



PARKS FOR LIFE

Protected Areas Programme

Parks for Life



Report of the IVth World Congress on National Parks
and Protected Areas

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The World Conservation Union

Parks for life : report of the IVth World Congress on National Parks and Protected Areas
10-21 February 1992

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**Report of the IVth World Congress
on National Parks and Protected Areas**

10-21 February 1992

Edited by

Jeffrey A. McNeely
Secretary General
IVth World Congress on
National Parks and Protected Areas

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Front cover (detail) and back: **Amazonas** by Richard Saunier. Dr Saunier is Environmental
Management Advisor with the Department of Regional Development, Organization of American
States, in Washington, D.C. He chaired Congress Workshop III.1 on the new regional planning.

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*Dedicated to my wife, Pojanan Suyaphan McNeely.
Her steadfast support, incredible patience, numerous
sacrifices, and Buddha-like wisdom made this – and
much else – possible.*

Foreword

There are places on Earth that fill the dullest mind with awe. Many are sacred to our most ancient cultures. Many have inspired artists and poets down the centuries. The mystery of Kakadu: the grandeur of Yosemite and Iguacu: the wonder of the Amazonian forests and the Serengeti plains: the cold starkness of the northern forests in winter: the intimate landscape of the English Lake District, echoing the harmonies of four thousand years of human history – all these retain a power to uplift the spirit and delight even the most hardened of travellers. "Delight itself, however," wrote Charles Darwin in 1831, "is a weak term to express the feelings of a naturalist who, for the first time, has wandered by himself in a Brazilian forest." Or an African savanna, rippling with the movement of grass and antelopes, or an Antarctic coastland where mountains, sea and ice meet and are home to life that shows no evident fear of the passing human.

The National Parks movement was founded by people who believed that the world's wildest and most beautiful places must be protected, as threads of gold in the tapestry of human culture. And those pioneers were impelled by urgency and passion. They saw threats to the wild places mounting on every hand – from logging and mining, highways and reservoirs, and behind all that arrogance which treats "wilderness" as valueless in comparison with the artificial world built within the human economic system.

It is right that we pay tribute to the pioneers, and also good that many continue their work today. Within the past two years, for example, we have seen the true spirit of the parks movement in action in the campaign that led to the designation of the whole of Antarctica as a "natural reserve, devoted to peace and science". But in recent years we have also come to recognize that even the most remote and wild areas left on the planet bear many marks of human influence, and have been home to people over the millennia. There are thought to have been between eight and nine million people in Amazonia at the time of European contact in 1492. The landscapes and faunas of Australia and East Africa have been altered by fire and the impact of hunting and pastoral use. And this new understanding has led on to a major change in social attitude. The rights of indigenous peoples over their homelands, including lands designated by central governments as national parks, are gaining wide acceptance. It is becoming obvious that the key to protecting a cherished landscape lies within the communities that call it home.

The IVth World Congress on National Parks and Protected Areas brought a new understanding of the importance of such areas for the future of the world, and of all the species that inhabit it, including our own. Protected areas are a key to safeguarding the living diversity of the Earth. They are vital to the maintenance of the planetary life-support system. Their establishment and management is an essential element in the process we today term "sustainable development". They contribute positively to the economic, cultural and spiritual wealth of nations. And they are as vulnerable as the works of human hands – and once damaged, even harder to restore.

Everybody should be a "parks person". Those who live in and around them have a special stake in their continuance, and are entitled to a special share of the benefits they confer. But all sectors of society should join together to ensure that the beauty, the living richness and the inspiration of the natural world is cherished as an essential part of true civilization.

This volume conveys the message of Caracas. It is a message the world must heed, if it is to build a future that matches the vision, and gives substance to the dream, of a life of quality and dignity for all people.

*Martin W. Holdgate
Gland, Switzerland,
April 1993*

Preface and Acknowledgements

"Parks for Life" was chosen as the theme of the IV World Congress on National Parks and Protected Areas to emphasize how vital protected areas are to the welfare of modern society. The Congress was designed to demonstrate that protected areas help society provide for its needs – cultural, economic, political and spiritual – in a sustainable manner.

In an age of information overload, it is perhaps not surprising that over 1000 papers were presented at the various Congress sessions. The challenge facing the Congress Steering Committee was how to convert the very extensive and detailed raw material from specific cases into products that could be used to improve the effectiveness of protected areas. Such products are not confined to publications; indeed, publications are simply tools that can be used by the people who will carry out the tens of thousands of individual actions that together will enable protected areas to make their valuable and much-needed contribution to human welfare.

This report, **Parks for Life**, is intended to serve as a guide to the tools that can be expected to result from Caracas. It does not attempt to cover everything that was said at the Congress, nor to reflect the full diversity of views and richness of dialogue. Rather, it presents the Caracas Declaration, the Congress Recommendations, and the Caracas Action Plan; and provides a summary overview of the various plenary sessions, symposia, and workshops to indicate how the "tool box" will be assembled by IUCN and its collaborators in the coming years.

For each of the workshops, a full list of papers received appears at the end of the individual reports. Copies of all of these papers are on file at IUCN; a number of other presentations were made but were not submitted in written form and therefore are not mentioned. The papers listed provide the raw material for the publications or other products expected from the workshops, several of which have been produced already. Many others are in production or preparation, to appear in the coming several years and be distributed widely to Congress participants and others.

The ideas put forward in these pages provide a distillation of the contribution protected areas can make to societies seeking a sustainable relationship between people and resources. They call for a wide range of approaches to specific situations: demonstration projects; new funding mechanisms; consensus-building efforts; new approaches to management and training; co-management with local communities; cooperative ventures between governments and the private sector; improved legislation; awareness-building activities; and much more. The ultimate payoff of the Caracas Congress will be measured by how well individual protected areas contribute to the overall welfare of societies, meet the needs of local human communities, and support local and global efforts to achieve an appropriate balance between people and the rest of nature.

The convening of the Congress was built on the very strong support of the Government of Venezuela, with President Carlos Andrés Pérez attending both the opening and closing ceremonies of the Congress and offering strong encouragement throughout the planning and organization of the event. Enrique Colmenares Finol, Venezuela's Minister for the Environment, served as Co-Chair of the Congress and was a most gracious host to the participants.

