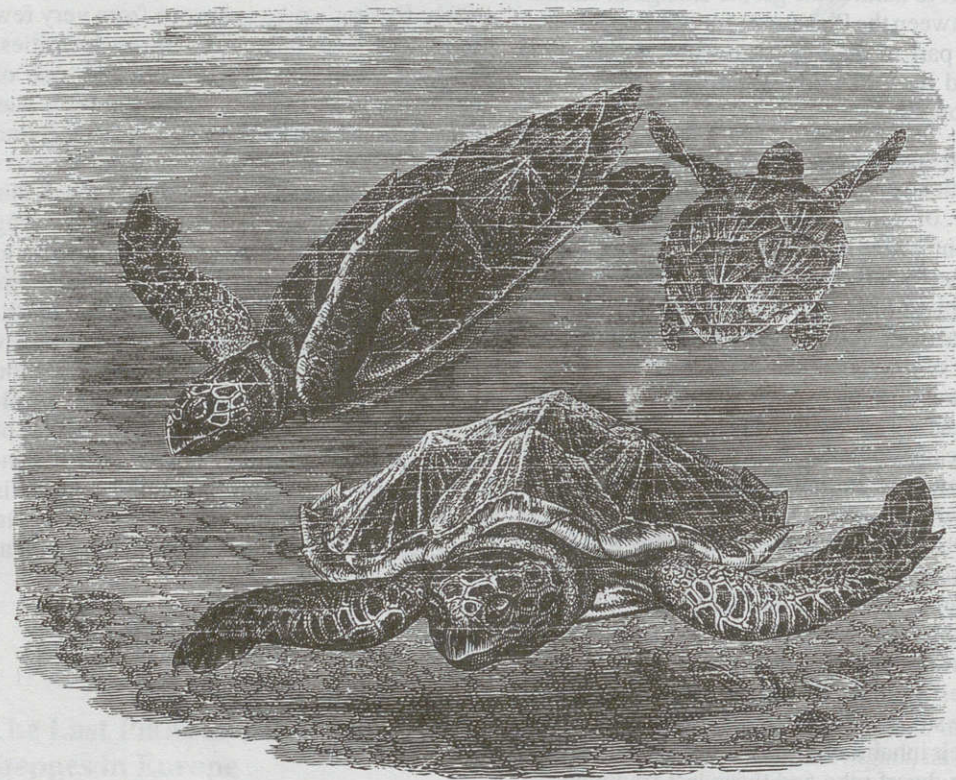
The Status of Koslov's Pika

Nikolai Formozov, funded by the MacArthur Foundation and the International Science Foundation, investigated the current status of the enigmatic Koslov's pika (*Ochotona koslowi*) in the central Kun-Lun Mountains of the People's Republic of China during summer 1994. Koslov's pika is known from very few specimens and only from three localities. Formozov was allowed to visit only one of these localities, the site where the form was discovered by Przewalski in 1884 and found again by Chinese investigators about 10 years ago. An American expedition visited this locality in 1989 and failed to find any living Koslov's pikas. Similarly, Formozov failed to find any of this form at the site. Instead, it was apparently replaced by the common black-lipped pika (*Ochotona curzoniae*). Formozov determined that the Pasture Control Station from the nearby Karly City regularly exterminates pikas in the vicinity of the type locality of Koslov's pika. Probably this activity has influenced the distribution and abundance of this rare and vulnerable form and allowed for it to be replaced by the common black-lipped pika.

Andrew T. Smith, Chair
Lagomorph Specialist Group

Marine Turtle Specialist Group

Karen Bjorndal and George H. Balazs



The Marine Turtle Specialist Group (MTSG) has been heavily engaged in a number of challenging activities critical to reversing worldwide trends of declining sea turtle populations. Fortunately, the ability to accomplish these tasks has been strengthened considerably by our expanded and robust membership of dedicated individuals. A grant facilitated by the Center for Marine Conservation has also been pivotal by providing the funds to sponsor Marydele Donnelly as our full-time MTSG program officer. Since coming aboard, Ms. Donnelley has been constantly hard at work in close coordination with the MTSG Executive

Committee on issues which include the development of a global sea turtle conservation strategy, changes in CITES criteria, new and immediate human threats to sea turtle survival (such as Orissa, India), fund raising, and producing a periodic MTSG Bulletin to enhance membership communication. The MTSG wants to sincerely thank an anonymous donor, along with the Center for Marine Conservation, for supplying the generous grant to give us the needed power to work effectively on behalf of sea turtle conservation.

During June 1994, the Executive Committee and ten additional MTSG members repre-

senting all world regions met in Puerto Vallarta, Mexico, to develop a long-term, sound plan to conserve the world's sea turtles. The resulting draft document, entitled *A Global Strategy for the Conservation of Marine Turtles*, is currently being reviewed and improved upon by the entire membership under the coordination of our program officer and will complement the MTSG *Action Plan for Marine Turtles*.

Japan has recently taken significant steps on behalf of sea turtle conservation. In July 1994, following years of considering the social, economic, and biological implications, Japan formally withdrew its CITES reservation on the hawksbill turtle. The hawksbill has been the source of tortoise shell (known as bekke) used to fashion jewelry and artistic objects of considerable commercial value. One million hawksbills were taken globally for this trade, according to some estimates. The MTSG, along with several other organizations, played an influential role in bringing about this reasoned decision by Japan to withdraw its reservation. For example, for the past five years, MTSG members have significantly participated in annual meetings to inform, educate, and exchange information with the Japan Bekko Association.

Efforts to raise Japan's public awareness of sea turtles and their special biological features (and constraints) have been advanced considerably by a new book entitled *Is the Sea Turtle Declining? Its Conservation and Future*. The book is written in Japanese and suitable for both young and adult readers. MTSG members Naoki Kamezaki, Kazuo Horikoshi, and Hiroyuki Suganuma are to be congratulated for their prominent involvement in producing this valuable book. This book, in combination with ingenious, educational sea turtle displays, such as at the Port of Nagoya Aquarium (directed by MTSG member Dr. Itaru Uchida), provide superb models for expanding awareness programs.

Two of our members have recently been recognized internationally for their outstanding accomplishments relating to sea turtles. Henri Reichart, senior advisor to the Suriname Forest Service, received the Order of the Golden Ark Award from the Prince of Holland. Karen Eckert, executive director of the Wider Caribbean Sea Turtle Conservation Network, received the United Nations Environment Program Global 500 Award.

It is with deep regret that we report the passing of Leo Brongersma, one of our founding MTSG members. Expressions of sincere sympathy are extended to family members.

The 1995 campaign Year of the Sea Turtle in the Pacific has gotten off to a vigorous start with coordination by the South Pacific Regional Environmental Program based in Apia, Western Samoa. Numerous grass-roots educational and informational activities are being implemented throughout the Pacific Islands to promote conservation understanding and research of sea turtles. It is hoped that additional campaigns will be developed in forthcoming years for Year of the Sea Turtle celebrations in other global regions. The SPREP effort, created with assistance from several MTSG members, represents an excellent model that can be followed by others.

Karen A. Bjorndal, Chair
George H. Balazs, Deputy Chair
Marine Turtle Specialist Group

Odonata Specialist Group

Norman W. Moore

Work continues on the Dragonfly Action Plan and on the creation of a conservation database for Odonata. A feasibility trial on data retrieval is in progress, and the results will be discussed at the next meeting of the group, which will be at Essen, Germany, in August 1995.