Local arrangements were efficiently handled by the Venezuelan Organizing Committee, under the able chairmanship of José Joaquín Cabrera Malo. Lorena de Quintero served as the National Coordinator, keeping all aspects of the remarkably complex organization well under control. Other members of the Venezuelan Organizing Committee included Luis Chesney (Executive Secretary) and Gema López (Chief of Press and Public Relations). Subcommittee members were as follows: Operations Committee – Manuel González Vale (Coordinator), Maritza Story de Olazola, Pedro Fuster and Aísa Brea Muñoz; Technical Committee – Deud Dumith (Coordinator), María Antonieta Febres, Mario Gabaldón and Cristina Pardo; Exhibition Committee – Beatriz Fernández (Coordinator), Efraín Matamoros, Sergio Pacheco and Juan Elías Márquez; Finance Committee – Nelson Andrade (Coordinator), Gilberto Barreto, Inés D'Ambrosio and Rosalba González; Promotions

Committee – Aníbal Rosales (Coordinator), Omar Carrero Niño, Cecilia Blohm and Sergio Antillano; Tourism Committee – Mireya Rosales (Coordinator), Cristina Pardo and José León; Hospitality Committee – Astrid Barreto (Coordinator), Carmen Prieto, Octavio Jelambi and M. E. Bustamante; Security Committee – Oscar Barreto (Coordinator), Francisco Yáñez Méndez, José Camilo Pérez, and Sergio Valentini. Cristina Pardo, CNPPA's Regional Vice-Chair for South America, deserves a special vote of thanks for her steadfast support throughout the preparations for the Congress.

A large number of partners – ranging from governments to private foundations – provided the financial resources necessary to organize and hold the Congress. Bilateral assistance came from the Governments of Venezuela, the Netherlands, Sweden (SIDA), Finland (FINNIDA), Germany (BMZ-GTZ), Norway (Ministry of Environment), Denmark (DANIDA), the United States of America (United States Department of State and Department of Interior National Park Service), the United Kingdom (ODA), Switzerland (DDA and Intercooperation), Canada (Canadian Park Service) and France (Ministries of Foreign Affairs, Cooperation and the Environment). Multilateral institutions contributing included: Commission of the European Communities (CEC), InterAmerican Development Bank (IDB), The World Bank, United Nations Educational, Scientific, and Cultural Organization (UNESCO), the World Heritage Committee, United Nations Environment Programme (UNEP), Food and Agricultural Organization of the United Nations (FAO), United Nations Development Programme (UNDP), and Agence de Coopération Culturelle et Technique (ACCT). International non-governmental organizations and foundations supporting the Congress include: The Nature Conservancy, World Wide Fund for Nature (WWF), the MacArthur Foundation, and the World Conservation Monitoring Centre (WCMC). British Petroleum helped support Congress documentation. The World Resources Institute and the Bureau of the Ramsar Convention provided important services to the Congress. Other institutions too numerous to mention provided support in kind; all are thanked for their contributions.

The Congress Steering Committee was chaired by Kenton Miller, who shared generously his considerable wisdom and experience; as a past Director General of IUCN and former Chairman of IUCN's Commission on National Parks and Protected Areas, his guidance was a foundation of the success of the Congress. Other members of the Steering Committee, who gave generously of their time and knowledge, included Mona Bjorkland, Peter Bridgewater, Gil Child, Paul Dingwall, Ludwig Ellenberg, Harold Eidsvik, Rodrigo Gámez, Juan Carlos Godoy, Jeremy Harrison, Peter Kramer, Walter Lusigi, Bing Lucas, Rob Milne, Alexander Nikol'skii, Perez Olindo, Maria Teresa Jorge Pádua, Cristina Pardo, Egbert Pelinck, Adrian Phillips, Allen Putney, Lorena de Quintero, Samar Singh, Jane Robertson, Mohammad Sulayem, Ken Thelen, and Tom van't Hof.

As at any large meeting, the Recommendations Committee served behind the scenes to deal with numerous issues of great importance to participants, seeking to balance the diversity of views to produce a harmonious result. At Caracas, the Recommendations were adopted with an impressive degree of consensus, due largely to the long hours devoted to the Recommendations by Adrian Phillips (Chair), Juan Black, Ludmilla Bolshova, Paul Chabeda, Lars-Erik Esping, María Antonieta Febres, Rodrigo Gámez, John Grainger, Li Wen Hua, Jaap Kuper, Craig MacFarland, Samar Singh and Mohammad Sulayem, with Marilyn Swanson and Caroline Martinet serving as their secretariat.

The Committee which produced the Caracas Action Plan was chaired by Bing Lucas, with Hans Bibelriether, Peter Bridgewater, John Bright, Gil Child, Paul Dingwall, Juan Carlos Godoy, Graeme Kelleher, Mankoto Ma Mbaelele, Kenton Miller, Rob Milne, Hemanta Raj Mishra, Alexander Nikol'skii, Perez Olindo, Cristina Pardo, Adrian Phillips, Allen Putney, Iosefatu Reti, Mohammad Sulayem, Alvaro Ugalde and Xianpu Wang serving on the Committee.

The Congress Declaration Committee was chaired by Martin W. Holdgate and consisted of Michel Batisse, José Joaquín Cabrera Malo, Graham Child, Deud Dumith, Bing Lucas, Walter Lusigi and Yves Renard; Estelle Viguet provided her usual efficient secretarial support.

The truly valiant efforts of Yanina Rovinsky to coordinate and ensure the translation of the documents into Spanish, requiring long hours and great diplomacy, deserve special recognition. The production of paperwork for the Congress –

involving nearly a dozen separate volumes—depended almost entirely on the heroic achievements of Thora and Stephan Amend to locate publishers and negotiate printing to enable all documentation to be in the hands of the Congress participants. During the Congress, IUCN's Morag White spent long hours supervising documentation to ensure that the latest documents got into the hands of the Congress participants with the shortest possible delay; and "El Congreso", a daily newsletter, was produced by Yanina Rovinsky.

From the IUCN side, IUCN President Sir Shridath Ramphal gave generously of his time, giving an opening address and chairing Plenary 2. IUCN Director General Martin W. Holdgate, provided unfailing support, guidance and leadership, and taking responsibility for many of the most politically complex issues facing the Congress. The fact that financial support was able to be provided to over 200 participants is due to strong support from IUCN Assistant Director General Michael Cockerell, aided by Mark Halle and Sylvie Wabbes. Ursula Hiltbrunner brought her many years of experience with IUCN General Assemblies to serve as the main liaison between IUCN and the Venezuelan Organizing Committee, serving above and beyond the call of duty. Many IUCN colleagues helped to share the burden of organizing workshops: Jill Blockhus, Françoise Burhenne (Bonn), Héctor Ceballos-Lascuráin, Paul Driver, Pat Dugan, Danny Elder, Juan Garafulic, Mariano Gimenez Dixon, Wendy Goldstein, Lothar Gundling (Bonn), Monica Herzig, Vernon Heywood (UK), Eric Howard (Bonn), Alejandro Imbach, Ock-Kyung Kim, Per Ryden, Zbig Karpowicz, Hervé Lethier, Daniel Navid, Jean-Yves Pirot, Manuel Ruiz Pérez, Jeff Sayer, Simon Stuart, Jim Thorsell, and Pietronella van den Oever. Secretarial support, always a limiting factor in the organization of large meetings was provided by Nathalie Billens, Sue Dalton, Ana De Giorgio, Geneviève de Mastral, Joanna Erfani, Marianne Gold, Sarah Humphrey, Fabienne Kalifat-Turner, Beatrice Schwarz, Nancy Porchet, Maribel Rodrigues, Christine Samuel, and Estelle Viguet. Other important roles were played by John Burke, Paul Ress, Peter Hulm, and Philippa Cobley (Communications), Juan Garafulic (Liaison with Venezuelan government), Caroline Martinet (Assistant to the Secretary General), Fayeze Mikhail (Computers), and Judith Nechvatal and Maria Westman (Finance).

The IUCN regional offices also made important contributions to the Congress. From IUCN-US, John Waugh was tireless in his support, both in preparations and during the Congress. Byron Swift, Catherine Allen, Mark Dillenbeck, Stephen R. Edwards, Dounia Loudiyi, and Alison Meares contributed to the workshops, while Maria Elcna Matheus handled press relations. From the Central American office, Juan Carlos Godoy played a central role in ensuring that the region's concerns were well represented; Jorge Castiglione, Enrique Lahmann, Oscar Lucke, Carlos Pérez, Yanina Rovinsky, Virgilio Cozzi, and Valerie Barzetti also contributed. From the South American office, Luis Manuel Castello was a key component; the East African office provided logistical support to participants from their region and sent Geoffrey Howard and Mick Thompson from the secretariat, while the Southern African office sent Tabeth Matiza and Dorothy Musokotwane and helped ensure strong representation from the region; and Aban Marker Kabraji, Peter John Meynell, Abdul Latif Rao, and Mark Treacy contributed from the Pakistan office.

At IUCN, I was honored to chair the Organizing Committee, with supportive and constructive members including John Burke, Héctor Ceballos-Lascuráin, Juan Garafulic, Marianne Gold, Ursula Hiltbrunner, Alejandro Imbach, Caroline Martinet, Sylvie Wabbes and Morag White. Secretariat support was provided by Sue Rallo, Joanna Erfani, Ana de Giorgio and Wendy Papazian.

Finally, the production of this volume owes much to Nikki Meith, who worked on the design and layout; Wendy Papazian, who did much of the production work; Caroline Martinet, who helped ensure that revisions were incorporated during the long gestation period of the final document; Hugh Syngé, who helped organize the workshop reports; and Morag White, who freely provided her considerable editorial skills. To all of the above, and to many others who have gone unmentioned, I give my heartfelt thanks for their contributions to a remarkable event.

*Jeffrey A. McNeely
Secretary General
IVth World Congress on
National Parks and Protected Areas,
Gland, Switzerland
April 1993*

Summary



A Summary Report of the IVth World Congress on National Parks and Protected Areas

by

**Jeffrey A. McNeely
Congress Secretary General**



1. Introduction

Every ten years, IUCN convenes a Congress to assess the status of protected areas and chart a course for the future. The IVth World Congress on National Parks and Protected Areas was held in Caracas, Venezuela, from 10 to 21 February 1992. Its ambitious objective was to define the role of protected areas in a healthy relationship between people and the rest of nature.

This was a particularly timely meeting, as the pace of change is accelerating. Growing human populations, expanding consumption of natural resources, changing climate patterns, increasing impacts of pollutants on the environment, and spreading of a "global culture" through telecommunications technology are only some of the most obvious changes affecting all parts of the planet. Protected areas are not immune to these changes, and indeed form an important part of the response of societies to them.

How can protected areas contribute in sustainable ways to economic welfare, without detracting from the natural values for which they were established? How can local people be provided with more of the benefits of conservation, thereby becoming supporters of protected areas? How can protected areas be managed to support both biological and cultural diversity? How can a worldwide alliance be established to support protected areas, politically, scientifically, and financially? What modifications are required to apply conservation approaches developed on land to coastal and marine habitats? In short, what is required to enable protected areas to survive, and prosper, into the 21st century and beyond?

Some 1840 leading experts from 133 countries met in Caracas to answer these and related questions. Nearly 50 workshops were held to identify the major issues and

contribute to the Caracas Action Plan and Congress Recommendations. The main conclusions of the Congress were summarized in the Caracas Declaration, a statement delivered by Venezuelan President Carlos Andrés Pérez at the Closing Ceremony to Maurice Strong, Secretary General of the United Nations Conference on Environment and Development.

The Congress concluded that properly managed protected areas make important contributions to human welfare, warranting far greater attention than they are now receiving. It therefore called for a comprehensive approach to improving the management of protected areas in support of sustainable forms of development. The Caracas Action Plan was developed by the Congress to meet this need.

This report summarizes the Congress Programme, the major results, and IUCN follow-up action.



2. The Congress Programme

The Opening Ceremony gave a very high political profile to the Congress, with the opening speech given by Sir Shridath Ramphal, President of IUCN and former Secretary General of the Commonwealth. Sir Shridath strongly supported Venezuelan democracy, and called for international solidarity on environment and development issues. The welcoming speech given by President Carlos Andrés Pérez emphasized the importance of linkages between protected areas and other major development issues facing humanity. Other speakers included Federico Mayor (Director General of UNESCO), Marc Dourojeanni (InterAmerican Development Bank), William H. Mansfield III (United Nations Environment Programme), Gerardo Budowski (for the World Wide Fund For Nature), Rafael Moreno (Food and Agriculture Organization), and James Ridenour (Director of the US National Park Service, host of the first two parks congresses). This Opening Ceremony highlighted the fact that protected areas have considerable support at the highest levels and are recognized as critically important in modern development strategies. The speakers challenged the audience to specify the actions needed to convert this support into on-the-ground reality.