Following the symposium of the Societas Internationalis Odonatologica (S.I.O.) at Osaka, Japan, an International Symposium on the Conservation of Dragonflies and their Habitats was held at Kushiro, Hokkaido, Japan, August 13-15, 1993. It was attended by four members of the Odonata Specialist Group. The proceedings of the symposium were edited by Philip S. Corbet, Sidney W. Dunkle, and Hidenori Ubukata. They were published by the Japanese Society for Preservation of Birds and appeared in January 1995. The proceedings include papers by Sidney W. Dunkle, Michael J. Samways, Eberhard Schmidt, and J.A.L. Watson, who are all members of the Odonata Specialist Group, and a preface and message from Norman W. Moore, its chairman.

The proceedings are well illustrated with color photographs of dragonflies and habitats. They give support to the protection of the Kushiro Marshes, which are of great importance for the conservation of birds and other organisms, as well as dragonflies. Congratulations and thanks are due to Dr. Hidenori Ubukata for organizing the symposium and the publication of the proceedings.

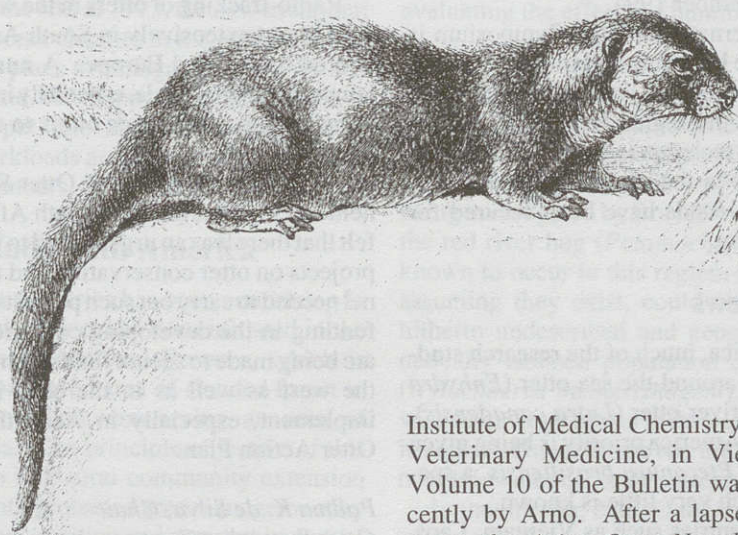
Shortly after the symposia in Japan, the Odonata Specialist Group suffered a great loss through the death of its Australian representative, J.A.L. Watson. He was the leading odonatist in his country and had more outstanding contributions to the study of odonate taxonomy and biology in Australia. His book, written with G. Theischinger and H.M. Abbey, *The Australian Dragonflies: A Guide to the Identification, Distribution, and Habitats of Australian Odonata*, was published in 1991 and was a landmark in Australian odonatology. Tony Watson did much for the conservation of dragonflies in his own country and was a most helpful and valued member of the Odonata Specialist Group. He will be greatly missed.

Dr. Richard J. Rowe of James Cook University, Townsville, Australia, has kindly agreed to take Tony Watson's place in the group. Dr. Rowe's book, *The Dragonflies of New Zealand*, is an outstanding contribution to odonatology. The group has also been joined by Dr. Jan van Tol. He is the author, with Dr. M.J. Verdonk, of the Council of Europe's important publication, *The Protection of Dragonflies (Odonata) and their Biotopes*. He will cover Indonesia and now has a leading role in creating the Odonata database.

Norman Moore, Chair
Odonata Specialist Group

Otter Specialist Group

Padma K. de Silva



I was appointed chairperson of the Otter Specialist Group (OSG) for the 1994-1996 triennium following the resignation of Pat Foster-Turley, who took up office as the coordinator of the U.S. Asian Environment Program, based in Washington, D.C. Thirty-two members from 20 countries were appointed to the OSG, with Claus Reuther having the dual role as deputy chairman and coordinator for Europe. Paul Polechla, Gonzalo Medina, and Dave Rowe-Rowe continue as the coordinators for North America, South America, and Africa respectively, while Jim Estes serves as the coordinator for sea otter conservation. Ainul Hussain is the coordinator for Asia.

Otter News

The annual *Otter Specialist Group Bulletin*, which was edited earlier by Dave Rowe-Rowe, is now being produced by Arno Gutleb at the

Institute of Medical Chemistry, University of Veterinary Medicine, in Vienna, Austria. Volume 10 of the Bulletin was produced recently by Arno. After a lapse of about two years, the *Asian Otter Newsletter* has been revived.

Conferences

In April 1994, the First Symposium on Otters in Indonesia was held in Bogor, West Java, with the collaboration of the Indonesian Directorate General of Forest Protection and Nature Conservation (PHPA) and the Asian Wetland Bureau (AWB) Indonesia. The symposium was well-attended by otter specialists from various regions in the archipelago and turned out to be a great success. The most significant outcome of the symposium was a commitment from the Ministry of Forestry to enact legislation to protect otters in Indonesia.

The European section of the OSG had a seminar at the Otter Park Aqua Lutra in Leeuwarden, the Netherlands, in June 1994. Several important recommendations were made during the general discussion, the most important being the need to conserve Eastern Europe's rich biological diversity, to give top priority

for the protection of the existing wetland habitats, and to allocate considerable funds for overall nature conservation in those countries where information on otters is still scanty or wanting.

A special symposium on river otters was held during the First Conference of the Wildlife Society in Albuquerque, New Mexico, U.S.A. in September 1994.

The 7th International Otter Symposium is scheduled to be held in Brazil in 1996, and the Asian section of the OSG too plans to convene a workshop in the region mainly to demonstrate research techniques such as the use of radio-telemetry in the study of otters. However, so far no funds have been secured for such a workshop.

Research News

In North America, much of the research studies is centered around the sea otter (*Enhydra lutris*) and the river otter (*Lutra canadensis*), while in South America priority is being given to the study of *Pteronura brasiliensis*, a species about which very little is known.

In Asian countries such as Vietnam, Laos, Cambodia, the Philippines, and Myanmar (Burma), there has been very little recent information available on the status of otters. Therefore, there is an urgent need to carry out basic research in these countries to assess the status of the otters. Radio-tracking of otters in the wild has been carried out successfully in India, while in Thailand extensive studies were done

on the niche separation of the three sympatric species of otter with the assistance of the Royal Forest Department. In Indonesia, studies were mainly on the determination of the range and distribution of the otters in West Java. An attempt is being made to study the ecology of all of the species of otters inhabiting Singapore and Malaysia.

Radio-tracking of otters in the wild is being carried out extensively in South America, the United States, and Europe. A number of attempts have been made, especially in the United Kingdom, to reintroduce otters to their native habitat.

At the 6th International Otter Symposium held in Pietermaritzburg, South Africa, it was felt that there was an urgent need to identify the projects on otter conservation and the personnel needed to carry out such projects on modest funding in the developing countries. Efforts are being made to secure funds from sources in the west as well as in the east, in order to implement, especially in Asia, the IUCN's Otter Action Plan.

Padma K. de Silva, Chair
Otter Specialist Group

Pigs and Peccaries Specialist Group

William L. R. Oliver

Following the publication of the group's Action Plan at the end of 1993, the new triennium ushered in some changes in the group's membership, but plans to amalgamate the Pigs and Peccaries and the Hippo Specialist Groups have been put into abeyance owing to the existing workloads and commitments of most relevant members.

Central and South America

Research on peccaries has been continuing in Peru. A new project has been initiated in the Pacaya-Samiria National Reserve, which is the largest protected area of flooded forest in the Amazon basin, conserving an area of 2,080,000 ha. The principle objective of this project is to link rural community extension programs with protected area management by setting up conservation and community extension programs for the management of palm and wildlife resources within the buffer zone of the Pacaya-Samiria National Reserve. The project is headed by the group's co-regional coordinator, Dr. Richard Bodmer, and sponsored by the Nature Conservancy, the University of Florida, and the Fundación Peruana para la Conservación de la Naturaleza. The wildlife section of this project incorporates substantial research on both white-lipped (*Tayassu pecari*) and collared (*T. tajacu*) peccaries. This research is studying both the feeding and reproductive ecology of the peccaries in floodplain forests and how their populations are affected by hunting.

The peccary section of the group will meet during the 2nd International Conference on Wildlife Management in Amazonia (May 7-12 in Iquitos, Peru). This will give group members an opportunity to exchange recent information and evaluate the progress of peccary management in Amazonia. Directly after the congress, there will be a wildlife management field course, which will include tuition for students from various Amazonian countries on

measuring peccary population densities and evaluating the effects of hunting pressure.

Africa

Reports of an as yet unidentified "large, black pig" from the (now threatened) floodplain forests in the upper half of the Niger Delta are being investigated by Bruce Powell. Although the red river hog (*Potamochoerus porcus*) is known to occur in this region, these animals, assuming they exist, could also represent a hitherto undescribed and geographically/genetically isolated population of forest hogs (*Hylochoerus meinertzhageni*), which otherwise has a large hiatus in its west to east range in central Africa. However, this species is also now known to occur in extreme east Nigeria.

In the interim, data on the distribution and status of the confirmed but as yet also undescribed forest hog populations in south and central Ethiopia are being collected by the group's regional coordinator, Dr. Jean-Pierre d'Huart, and E. Yohannes of Addis Ababa University. Findings to date indicate that this species' range is (now?) highly fragmented but that it occurs in at least several provinces. However, this range is also divided into two distinct subpopulations, which are separated by the Rift Valley. Unfortunately, parallel efforts to secure hunter-killed skulls and other taxonomic materials for identification purposes have been unsuccessful to date. Further information on the distribution and status of the desert warthog (*Phacochoerus aethiopicus delamerei*) in neighboring parts of Somalia and Kenya (where the presence of this species was confirmed for the first time in 1993—by the collection of three skulls) is also being collected by Dr. d'Huart, while a comparative investigation of the genetics of *P. aethiopicus* and the far more widespread and abundant common warthog (*P. africanus*) is also now underway by Dr. Ettore Randi (Turin) and Dr. Rashid Aman (Nairobi).

Copies of the group's Action Plan were sent out to most of the African Wildlife Management authorities and concerned individuals, largely by courtesy of the SSC. Funds for the production of a conservation-education poster featuring the six recognized species of African suids (i.e., to include North African races of the Eurasian wild pig *Sus scrofa*) have been raised through a number of zoos in the United States via the Pigs and Peccaries Taxon Advisory Group of the AZA. This poster, which will be produced in at least two languages, will be the third in a series of such posters being produced by the group.

South and Southeast Asia

In October 1994, 4,500 copies of a high-quality conservation-education poster featuring all seven species (and three of the c. nine subspecies) of wild pigs endemic to southeast Asia was produced and it was subsequently distributed free of charge by the relevant, principal various governmental agencies and NGOs in Malaysia, Singapore, Indonesia, Brunei, and the Philippines. The production of this poster, which was produced in four text language versions (Bahasa Malaysian, Indonesian, Tagalog, and English), was funded by the Zoologischer Garten Berlin and shipped to the distributing agencies by British Airways' "Assisting Conservation Program."

A preliminary field status survey of the endemic subspecies of babirusa (*Babyrousa babyrussa togeanensis*) and Sulawesi warty pigs (*Sus celebensis*) in the Togian Islands was conducted in early 1994 by group member Paul Vercammen. Field signs and reports from local people indicate that the latter species remains relatively widely distributed and is still common in some areas but that babirusa may now survive on only four islands, as follows: Malenge (numbers low, but partly protected), Talataco (believed secure as long as extensive forest cover remains intact), Togian (also relatively secure, but coconut cultivation has replaced much former forest), and Patudoka (present but threatened by commercial logging).

Further evidence of the continuing illegal trade in the skulls of mainland babirusa (*B. b. celebensis*) was obtained by Roland Melisch (University of Hohenheim University, Stutt-

gart) during a survey of souvenir shops in the tourist area of Tana Toraja, south-central Sulawesi, in late 1993. Of the 22 shops visited, six (27%) were offering for sale skulls of (mostly) adult males (with an average of 3.5 skulls per shop). Most of these skulls were reported by sales staff to have been acquired recently (i.e., purchased from hunters within the previous few months), though all such staff denied knowledge of the species' protected status and, hence, the illegal nature of this trade.

Following several years of concerted effort, a conservation Action Plan for the pygmy hog (*Sus salvanius*) has finally been agreed upon and formally ratified by the signing (on February 16, 1995) of an "International Conservation Management and Research Agreement" between the Indian Central Government (Ministry of Environment and Forests), Assam State Government (State Forest Department), Jersey Wildlife Preservation Trust, and the Pigs and Peccaries Specialist Group. This plan, which will involve field status surveys, behavioral-ecology studies, formulation of habitat/protected area management plans, captive breeding, conservation-education projects, and a variety of related activities, will be conducted largely by group member Dr. Goutam Narayan, who will work in close collaboration with the Wildlife Division of the Assam Forest Department, the Wildlife and Nature Trust (WANT), and Guwahati State University.

To no small extent, the realization of this project must also constitute a tribute to the late Gerald Durrell, to whom the Pigs and Peccaries Specialist Group owes a tremendous debt of gratitude. The Jersey Wildlife Preservation Trust, and Gerald Durrell in particular, provided invaluable support to the group from its inception in 1980 to the publication of our Action Plan, which Gerry also enriched with a typically enlightening and splendidly entertaining preface. We are delighted that this support is to continue with the pygmy hog project but deeply saddened by the loss of Gerald Durrell's unique and inspirational leadership, humanity, and humor.

William L. R. Oliver, Chair
Pigs and Peccaries Specialist Group

Tapir Specialist Group

Sharon Matola

Prime Habitat for the Central American Tapir, *Tapirus bairdii*, in Belize, Central America

Little is known about the ecology of the Central American tapir, *Tapirus bairdii*, because few detailed field studies have been carried out. Researchers have noted that the animal's mostly nocturnal activity, combined with its shyness and secretive behavior in dense tropical forests, makes it difficult to study in the wild.

However, an area in Belize provides much sought-after flood-plain vegetation for tapirs to eat, including wild cane, herbs, and vines. The area's vegetation is due to its ecological profile of being in a continuous successional forest community, affected by seasonal floods and high winds, as well as periodic hurricanes.

Known in Belize as the Upper Raspaculo River, this area provides an optimum habitat for the tapir, given the availability of the animal's preferred foods, as well as the absence of any hunting pressures.

Our group documented tapir tracks and exact locations of tapir sightings on a 1:50,000 topographical map. Every beach we looked at had tapir tracks.

In six days, between December 16-21, 1994, nine tapirs were observed. Six were observed during the day, and three were observed from a canoe at night by using headlamps.

Tapir dung was collected and later washed and sifted to search for seeds or seed particles. However, in 100% of each dung sample looked at, the only vegetation remains were that of wild cane, *Gymnerium* sp.