The first technical plenary, "Protected Areas in the 1990s: Issues and Responses", showed the broad context within which protected areas need to evolve in the coming decade, covering topics generally beyond the day-to-day concerns of the protected area manager: global change, population growth, global economics, development, science, philosophy, communications, and

biodiversity. This session demonstrated that the future of protected areas must be placed within a far wider environmental, social, and economic context. The most serious challenges facing protected areas are in fact extensions of more fundamental problems of society, as identified in *Caring for the Earth* (the successor to the World Conservation Strategy, published in late 1991 by IUCN, WWF and UNEP).

The second plenary, "Expanding Partnerships in Conservation", addressed the need to build a broader base of support for protected areas, with presentations from many sectors of society which traditionally have not been considered part of the protected area profession. Speakers from the mass media, non-governmental organizations, forestry, native peoples, hunters, zoos and botanic gardens, social and biological sciences, commerce and industry, tourism, disaster prevention, energy, urban planning, the arts, and the military discussed ways in which they could influence and help the campaign for protected areas, within a wider conservation context.

The third plenary, "The Contributions of Protected Areas in Sustaining Society: A Global Review," focussed directly on protected areas, with IUCN's Commission on National Parks and Protected Areas making a series of presentations about the current status, trends, and priorities in each region of the world (including both terrestrial and marine habitats). A review of the substantial progress achieved since the Third Congress in 1982 was also provided. The regional presentations were supported by a 500-page volume of draft reviews, each the result of wide consultations with local protected area managers. Building the institutional capacity to manage protected areas emerged as the key requirement in most regions.

Following the three introductory plenaries, the Congress broke into four parallel symposia, each dealing with one of the broad themes of the Congress:

- How Protected Areas Can Meet Society's Needs: The Social, Economic, and Political Issues
- Protected Areas in a Changing World: The Scientific Issues
- Regional Planning and Protected Areas: The Development Issues
- The Challenge Within: The Protected Area Management Issues



Venezuela's Minister of the Environment and Renewable Resources, Enrique Colmenares Finol, is flanked by IUCN Director General Martin Holdgate (left) and Kenton R. Miller of the World Resources Institute.

Workshops

Each workshop was designed to: identify the major issues on the topic; specify target audiences; outline post-Congress publications and compile material for them; and contribute to the Caracas Action Plan and the Congress Recommendations. Each workshop produced a short report which summarized its main conclusions; this report, along with a list of papers tabled in the workshop, is included in the Congress Proceedings.

Workshop organizers included the World Bank, UNESCO, UNEP, WWF, Organization of American States, the Ramsar Convention Secretariat, The Nature Conservancy, the Ecotourism Society, the Keystone Center, the University of Groningen, World Resources Institute, the Smithsonian Institution, the George Wright Society, Wildlife Conservation International, Cultural Survival, the Great Barrier Reef Marine Park Authority, the US National Park Service, and several IUCN programmes (Protected Areas, Wetlands, Marine, Tropical Forests, Species Survival, Population and Resources, Education and Communication, and Climate Change). All parts of IUCN were deeply involved in the Congress, demonstrating the commitment of the Union to protected areas as a central instrument for conservation.

In each symposium, the chairs of the dozen or so workshops held under that theme introduced the topic and approach they intended their workshop to follow. The Symposium Chairs – Walter Lusigi, Martin Holdgate, Guillermo Colmenares, and Graham Child – provided the leadership for the respective sets of workshops.

The Congress then moved to the participatory level, with the next week spent in 49 workshops, for which 1029 abstracts of papers had been submitted and distributed to participants. Fifteen workshops were held at any one time; nearly half had simultaneous interpretation between English and Spanish, and some had French as well. Of the 49 workshops, 16 were chaired by people from developing countries, and virtually all had co-chairs from developing countries. Seven workshops were chaired by women.

The mid-Congress weekend was available for working visits to some of Venezuela's impressive range of protected areas. The Venezuelan hosts subsequently coordinated an informative plenary session about protected areas in Latin America and the Caribbean, which are caught between two conflicting forces: the daily struggle for survival and the excessive use of resources and land in the pursuit of industrialised development. The linkages between trade, debt, poverty, and environment were stressed and a new approach to eco-development was seen as necessary if sustainable use and social equity are to be achieved.

Throughout the workshops, an informal conference room – named the "Caracas Forum" – was available to enable participants to enjoy special audio-visual and other presentations from each region of the world. In addition, an international film and video festival displayed 167 entries from 65 countries at the Cinemateca Nacional. The jury was headed by M.A. Partha Sarathy, Chair of the IUCN Commission on Education and Communication, who presented awards to the four winners of the festival at the closing ceremony. In conjunction with the Congress, a major exhibi-



Evening meetings

Each evening, meetings were organized by Congress participants to address topics of particular concern to them; these included regional gatherings, meetings of IUCN Commissions, groups on gender roles, special training courses on conflict resolution, and many others.

Awards

Packard Awards

The following Fred M. Packard International Parks Merit Awards were presented by the Commission on National Parks and Protected Areas:

Don Carlos Mendez Montenegro and **Alex Rudolfo Mendez Del Cid** (Guatemala) are recognized for their valour; both were wounded in an ambush on 29 April 1991.

Joseph Mburugu (Kenya) has remained the only continuous link in the administration of Kenya's National Parks over a period of 30 years. Mr Mburugu's integrity is such that he has been trusted by both government and the general public in Kenya since the early 1960s.

Ton Van't Hof has guided the management of the marine parks of the Netherlands Antilles, making them a model for many other marine and coastal parks in the Caribbean area and the world.

Dr Jorge Ignacio Hernandez Camacho, Scientific Director of UNIFEM-INDERENA, has led conservation efforts in Colombia, involving universities as well as government organizations for 30 years.

Dr Hugh Lamprey – scientist, educator and conservationist – is recognized as the first Principal of the African College of Wildlife Management at Mweka in Tanzania. He was also the founder of the Serengeti Research Institute, the Coordinator of the Integrated Arid Lands Project in Kenya.