This undisturbed wildland represents some of the last unspoiled habitat in Central America where tapirs are found in healthy populations. Due to preferred food availability, combined with its remote location and protected status, the Upper Raspaculo River provides a potential area to undertake a long-term ecology study about this endangered species.

Tapir Specialist Group member Ignacio J. March has published a comprehensive paper about the current status of the Central American tapir, *Tapirus bairdii*, in Mexico. Copies are available (in Spanish only) from the chairperson, Sharon Matola, P.O. Box 1787, Belize City, Belize. Please enclose U.S. \$5.00 to cover foreign postal rates.

Sharon Matola, Chair
Tapir Specialist Group

Carnivorous Plant Specialist Group

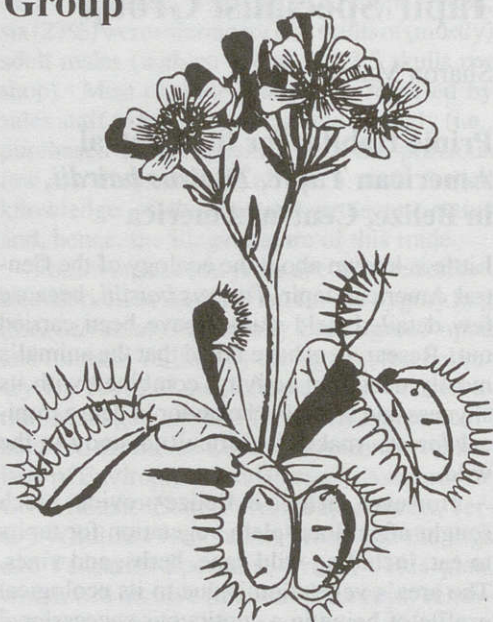
Rosemary Simpson

Carnivorous plants, or insectivorous plants, as they are often known, represent over 500 species encompassing some seven plant families: *Byblidaceae*, *Cephalotaceae*, *Droseraceae*, *Dioncophyllaceae*, *Lentibulariaceae*, *Nepenthaceae*, and *Sarraceniaceae*. Included in this group are species such as the sundews (*Drosera*) and bladder traps (*Utricularia*), which occur worldwide. However, some, like the Venus flytrap (*Dionaea muscipula*) and the trumpet pitchers of *Sarracenia*, have a very limited range and are confined to North America, while others such as the monkey pots of the genus *Nepenthes* occur mainly in southeast Asia.

Carnivorous plants are unique in that their leaves have evolved specialized trapping mechanisms capable of catching and digesting small insects. Trapping mechanisms vary considerably, ranging from the spring steel-hinged leaves of the Venus flytrap to the sticky pads of the sundews and the elaborate pitfall traps of the various types of pitcher plants. It is for these specialist features that carnivorous plants are renowned and collected items. Generally, carnivorous plants colonize nutrient-deficient habitats, so the supplementary benefits of nutrition derived from external sources such as insects are essential to their survival.

Unfortunately, carnivorous plants are under increasing pressures from habitat destruction and collection from the wild for trade. It is hoped that the Carnivorous Plant Specialist Group (CPSG) will be able to address these issues and assist towards the conservation and sustainability of carnivorous plants.

The CPSG was first established in 1987 by Professor G.L. Lucas (Royal Botanic Gardens, Kew). It then comprised six members, with Martin Cheek (RBG Kew) initially as a convenor and later as chair in 1990. In 1994, Martin handed over the reins of the group to Bertrand von Arx. The first meeting took place on June 3, 1994, at the Royal Botanic Gardens, Kew, to establish the way. Present



were new chair Bertrand von Arx, Madeleine Groves, Mike Read (Flora and Fauna Preservation Society), Martin Cheek, and Rosemary Simpson. The main topics discussed were the organization and expansion of the CPSG, communication between members, and the production of an Action Plan for carnivorous plants. Production of a newsletter, establishment of mailing lists, and possible bibliographies were also highlighted.

Carnivorous Plant Specialist Group News, the first issue of the group's newsletter, was produced in 1994 and distributed as part of the membership-recruitment campaign. It is intended that this newsletter be a medium through which topics can be raised and communicated throughout the CPSG and other interested parties. In the first issue, the purpose, role, and responsibilities of the CPSG were presented. These are listed below.

Purpose of the CPSG

The purpose of the CPSG is to bring together people with specialist knowledge in areas such as taxonomy, distribution, ecology, trade, etc.,

including threats to existing populations in the wild and trade on national and international levels to facilitate and coordinate action leading to conservation.

Role and Responsibilities of the CPSG

- Review the conservation status of carnivorous plants
- Prioritize research needs and requirements
- Promote the implementation of research, conservation, and management programs
- Publicize the status and conservation needs of carnivorous plants through newsletters, scientific papers, and meetings
- Develop conservation strategies, an Action Plan, and projects to be carried out by appropriate organizations.

Presently there are 20 members spread throughout the world, and we are currently in the process of looking at projects through which the CPSG can pool its resources. The second issue of *Carnivorous Plant Specialist Group News* discusses topics to be included in the Action Plan for carnivorous plants. These draft topics, which have yet to be agreed upon by the CPSG, include:

- An inventory of current and past projects
- A catalog of threats
- Estimation of the present area covered by plants worldwide
- Estimation of the extent of habitat loss
- Estimation of the extend of habitat restoration
- Protection in the wild and levels of protection
- The Ramsar Convention and how this relates to carnivorous plants
- Trade and the effects of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)
- Propagation programs
- Education
- Eco-tourism

Already some of the ground work for an Action Plan has been carried out. During 1992-1993, Madeleine Groves carried out a project on *Sarracenia* conservation based at the Atlanta Botanical Garden, Atlanta, United States. In addition, the *Pitchers in Trade* report published in 1994 by the Royal Botanic Gardens, Kew, presents a review of three genera—*Sarracenia*, *Darlingtonia*, and *Heliamphora*—and both projects form the basis upon which the Action Plan can be established.

As this is a young and very recently established SSC group, comments and advice are welcome from any of the older and longer-established plant and animal groups and anyone interested in joining our group. The CPSG looks forward to hearing your views. You can forward communications to any of the following contacts:

Chair: Bertrand von Arx, Conservatoire et Jardin botaniques de la Ville de Genève, C.P. 60, CH-1292 Chambésy, Switzerland. Phone: 41 22 732 6969; fax: 41 22 738 4597; e-mail: von_Arx@cjb.unige.ch. Bertrand is CITES plant officer for Switzerland and based at CJBG, Geneva, where he also coordinates conservation projects.

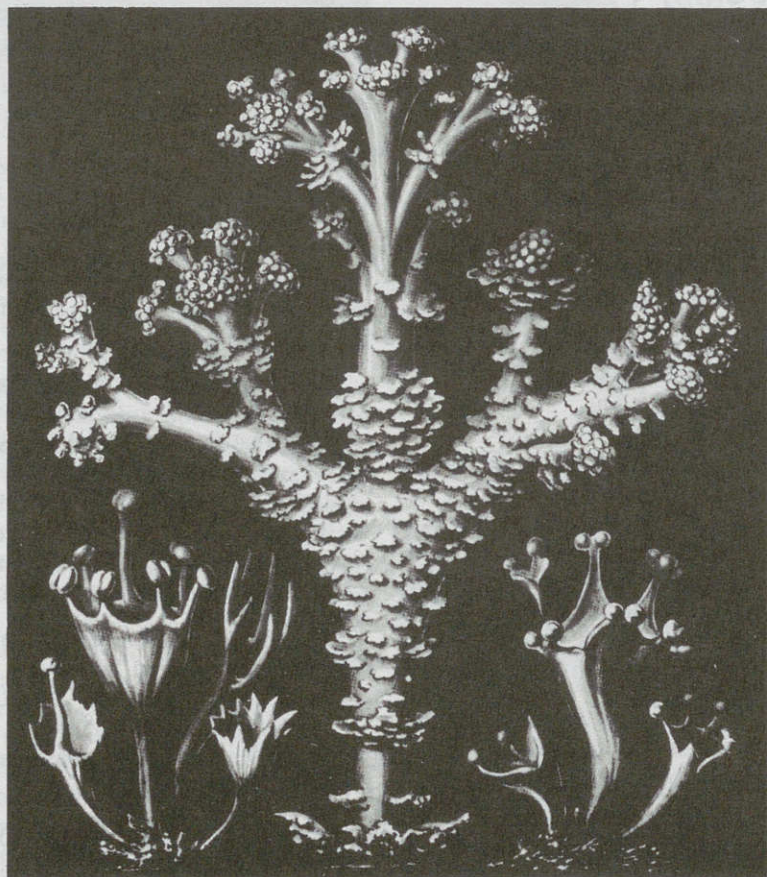
Secretariat: Madeleine Groves, Fauna & Flora Preservation Society, 1 Kensington Gore, London, UK SW7 2AR, U.K. Phone: 44 71 823 8899; fax: 44 71 823 9690. Madeleine is a botanist based at FFPS, and she is coordinating the group.

Newsletter Editor: Rosemary Simpson, Conventions and Policy Section, Herbarium, Royal Botanic Gardens, Kew, Richmond, Surrey TW9 3AB, U.K. Phone: 41 81 332 5723; fax: 44 81 332 5278; e-mail: R.Simpson@rbgkcw.org.uk. Rosemary Simpson is also a botanist who works with the U.K. CITES Scientific Authority for Plants.

*Rosemary Simpson, Newsletter Editor
Carnivorous Plant Specialist Group*

Lichen Specialist Group

Goran Thor and Pat Wolseley



Changes in the environment have caused alterations in the lichen vegetation in many parts of the world. Impacts such as forestry, agriculture, air pollution, urbanization, and tourism are threats to many lichen-rich habitats. It is evident that many lichens have become rarer or even extinct but without attracting the same attention as large mammals and birds. However, significant developments both at national and international levels, are now occurring. There are special problems to be overcome when conservation of lichens is concerned

(e.g., macrolichens have rarely been successfully resynthesized). Progress has been made in culturing lichens under natural or near-natural, non-sterile conditions, but the situation is not like that for vascular plants that are readily grown in botanical gardens. Many lichens are found only in very special habitats and/or are easily affected by changes in the environment. Sensitive lichens are therefore frequently used as monitors of air pollution and as indicators of threatened habitats (e.g., old-growth forests with a long continuity in the

tree layer). For threatened lichens that are negatively affected by air pollution, it is not enough to save the localities and habitats in which they occur if there are high levels of air pollution in the area. These circumstances, as well as the often poor dispersal capability, the small size of most lichens, and the unknown levels of gene flow, must be taken into account when making management decisions about rare and threatened lichens. Many sites of importance for lichens have received protection almost incidentally when nature reserves or national parks have been established for species like birds or vascular plants, but many areas with threatened, unique lichens and lichen habitats fall outside other biological categories and are still unprotected.

The IAL Committee for Conservation of Lichens (ICCL) was set up during the second IAL (International Association for Lichenology) symposium in Sweden in 1992. The committee became an SSC specialist group in 1994 and now includes ten members from Australia, Israel, Japan, South Africa, Spain, Switzerland, the United Kingdom, and the United States.

The committee has drawn up a constitution and policy document that was distributed to all IAL members (about 440 persons) in November 1993 together with a questionnaire. The questionnaire included questions designed to find out the status of lichens and their habitats on a global scale. It was devised to cover all possible combinations of information, as it was just as important to identify those areas where there is little or no extant knowledge on lichens. The response from lichenologists from all over the world was overwhelming, with about 68 replies from 42 countries. The information from the questionnaires was compiled and presented by Goran Thor and Pat Wolseley at the Fifth International Mycological Congress in Vancouver 1994 at a contributed symposium, *Lichens: A Strategy for*

Conservation. A proposal for an action plan for conservation of lichens compiled by Clifford Smith was also discussed, and four other lichenologists presented results on threatened lichens. The presentations at this symposium will be published in a special volume of the journal *Mitteilungen der Eidgenössischen Forschungsanstalt für Wald, Schnee, und Landschaft* and copies distributed to all respondents to the questionnaire.

The result from the questionnaire clearly showed that the information about lichens varies considerably in different parts of the world and that we, especially in the tropical parts, still have incomplete or meager knowledge. In Europe, where the lichens are well known, new species are continuously being described. It seems likely that several of the still undescribed species are threatened, and it is of course difficult to protect lichens about which nothing is known. Problems are the small number of lichenologists worldwide and the great imbalance between numbers of lichenologists in the northern and southern hemispheres. However, compared with some other organisms, there is already a considerable body of data available on the lichens.

A future project of the committee includes compilation of a global red data list and a European red data list. Red data lists for lichens have been compiled on a national basis in a number of countries, but few lists cross national boundaries. There is an urgent need for more international red data lists for lichens. Regular contacts have also been made with the SSC Bryophyte Specialist Group, since our problems are similar, and we hope to arrange a joint meeting between the two groups.

Goran Thor, Chair
Pat Wolseley, Secretary
Lichen Specialist Group

Medicinal Plant Specialist Group

A. B. Cunningham and Uwe Schippmann

Status of the Group

In May 1994, the SSC Plant Conservation Subcommittee recommended that a Medicinal Plant Specialist Group (MPSG) should be formed in response to rising concerns from many independent experts about plant conservation issues relating to medicinal plants. Following this meeting, Tony Cunningham and Uwe Schippmann were appointed Co-Chairs of the MPSG. By December 1994, in a first phase of recruitment, more than 30 members have been invited to join the group. Members were selected on the basis of strategic geographic location, professional interest, and their role as people who could network within their regions.

The group is still in its formative stage. A draft concept and working program was prepared in May 1994 and sent out to all prospective members. Substantial comments were received from Sarah Laird, Danna Leaman, Sonia Lagos-Witte, Christine Leon, Nina Marshall, and Vinay Tandon and have been incorporated. The authors are most grateful for these contributions.

The MPSG has not yet met, but its program and working concept will be discussed at its first meeting which should be before the end of 1995, perhaps in conjunction with the Botanic Gardens Conservation International (BGCI) congress in Perth in September. Details about the group and developments in medicinal plant conservation will be given in the MPSG Newsletter which will be issued on a regular, probably biannual basis. The first issue is in preparation and will serve to keep the members of the group, as well as a much broader interest group, informed about issues relating to the conservation of medicinal plants.

The Problem

Herbal medicines are used by a high proportion of rural and urban people in developing

countries for their symbolic and medical value. There is also a renewed interest in industrialized countries in traditional medicinal plants as a source of chemical leads for new pharmaceuticals. Harvesting of medicinal plants, whether for export, sale or local use is highly species specific. For many species, harvesting from wild plant populations focuses on a decreasing area of natural vegetation as a habitat is cleared for agricultural development, afforestation of grasslands for timber plantations or through urban-associated development. Species loss through this process has global implications. Its most immediate and earliest effect is the loss of self-sufficiency of the rural people using these species.