Dr Abdulaziz H. Abuzinada of Saudi Arabia is pioneering new efforts in the Arabian peninsula by combining conservation with the social needs of traditional peoples.

Dr Aila Keto has been a leader in the conservation of the Wet Tropics of Queensland (Australia). She is a respected scientist and an eloquent spokesperson for conservation.

Mme Madeleine de Grandmaison – Professor, Regional Councillor for Martinique and Premier Vice-president of the Regional Nature Park of Martinique – has worked for many years towards the protection and enhancement of the environment, notably in the realm of protected areas.

Almirante Ibsen de Gusmao Camara has led efforts in Brazil for marine conservation and protection of areas in Amazonia.

Carlos Castaño Uribe, as Director of National Parks of Colombia, has played an important role in the Cooperation Treaty of the Amazon ("Tratado de Cooperación del Amazonas").

Mario Gabaldón and the staff of **INPARQUES** (Venezuela) have played an important role in securing the establishment, the planning and the management of the network of national parks and protected areas in Venezuela.

P. Srinivas (India) detested violence yet lost his life in an ambush by one of India's most notorious poachers.

Dr. Vladislav Vassiliev (Turkmenia) has been deeply involved in research and management in the Krasnovodsk Nature Reserve for more than twenty years.

Dr. Vladimar Krinitsky (ex-USSR), from his position as Director of the State Nature Reserves, Forestry and Wildlife Directorate, became deeply involved in international conservation with IUCN, CNPPA, IWRB and MAB.

Peter Scott Award

The Species Survival Commission presented the Peter Scott Award for Conservation Merit to the **Instituto Nacional de Biodiversidad de Costa Rica (INBio)**.

Tree of Learning Award

The Commission on Education and Training presented its Tree of Learning Award to **Hemandra Panwar**, Director of the Wildlife Institute of India.

Getty Prize

The Fifteenth J. Paul Getty Wildlife Conservation Prize, administered by World Wildlife Fund-US, was awarded to two institutions:

Ghandrung Forest Management Committee (Nepal)

Fundación Peruana para la Conservación de la Naturaleza (Peru)

Parks for Life Film Festival

The Parks for Life International Film and Video Festival gave awards to the following:

First Prize (Jaguar): **Cry for Life** (Brazil)

Second Prize (Tapir): **White Gold of Africa** (United Kingdom)

Third Prize (Macaw): **Bajo del Horizonte** (Venezuela)

Jury Chairman's Prize (Elephant): **Ozono** (Venezuela)



IUCN's Commission on National Parks and Protected Areas presented the Fred M. Packard International Parks Merit Award to (left to right): Tom Van't Hof (Netherlands Antilles); Madeleine de Grandmaison (Martinique); Hugh Lamprey (UK); Aila Keto (Australia); Don Carlos Mendez Montenegro (Guatemala); Almirante Ibsen de Gusmao Camara (Brazil); and Mario Gabaldón and the staff of INPARQUES (Venezuela). (See the list on the preceding page for those recipients not pictured.)

tion entitled "Expo-Conservation '92" was held in the Caracas Hilton, with about 45 commercial exhibits and over 100 technical exhibits (presented by IUCN Members and local NGOs). At least 30 other exhibitions were held in and around Caracas to mark the Congress.

The Venezuelan Organizing Committee and IUCN both held receptions for all participants on 10 and 20 February, respectively. These provided a relaxed social atmosphere for participants to meet, and the sheer size of the gatherings compelled new friendships and contacts.

Each day, a Congress Newsletter was distributed to ensure that everyone was kept aware of Congress events. News conferences were held regularly, with a particular highlight being the launch on 11 February of the *Global Biodiversity Strategy*, the result of a two-year effort by the World Resources Institute, IUCN, and UNEP.

The workshops fed back to Plenary 5, "Moving Ahead to the 21st Century", on Thursday, 20 February, leading to a lively discussion – co-chaired by Martin Holdgate (Director General of IUCN) and Enrique Colmenares Finol (Venezuelan Minister of Environment) – of the Caracas Declaration and the Congress Recommendations.

To give a regional perspective on how conservation is happening on the ground, and to reinforce major messages from the workshops, Plenary 6 – "Putting the Pieces Together" – included presentations from each of six major regions: the Serengeti ecosystem (Tanzania and Kenya); the Great Barrier Reef (Australia); the Eastern Himalayas

(Nepal and Tibet); the Waddensee (Germany, Netherlands, and Denmark); La Amistad (Costa Rica and Panama); and the Greater Yellowstone Ecosystem (USA). In each of these "bioregions", new collaborative and participatory institutions are being developed to translate concepts of sustainability into practical conservation action.

Finally, on the closing day, a number of awards were presented to individuals and institutions for outstanding performance in support of protected areas (see photo above and box, page 5).

The Caracas Declaration and Congress Recommendations were approved. Jeffrey A. McNeely, Congress Secretary General, and Martin W. Holdgate, IUCN Director General, delivered closing addresses. President Carlos Andrés Pérez handed the Caracas Declaration to Maurice Strong, Secretary General of the United Nations Conference on Environment and Development, who pointed out that protected areas provide an indispensable mechanism for the protection of the environment and natural resources of all countries. He pledged his full support for the conclusions of the Congress, stating that "The Congress has resulted in a number of practical proposals that will further enlighten the negotiations within UNCED and provide a very solid basis for the necessary strengthening of the global system of protected areas."

President Andrés Pérez then officially closed the Congress, offering the full support of his government, and himself personally, to achieve the objectives identified in the Caracas Declaration.



3. Major messages from the Congress

The Congress considered a very broad spectrum of issues relating to protected areas. Meeting as a group of professionals rather than as delegates from governments or institutions, the Congress was relatively free to discuss issues openly, building a new and strong consensus on many points. Especially significant were discussions on people and protected areas, biodiversity, regional conservation, funding, and building the constituency for protected areas. These are further developed below.

3.1. People and protected areas

As Sir Shridath Ramphal observed in his opening address, protected areas cannot co-exist with communities which are hostile to them. But when placed in a proper context, protected areas can make significant contributions to human welfare. The Congress agreed that protected areas must be socially responsive and just. It devoted considerable effort to adding specifics to the general point that social, cultural, economic, and political issues are not peripheral to protected areas, but central to them.