Despite immense public interest in medicinal plants and development of guidelines for conservation of medicinal plants, coordinated international action for conservation and sustainable harvesting programs for medicinal plants has been limited.

Although this has to be mainly done in the framework of national programs, it is clear that there is also an international aspect to the problem. In the case of international trade in medicinal plants, an unsustainable level is reached much more rapidly than in local utilization. Preliminary surveys have revealed that the international medicinal plant trade in Europe is predominantly in wild collected plants and that these uses are not sustainable in most cases. Europe, and especially Germany, has shown to be the major importer of medicinal and aromatic plants worldwide.

The Focus

Medicinal plants have a conservation profile in three main areas:

1. As natural resources for health care;
2. As taxa in the focus of biodiversity prospecting for active ingredients, generally with subsequent synthesis or semi-synthesis; and

3. As vulnerable species for which demand exceeds supply from wild populations.

In each of these aspects, a different concept of threat is inherent: In (1), many people are concerned that traditional knowledge is often vanishing and threatened; in (2), it is the property rights of primary users that are questioned or under threat, in (3) it is the conservation issue *sensu strictu* where the physical survival of valuable plant taxa may be at stake. It is clear, however, that all three levels are intertwined. For instance, conservation of threatened species can be promoted by adding a value to natural resources through the revitalization of local health traditions provided they contain the element of sustainability.

The Medicinal Plant Specialist Group (MPSG) will be concentrating its efforts on this third category, where the greatest conservation threat is faced by high demand for slow growing, slow reproducing, habitat-specific species. At the same time the MPSG will promote the need to deal with threats to medicinal plants at an early stage rather than focusing purely on taxa that are already in decline.

The biodiversity prospecting debate needs to be recognized by the MPSG as an issue in which conservation aspects need to be further developed. This includes the important issue of benefit sharing through commercialization of natural resources as an incentive for habitat conservation infrastructure in order to protect medicinal plant populations in source countries. The MPSG is will placed to raise awareness of the link between medicinal plant conservation and biodiversity prospecting and facilitate links with other groups (such as the IUCN Ethics Working Group) which are concentrating on those issues beyond the focus on medicinal plants.

The Role of the MPSG

As an international body, the MPSG will have the following general objectives:

- identify threatened taxa and the highest priority regions for urgent action for medicinal plant conservation;
- identify common causes, solutions, and research survey methods for medicinal plant conservation;
- promote the rational and sustainable utilization of medicinal plants;
- assist other groups and authorities to design and implement their own programs;
- motivate the creation of national and regional groups and coordinate actions with the existing networks of medicinal plant conservation;
- raise awareness in the public especially in source countries for the need of medicinal plant conservation;
- form an effective network of individuals and organizations active in medicinal plant conservation.

The MPSG would not carry out field projects under its own auspices. Instead, it will be catalytic through provision of background information and methods for national and regional organizations to implement medicinal plant conservation measures.

The major task for the MPSG will be to make a general assessment of the situation, define objectives, set priorities of medicinal plant conservation, and draw up an Action Plan with both taxonomic and geographic focus. The Action Plan will review the conservation needs of taxa and recommend conservation action sufficient to ensure the long-term survival of these species. Action planning is the best means for the MPSG to play its role as advisory and catalytic committee for other bodies. As a first step, it is proposed to draw up national reports which review existing information on medicinal plants in local, regional, and international trade and short-list species for special attention.

Any material and news on the conservation of medicinal plants would be gratefully received. Contact address: Dr. Uwe Schippmann, Bundesamt für Naturschutz, Konstantinstrasse 110, D-53179 Bonn, Germany.

A. B. Cunningham, Co-chair
Uwe Schippmann, Co-chair
Medicinal Plant Specialist Group

Invasive Species Specialist Group

Mick Clout

Background

The Invasive Species Specialist Group (ISSG) was established in 1993 as one of the disciplinary (as opposed to taxonomic) specialist groups of the Species Survival Commission.

The mixing of faunas and floras caused by people carrying species across biogeographical boundaries has, along with habitat destruction, been a major cause of extinctions throughout the world in the past few hundred years. Many of these extinctions have gone unrecorded and unlamented, but there is now a growing awareness of the continuing scale of this problem for conservation.

The newly-formed group is starting on the daunting task of addressing these problems. Its mission is to reduce the threats posed by invasive species to natural ecosystems and the native species which they contain, through increasing awareness of invasive species and means of controlling or eradicating them.

Because of the vast scope and interdisciplinary nature of the subject of invasive species, it is important that the activities of the ISSG are well-focused in areas of special need. It is therefore being structured into a series of subgroups on particular topics, each with its own coordinator. Subgroups are eventually envisaged on terrestrial weeds, water weeds, terrestrial vertebrates, invertebrates, fish, marine invasives, microorganisms, genetically modified organisms, and on the international agreements and laws controlling invasives. The group maintains a special overall focus on the particular threats which invasive species pose to oceanic islands, which are important (and highly vulnerable) repositories of global biological diversity.

The group concentrates on reducing or preventing the adverse effects of alien invasions on conservation values and does not get side-

tracked into activities which do not contribute to these objectives. It also avoids duplicating existing initiatives within other specialist groups.

Membership

ISSG membership has more than doubled since 1993 to a current total of 43 members. The chairman is based in New Zealand and there are members in Europe, North America, Africa, Galápagos, Seychelles, Australia, New Zealand, and Hawaii. Further active members are still being sought, especially among people with special expertise, time and energy, who might be candidates for coordinating subgroups within the ISSG.

Publications

A current awareness service on invasive species has been started, in the form of a newsletter style publication (*Aliens*). It consists of reports, news and updates on invasive species problems or control successes, and reviews of particular topics. Over 1,000 copies of the first 1995 issue have been produced and widely circulated to ISSG members, all other specialist groups, and conservation organizations worldwide. Sponsorship is being sought to fund future issues.

Other possible initiatives by the ISSG in the longer term include the production of technical bulletins on invasive species management and smaller information pamphlets, addressing particular invasive species problems at the local or regional level and aimed at informing and educating the general public.

Invasive Species Database

Another planned project is the creation of a global database of invasive species. This will be a computerized global listing of invasive

species known to significantly threaten conservation values, along with their biological characteristics, history, distribution, habitat associations, and methods used for control. The database will be designed for use as a predictive tool, to help identify natural ecosystems at risk from invasives and to manage these threats. Its purpose will be to provide information and practical assistance to conservation managers and policy makers. To this end, it will also contain a list of key experts on particular species or groups of invasives.

The database will be built in modular fashion, incorporating existing sets of information, as funds and contributing personnel permit. It may take some years to become fully comprehensive, but it will be useful to conservation practitioners well before then. Creation and management of the database will rely on obtaining funding to support it. Dependent on such funding (for computer hardware, software, and administration) the ISSG hopes to establish a preliminary version by the end of 1996.

Workshop Meetings

In addition to the information projects, the ISSG has also identified the need for a series of small, focused workshops or conferences on particular issues concerning invasive species and their management. "Invasion ecology" is a growing subdiscipline within ecology and there have been several recent meetings on this general subject. ISSG workshops would focus less on theoretical aspects and would be designed to produce tangible outcomes, such as publications designed for dissemination to conservation practitioners worldwide. Possible topics include: controlling the spread of invasives, sustaining conservation values in the presence of invasives, and managing invasive threats to island ecosystems.

Any of the above meetings would of course require sponsorship money for them to proceed.

A workshop meeting on the subject of "Biological Invasions as a Global Change" was held in August 1994 at Aspen Colorado (coordinated by the Aspen Global Change Insti-

tute), and several members of the ISSG attended. This meeting addressed some perennial theoretical questions about invasive species (e.g., "what makes a good invader?"), but also endorsed the need for a global database of invasive species and started the drafting of a "model law" to control the international spread of invasives.

Resources

The University of Auckland has kindly provided an office and basic logistic support for the group at its Tamaki Campus. Current staff of the ISSG consist of a part-time secretary (Alison Bliss) and the newsletter editor (Sarah Lowe). Start-up funds have been granted from the Peter Scott IUCN/SSC Action Plan Fund. Further support is currently being sought to allow the group to embark on other initiatives identified above.

Acknowledgments

The ISSG has benefitted greatly from the active interest shown in its development by the SSC Chair (Dr. George Rabb) and staff. Special thanks go to Wendy Strahm, who is the main contact for the group at IUCN HQ, and is herself an acknowledged expert on invasive plants.

*Mick Clout, Chair
Invasive Species Specialist Group*

Sustainable Use Specialist Group

Marshall M. Murphree

During 1994 IUCN's approach to sustainable use changed significantly. Following the General Assembly (Buenos Aires, January 1994) and the mandate of Resolution 19.54 (Sustainability of Nonconsumptive and Consumptive Uses of Wild Species) the Director General and Chairman of the SSC established a task force of specialists from around the world to advise them on the approach, goals and objectives of IUCN's work in regards to sustainable use. Based on the recommendations of the Task Force, an Advisory Group was established to oversee the work of both the Secretariat and Sustainable Use Specialist Group (SUSG). The Advisory Group includes John Robinson (Wildlife Conservation Society, U.S.A.), as the chair, myself as the Chair of the SUSG and David Brackett (Canadian Wildlife Service). George Rabb will serve as an *Ex Officio* member. More members will be appointed to provide broader representation as regional SUSG chairs are appointed. The Program staff along with IUCN Regional and Country office staff now function to provide secretariat support to the Specialist Group network. Together, the old technical program and the Specialist Group are now called the IUCN/SSC Sustainable Use Initiative (SUI).

The primary objective of the SUI during this triennium is to encourage the growth of Sustainable Use Special Groups in the regions. This investment in institutionalizing the Specialist Groups in the regions will enable specialists to have broader participation and an active voice on sustainable use issues. A more detailed description of the Initiative is provided below.

Goals

- To distinguish uses of wild species that are ecologically and socially beneficial.
- To assist IUCN members and others to support and augment conditions that opti-

mize benefits to both ecosystems and people when wild species are used.

To achieve these goals, the Initiative will:

- Improve understanding of the factors that contribute to the sustainability of uses of renewable natural resources.
- Promote that understanding to IUCN members, decision makers, and others.
- Assist in the application of that understanding as a conservation strategy.

Strategic Approach

The Initiative addresses the sustainable use of forests, fish, and other wildlife resources in marine, freshwater and terrestrial systems. It is implemented through three components: (1) An *Advisory Group*, responsible for general oversight of the Initiative; (2) A regionalized *Specialist Group*, of volunteer professionals in sustainable use; and (3) A *Secretariat*, providing regional and global support and coordination.

The SUSG is the principal means for undertaking activities in the Initiative. Membership is interdisciplinary, including biologists, resource managers, social scientists, economists, lawyers, and political scientists. Decisions and actions are decentralized with each regional specialist group deciding its membership, activities and priorities. Global coordination of SUSG activities is guided by a Steering Committee comprised of specialist group chairs appointed in each region.

Regional support and coordination of the specialist groups is provided by IUCN regional offices or partner institutions. Staff assist in launching the regional specialist groups and provide needed administrative support. Global support and coordination is provided by staff located at the IUCN office in Washington, D.C. Technical support from other IUCN programs is coordinated by a support team at headquarters.

Procedures

Based on language and cultural affinities as many as 19 regional specialist groups could be developed under the Sustainable Use Initiative. The Initiative is being implemented in a phased manner:

Preparatory planning: consultation with staff and specialists in each region to explain the goals and approach of SUI and to seek advice on how to start the Initiative in the region. A preliminary list of members is prepared.

Information exchange: An information package and list of prospective members is sent to regional contacts; local interest and capacity is assessed.

Regional preparations: The list of prospective members is reviewed and augmented. Procedures to mail invitation letters and application forms to prospective members is developed. Regional focal points and prospective leaders are identified.

Appoint initial membership: Invitation letters are mailed.

Secretariat consultation: The SUI coordinator facilitates a meeting with regional focal points, other staff and specialists to: define regional limits, agree procedures for inter-regional coordination, identify links with other activities or projects, identify potential SUSG activities, assess funding requirements, agree on procedures to fund raise, and review and agree on regional coordinator's role and responsibilities.

Specialist group organization: A specialist group leadership meeting is held to agree on regional objectives, prepare a work plan, schedule a regional meeting, and agree on procedures to recruit essential expertise not represented in the initial membership. When fully implemented, the SUI will also comprise a limited number of working groups on global issues like international trade in wildlife and natural resource economics.

Priority Regions

Arctic Circumpolar, Central America, Europe, Southern Africa, West Africa, Southeast Asia, East Africa, North America, and South America.

Outputs/Products

Over the next two years it is anticipated that the Sustainable Use Initiative will produce:

- Regionalized and decentralized sustainable use specialist groups with interdisciplinary memberships.
- A capacity to respond to regional and local issues regarding sustainable use of renewable natural resources.
- Reports summarizing the status of sustainable use activities in six region.
- A structure and process to identify basic principles of sustainable use of renewable natural resources that relies on local and regional contributions.
- A state-of-the-art publication covering the technical aspects of sustainable use of renewable natural resources covering such topics as: survey techniques, monitoring procedures, adaptive management, usufruct rights, legal requirements.
- An interim report to the next IUCN General Assembly summarizing basic principles to be considered in sustainable use of renewable natural resources, derived from the synthesis of regional contributions.

Colleagues from around the world have expressed keen interest in being a part of the Specialist Group network. I and my colleagues at IUCN are looking forward to supporting active participation by specialists in the regions. If you have any questions about the SUI please address your questions to either myself or the global support team, headed by Dr. Steve Edwards (IUCN Washington Office 1400 16th Street, NW Washington, D.C. 20036. Fax: 202 797 5461; Tel: 202 797 5454).

*Marshall M. Murphree
Director of the Center for Applied Social
Sciences, University of Zimbabwe*

Veterinary Specialist Group

Linda Munson and Michael Woodford

Disease Monitoring and Disease Research Priorities for Free-ranging and Captive-bred Wildlife

Disease monitoring and veterinary management should be integral components of action planning. For *in situ* conservation, early recognition and, where possible, prediction of disease events, are essential to determining whether intervention is feasible to avert a steep population decline, which may lead to extinction. At present, the impact of disease on wild populations can be assessed only with difficulty because no centralized reporting system for most wildlife diseases exists. It is unfortunate that the very species that require the most intensive veterinary management are often the ones we know least about.

As habitat constraints isolate and concentrate wildlife populations, the risk of the establishment and spread of significant disease agents within the population increases. The impact of disease on *in situ* conservation efforts may also increase as a result of reintroductions or translocations. These strategies may expose the indigenous wildlife to new variants of pathogens or parasites, and the captive-bred stock may be immunologically naive to many potential pathogenic organisms in the new environment. Strict quarantine, preventive veterinary programs, and constant disease monitoring will be required to avert post-reintroduction disasters.