Many protected areas face pressure from increasing populations whose economic well-being has suffered from cumulative neglect of land and other resources. For protected area managers, detailed knowledge of the people whose lives are affected by the establishment and management of parks is as important as information about the plant and animal species to be conserved. The cultural and socio-economic characteristics of local people, including the age and gender division of labour, form the basis for measures to promote the sustainable use of natural resources, alleviate poverty, raise the quality of human life and create positive support for protected areas.

Participants at the Congress often had direct experience of conflicts between different uses for lands important for conservation, or between different economic powers with different objectives. The Congress therefore gave considerable attention to new approaches to resolving conflicts. It concluded that the most important step is to get all sides of a conflict to sit down and try to recognize the validity of the opposing views. It is also important to identify the various "stakeholders" involved in the conflict and their interests. While conflicts will not go away, the Congress will lead

to guidelines to help protected area managers become more effective in dealing with the conflicts which are an inevitable part of modern management.

The Congress recognized that human communities, especially those living in and around protected areas, often have important and long-standing relationships with these areas. Local and indigenous communities may depend on the resources of these areas for their livelihood and cultural survival. Increasingly, the resources which justify establishment of protected areas include cultural landscapes and adapted natural systems created by long-established human activity. These relationships embrace cultural identity, spirituality and subsistence practices, which frequently contribute to the maintenance of biological diversity. Protected areas are thus to be seen as making important contributions to conserving cultural as well as biological diversity.

The relationships between people and land have too often been ignored and even destroyed by well-intentioned but insensitive resource conservation and management initiatives. The Congress called for community participation and equality in decision-making processes, together with mutual respect among cultures to be achieved urgently. Customary tenure systems, traditional knowledge and practices, and the role of men and women in communities, must be



Local and indigenous communities depend on protected area resources and should be involved in decisions affecting their use.

respected and built upon in designing and implementing conservation plans.

At the same time, community involvement does not mean opening the national parks to all comers, any more than a banker would seek customers by opening the vault. Rather, a wise protected area manager, like a wise banker, uses the park's assets as a base upon which to build customer satisfaction, investment, and interest.

3.2. Conserving biodiversity

It may seem obvious that protected areas contribute to conserving biodiversity. But, as pointed out in the *Global Biodiversity Strategy* launched at the Congress, relatively few protected areas have yet given full attention to the biodiversity issue. The Congress therefore requested that all countries urgently undertake surveys to identify additional sites of critical importance for conservation of biological diversity, and, wherever possible, accord total protection to them. Harvesting should be relocated from primary to secondary forests and tree plantations in previously deforested areas; or – where this is not possible – sustainable forest harvesting systems which favour natural species diversity should be developed and introduced.



The Congress recognised the need for a warning system to identify and act on threats to species and their habitats.

Countries, which the Congress noted are sovereign and have control over the use of their own genetic resources, should act to protect their interests in the increasing market of biological resources, including improved management of protected areas. An independently-funded global early warning system needs to be established to monitor and act on threats to species and habitats. The new biodiversity convention now being negotiated needs to include strong support for protected areas, especially in developing countries. And an international panel needs to be created to establish conservation norms and facilitate long-term planning and coordination.

The Congress recognized that approaches developed for conserving biodiversity on land may not always be appropriate in the sea, calling for a major effort to create well-managed marine protected areas. This may require new concepts, or the broader application of concepts such as zoning, where strictly-protected core zones are surrounded by much larger areas of varying intensity of human use.

A new Global Marine Programme, a joint effort by a number of IUCN members, was announced at the Congress. It will seek to establish a global system of marine protected areas representative of all major biogeographic types and ecosystems and to provide the requirements for their competent planning and management. Marine protected areas encompassing complete large marine ecosystems, and including strictly protected areas (IUCN categories I-III), will be based on administrative arrangements to coordinate between the different jurisdictions of adjacent land and sea areas. The Programme will aim to set up small but strictly protected core areas buffered by well-managed zones of regulated use, with an outer area of cooperation – a large marine ecosystem that all agencies and interested parties have agreed to manage and protect jointly. This is the same "bioregional" approach that the Congress advocated on the land, and will benefit from an association with the biosphere reserve programme. It will include scientific research, long-term monitoring, the application of the results in decision-making, and public education and involvement efforts.

3.3. Conservation on a regional scale

Protected areas have sometimes been seen as islands of nature and tranquility, surrounded by incompatible land uses. But the Congress made it clear that such an "island mentality" is fatal in the long run. The Congress recognized that it is unlikely that protected areas will be able to conserve biodiversity if they are surrounded by degraded habitats that limit gene-flow, alter nutrient and water cycles and produce regional and global climate change that may lead to the

final disappearance of these "island parks". Protected areas, therefore, need to be part of broader regional approaches to land management. The term "bioregion" was used to describe extensive areas of land and water which include protected areas and surrounding lands, preferably including complete watersheds, where all agencies and interested parties have agreed to collaborative management.

Water was seen as a major unifying component of a bioregion, and a drainage basin provides a natural unit for land and water management. Since protected areas can make an important contribution to the management of water in natural ecosystems though maintaining hydrological processes, the Congress called for close cooperation among diverse disciplines and interest groups, beginning by defining the roles played by protected areas in managing catchments and the impact of changes in quantity and quality of fresh water on the diversity and productivity of natural ecosystems. Both drainage basins and many international boundaries are marked by mountains, many of which have protected area status. Therefore, bioregions often also include major mountain ranges and the Congress asked that greater attention be given to the problems of mountain protected areas and their status within bioregions. Protected areas which occur along international boundaries call for international cooperation for which the bioregion approach also provides a framework.

Numerous examples of regional approaches were presented at the Congress, both within countries and between countries: as noted above, Plenary 6 covered six examples of bioregions. Biosphere reserves, as developed by UNESCO and IUCN over the past twenty years, were seen as a valid expression of a bioregional approach, though relatively few have yet attained the ideal of productive collaboration between the core protected areas and surrounding lands.

Climatic change – the subject of a workshop at the Congress – emphasizes the importance of the bioregional approach. Climatic change represents a critical and urgent threat to all ecosystems and species, including those in coastal and marine environments. Protected areas are not immune to these threats and are too small for the continued survival of existing ecosystems and species in a changing world. The Congress therefore called on governments to involve protected area managers in programmes to determine which habitats and species are at risk on a regional scale, develop networks of protected areas actively involved in monitoring global change, and take measures to extend the coverage of systems and species threatened by global climatic change. Special attention needs to be given to establishing large areas, areas with a wide altitudinal range, and corridors between protected areas – all elements of the bioregional approach.