Species in critical status may also require periodic *in situ* veterinary management to ensure population survival. If such animals carry vital genes for disease resistance, then temporary veterinary intervention to avert threatened extinction should not interfere with long-term evolutionary trends in disease resistance. In very small populations, we cannot afford the luxury of sacrificing the individual just to ensure that the continued evolution of disease resistance is not temporarily interrupted.

Captive propagation programs will also experience limited success if the general and reproductive health of the animals cannot be assured and longevity extended through well-designed preventive veterinary programs. For most taxa, knowledge of diseases has been confined to those that cause death. However, subclinical conditions can have a major impact on reproductive function or general vitality. The development of such programs requires knowledge of which diseases affect which species. Lack of information on species susceptibility to infectious diseases and on species-specific diseases is the most important constraint on developing these programs for many animals. Insufficient knowledge of genetic diseases also constrains the possibility of eliminating these conditions from captive populations by selective breeding.

The formation of a centralized disease-reporting system for all animals undergoing captive propagation for eventual release should be a top priority for the various specialist groups of the SSC and the taxonomic advisory groups (TAG). The foundation of an effective disease-reporting system should include data from complete necropsy examinations and veterinary records and not just "cause of death." For an individual animal, the reported "cause of death" is only the most significant condition affecting the animal that led to its demise and often does not reflect the spectrum of other diseases that may be present. While information on all diseases will be necessary to calculate disease incidence and prevalence in captive populations, it must be remembered that disease patterns that occur in wild species in captivity are often a very unreliable guide for the situation in the field.

Because infectious diseases can present a great threat to existing populations of some species, e.g., the Cape hunting dog (*Lycaon pictus*), the short-term objective of the veterinary advisors to the various action plans should

be to determine the geographic range and species spectrum of the common infectious diseases. Species-specific diseases that may signify a genetic predisposition should also be determined because the prevalence of these will increase in populations with few founders and will present a significant threat to the survival of these populations. In order to develop optimal systems for species especially threatened by disease, the present emphasis should concentrate on the elucidation of the disease problems of these species.

The identification of the important infectious diseases of wildlife on a global scale is being undertaken by two agencies. The first of these is the Office International des Epizooties (OIE) in Paris, which has recently set up an *ad hoc* working group of international wildlife veterinarians who will advise OIE on the collection and publication of worldwide data on the incidence and prevalence of wildlife diseases. This new initiative will complement the long-standing activities of OIE in the field of domestic livestock disease reporting. A worldwide register of diagnostic laboratories prepared to examine wildlife pathological specimens is also being established. The second agency is the Veterinary Group of the Species Survival Commission of IUCN, which is carrying out a within-SSC survey of the diseases thought by the various taxon specialist group members to threaten, at population level, their taxon of specialist interest.

Research Priorities

1. To develop a disease-monitoring network for those species judged to be critically threatened by infectious or contagious disease.
2. To acquire infectious disease serology and ecto- and endo-parasite data from wildlife whenever free-ranging wild animals are handled for whatever purpose and record the information in a central disease databank. Serum banks should also be established so that retrospective analyses can be made when needed.
3. To provide both retrospective and prospective disease information to a central wildlife disease database.
4. To initiate systematic collection of tissues from all critically threatened wild species that die (both captive and free-ranging) for histopathology and genetic studies.
5. To assign veterinary and veterinary pathology advisors to all TAG and SSC specialist groups that develop Action Plans for species judged to be threatened by disease.
6. To report outbreaks of serious wildlife disease through the OIE reporting network.

Recommendations for Disease Monitoring of Free-ranging Wildlife

Continuous serological and parasite-load screening for transmissible diseases in free-ranging populations provides invaluable baseline data for predicting changes in disease patterns and for early warning of dangerous epizootics. Serum should be obtained whenever an immobilization procedure takes place. If possible, all sera should be evaluated in an approved reference laboratory and the results reported to a central databank. For example, Dr. Linda Munson will maintain the central Canid Infectious Disease Serology Databank. Data submitted to this databank will be used to alert conservationists of disease trends and the threat of an epizootic in wild canid populations. This data will not be used for publication without authorization from the submitting scientists. Other infectious disease serology databanks will be established as specific disease threats to other species are identified.

It is hoped that in the near future an up-to-date guide on postmortem procedures for wildlife veterinarians and field biologists will be published, in order to standardize necropsy techniques and the collection, preservation, and transportation of pathological specimens.

*Michael Woodford, Chair
Linda Munson, Member
Veterinary Specialist Group*

Calendar

Meetings

- Meeting of Crocodile Specialists of Latin America, in conjunction with the Fifth Workshop on the Conservation and Management of the Broad-snouted Caiman, May 18-20, 1995, Santa Fe, Argentina. Contact: Alejandro Larriera, Proyecto Yacaré, Convenio INTA/MAGIC MUPIN, BV. Pellegrini 3100, (3000) Santa Fe, Argentina, Fax 54 42 62352.
- International Congress of Chelonian Conservation, July 6-10, 1995, Gonfaron, France. Contact: SOPTOM-CONGRES, B.p. 24, 83590 Gonfaron, France.
- Symposium on The Role of Marine Mammals in the Ecosystem, September 6-8, 1995, Dartmouth, Nova Scotia, Canada. Contact: Tissa Amaratunga, Northwest Atlantic Fisheries Organization, P.O. Box 638, Dartmouth, Nova Scotia, B2Y 3Y9 Canada, Fax 902 469 5729.
- Tenth International Conference on Bear Research and Management, July 16-20, 1995, Fairbanks, AK, U.S.A.; and September 11-14, 1995, Mora Sweden. Contact: Harry Reynolds, Alaska Department of Fish and Game, 1300 College Rd., Fairbanks, AK 99701-1599 U.S.A., Fax 907 452 4610; or Anders Bjarvall, Statens Naturvårdsverk, S-171 85 Solna, Sweden, Fax 46 8 799 1402.
- PERDIX VII International Symposium on Partridges, Quails, and Pheasants in the Western Palearctic and Nearctic, October 9-13, 1995, Dourdan, Essonne, France. Contact: Dr. Marcel Birkan, Secrétariat PERDIX VII, ONC, B.P. 236, 75822 Paris Cedex, France.
- International SI/MAB Symposium "Measuring and Monitoring Forest Biological Diversity: The International Network of Biodiversity Plots," May 23-25, 1995, Washington, DC, U.S.A. Contact: Smithsonian/MAB 1995 Forest Plot Symposium, Smithsonian Institution, 1100 Jefferson Drive, SW, Suite 3123, Washington, DC 20560 U.S.A., Fax 202 786 2557.
- Tenth International Bat Research Conference, Twenty-fifth North American Symposium on Bat Research, August 6-11, 1995, Boston, MA, U.S.A. Contact: Tenth International Bat Research Conference, Department of Biology, Boston University, Boston, MA 02215, U.S.A.
- Second International Congress on Wildlife Management in the Amazon, May 7-11, 1995, Iquitos, Peru. Contact: Coordinator Internacional del Congreso, Tropical Conservation and Development Program, Latin American Studies, University of Florida, 304 Grinter Hall, P.O. Box 115531, Gainesville, FL, 32611 U.S.A., Fax 904 392 0085.

Please send notices of forthcoming meetings to: Mariano Gimenez Dixon, IUCN, Rue de Mauverney 28, CH-1196, Gland, Switzerland.

In order to maintain an effective SSC communications network, we need your submissions and updates for *Species*. Submissions for *Species* 24 are due June 30, 1995. Correspondence and address corrections should be addressed to:

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