Watersheds provide a natural unit for protected area management.

3.4. Funding for protected areas

The Congress examined very carefully the notion that "parks must pay their own way". Many protected areas are in fact highly profitable, earning very considerable foreign exchange for their countries (especially from tourism). More broadly, protected areas make important economic contributions through helping to maintain clean air, pure water, a green Earth, and a balance of creatures: these functions enable humans to obtain the food, fibre, energy, and other material needs for survival. Many of the benefits are unquantifiable, however, and rather like schools, police forces, or hospitals, relatively few protected areas are able to capture the "profits" from the benefits they provide to society.

Three major economic problems for protected areas were recognized. First, the full benefits of protected areas are seldom recognized, so an appropriate balance between benefits and costs is not easily apparent to decision-makers and it is seldom made clear how increased investments will result in increased benefits, either to local populations or to the general public. Second, many of these benefits are outside the current concepts of economics, and many participants were sceptical of an excessive reliance on calculation of benefits; the question of distribution of benefits was seen as especially important, and insufficiently addressed by current economic models. And third, greatly increased investments for protected areas will be helpful only if the investments are part of an overall development package; pumping too much money into a protected area in an unbalanced way can do more

harm than good, and many felt that lack of money was a less important constraint than excessive expenditures in sectors that threaten protected areas.

New responses to insufficient or unbalanced investment in protected areas included innovative funding mechanisms (trust funds, dedicated funding of receipts from tourism, debt-for-nature swaps), and giving more responsibility for protected areas to NGOs, the private sector, local communities, and land-owners. But the Congress was also clear that governments have the prime responsibility for protected area management, in view of their key role as national assets and the generalized benefits they provide to society. Conservation investments are as essential to the welfare of society, as legitimate a public investment, as defense, communications, justice, health, and education. Protected areas benefit the nation – that's why some of the best ones are called "national parks" – and the world – that's why outstanding sites are recognized under the World Heritage Convention.

Making protected areas part of regional development plans can help ensure an appropriate balance between costs and benefits. The fact that so many people from banks, foundations, and aid agencies participated in the Congress demonstrated their willingness to consider this approach and to accept international responsibility to help support protected areas. The Global Environment Facility is providing hundreds of millions of dollars for conservation, and some of this money will be spent on protected areas. In a statement on behalf of UNEP, Deputy Executive Director William Mansfield proposed a grant scheme for park management using funds from the Global Environmental Facility, a proposal that was adopted and strongly promoted by the Congress.



The Congress asked IUCN to develop guidelines for training of protected area managers at all levels.

3.5. Building a stronger constituency for conservation

In building a stronger constituency for conservation, the Congress recognized that support is required from all parts of society – young and old, male and female, rich and poor, private and public. It noted that many current institutions are far too weak to carry the conservation message effectively to the public, calling for a vigorous international programme in support of protected areas.

Such a programme should build from the ground up, being organized in the first instance through regional cooperation between countries. IUCN was requested to support regional programmes to conserve biodiversity, involving the networks of the Species Survival Commission and the Commission on National Parks and Protected Areas. An essential element of such programmes is building the capacity to conserve, so the regional programmes could focus especially on training and institution-building. IUCN was asked to develop guidelines for the training of protected area managers at all levels, emphasizing the concepts, methods, and techniques necessary for staff to be fully aware and effective in their responsibility towards the conservation of nature and the human communities in and around protected areas.

Several constituencies received far greater attention than at previous Congresses. A working group on gender role analysis was established at Caracas, under IUCN's Social Sciences Division, as part of an overall effort coordinated by IUCN to gain a better understanding of socio-economic issues faced by protected areas. Background documentation identified gender-related issues likely to arise in the course of the Congress, and a network of people working on these issues was established during the Congress. One plenary address and two evening sessions were devoted to gender role analysis in the context of protected areas.

The Congress also learned that the wise manager makes a point of involving women in protected area work. While few were satisfied with progress to date, the important role of women in natural resource management was recognized for the positive force it provides in conservation.

As the shortcomings of government policies on protected area conservation become more apparent, increased support from non-governmental approaches is also required. The Congress recognized that communities, private land owners, non-governmental organizations and government agencies must all be part of evolving new partnerships for the management of land and natural resources. Non-governmental land owners and users need to be encouraged to take

conservation actions on behalf of the broader community. The Congress called for all countries to adopt partnership initiatives which encourage and reward private land owners and users – be they communities or individuals – for their conservation management actions. Such initiatives can identify appropriate roles for private and community interests in protected areas strategies, and incorporate partnership approaches in regional planning, sectoral policies, and legal frameworks.

The Congress also recognized that the military, in a time of changing national security needs, could play an important role in conservation. The military can be deployed for protection of critical sites, regeneration of deforested areas, scientific research, managing defense lands (many of which are in remote areas and are important for conservation), and monitoring pollution. The navy can control poaching of maritime resources and manage shore-based installations. The air force is in a position to report on the status of inaccessible areas, forest fires, sighting of endangered species, and management of the large number of restricted areas like airfields and bases. The Congress therefore called for greater efforts to involve the military as allies in support of protected areas.



At the Congress, representatives of the indigenous peoples of the Amazon demonstrated their concern for their region's future.



4. Follow-up to the Congress

These major messages are transmitted through the Caracas Declaration, the Recommendations, and the Action Plan. In addition, the Congress generated plans for over 20 post-Congress publications and a dozen sets of guidelines on crucial issues. These publications will be produced by various parts of IUCN over the coming two years, often involving considerable post-Congress work. The intention is to provide tools to individuals and institutions to enable them to implement – in ways appropriate to their own needs – the principles developed at the Congress.

The Congress called on IUCN to prepare a long-term programme for protected areas, building from the national level and from global environmental perspectives, and including the full range of available funding mechanisms. This will be done through a participatory process which draws on the expertise of both governmental and non-governmental sectors. Based on the Caracas Action Plan, the programme will refer to informa-

tion provided at the Congress and present a clear picture of both the immediate and longer term actions required, detailing what needs to be done, where and by whom.

IUCN will ensure that the programme is presented to appropriate governments, the UN, World Bank, other multinational and bilateral development assistance agencies and leading business organizations of the world. It will continue thereafter to develop and extend the programme, so as to accommodate the array of initiatives stimulated by the Congress.

IUCN was also asked to provide more support to the protected areas constituency through IUCN regional and country offices, so that the network is better able to promote the Caracas Recommendations and Action Plan. To this end, and to meet the greatly increased expectations generated by the Congress, IUCN was asked to strengthen the protected areas staff capacity within the IUCN Secretariat.



5. Conclusions

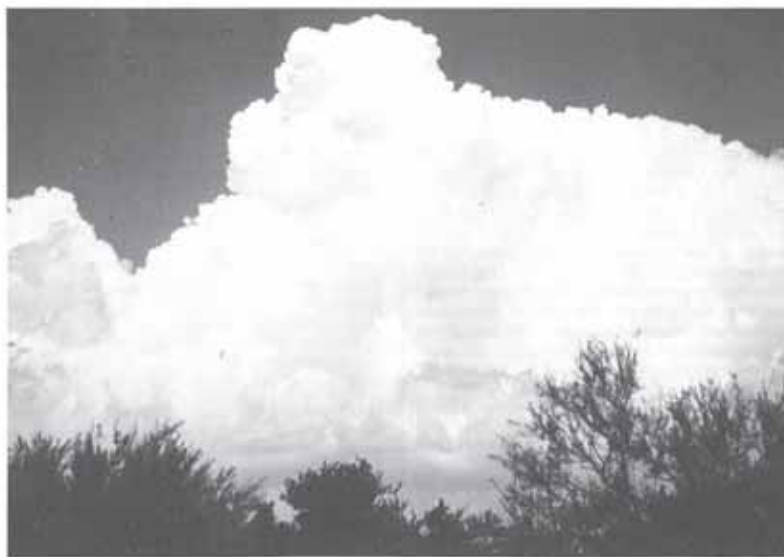
Congress participants had no illusions about the severity of the problems they will be facing in the coming years. Tomorrow's conflicts will be even more difficult than today's, as resource scarcity, economic imbalance, and continuing use of inappropriate technology present formidable challenges to protected areas, and to sustainable use of the environment as a whole. But participants were convinced that such challenges mean that protected areas have an even more important part to play in securing a productive future for humanity.

The Congress also showed that considerable progress has been made on many fronts since the 1982 Congress in Bali, Indonesia, with protected areas now covering over five per cent of the total land surface of the Earth. In expressing its hopes for the coming decade, the Congress expected great benefits to flow from Caracas and called for a Fifth Congress to be held in 2002, possibly in Africa.

But recognizing the accelerating rate of change, the Congress also suggested a smaller event, to monitor progress in the implementation of the

decisions taken in Caracas, in five years time. IUCN was asked to consider convening other world and regional congresses on key conservation themes – possibly in conjunction with IUCN General Assemblies – so that the agenda for future World Congresses on National Parks and Protected Areas can focus on specific management issues.

In building on the experience of the past decade, the Congress defined innovative solutions which will require greatly improved collaboration between disciplines. The workshops provided advice on what is required to help people on the ground carry out their important work more effectively, yet recognized that every site has its own particular solutions to its unique problems. More generally, the Congress provided policy advice to governments and international agencies to help ensure that investments in development will help to support protected areas, not degrade them. And it provided a vision of a healthy environment for the planet, where biological and cultural diversity alike are conserved for the benefit of all.



Protected areas can help humanity respond to tomorrow's challenges.

The Caracas Declaration



**Protected areas
and the human future**



The Caracas Declaration

Protected areas and the human future

WE, over fifteen hundred leaders and participants deeply committed to world conservation, brought together by the World Conservation Union for the Fourth World Congress on National Parks and Protected Areas in Caracas, Venezuela, between 10 and 21 February 1992, ADOPT this Declaration of our belief in the vital importance of well-managed national parks and protected areas to all people.

WE RECOGNIZE THAT:

- nature has intrinsic worth and warrants respect regardless of its usefulness to humanity;
- the future of human societies depends upon people living in peace among themselves, and in harmony within nature;
- development depends on the maintenance of the diversity and productivity of life on Earth;
- this natural wealth is being eroded at an unprecedented rate, because of the rapid growth in human numbers, the uneven and often excessive consumption of natural resources, mistaken and socially harmful styles of development, global pollution and defective economic regimes, so that the future of humanity is now threatened;
- this threat will not be averted until these problems have been redressed, the economies of many countries have been strengthened, and poverty has been conquered through processes of sustainable development;
- many people must modify their styles of living and the world community must adopt new and equitable styles of development, based on the care and sustainable use of the environment, and the safeguarding of global life-supporting systems;

WE CONSIDER THAT the establishment and effective management of networks of national parks and other areas in which critical natural habitats, fauna and flora are protected must have high priority and must be carried out in a manner sensitive to the needs and concerns of local people. These areas are of crucial, and growing, importance because:

- they safeguard many of the world's outstanding areas of living richness, natural beauty and cultural significance, are a source of inspiration and are an irreplaceable asset of the countries to which they belong;
- they help to maintain the diversity of ecosystems, species, genetic varieties and ecological processes (including the regulation of water flow and climate) which are vital for the support of all life on Earth and for the improvement of human social and economic conditions;
- they protect genetic varieties and species, which are vital in meeting human needs, for example in agriculture and medicine, and are the basis for human social and cultural adaptation in an uncertain and changing world;
- they may be home to communities of people with traditional cultures and irreplaceable knowledge of nature;

- they may contain landscapes which reflect a long history of interaction between people and their environment;
- they have immense scientific, educational, cultural, recreational and spiritual value;
- they provide major direct and indirect benefits to local and national economies and models for sustainable conservation which may be applied elsewhere in the world.

ACCORDINGLY, and bearing in mind the message of *Caring for the Earth: A Strategy for Sustainable Living*, the *Global Biodiversity Strategy* launched at this Congress, and the earlier messages of the *World Conservation Strategy*, the *World Charter for Nature* and the World Commission on Environment and Development, WE, the PARTICIPANTS OF THE CARACAS CONGRESS:

1. REAFFIRM the responsibility of humanity to safeguard the living world;
2. EMPHASIZE the spiritual, social, economic, scientific and cultural importance of national parks and other kinds of protected area;
3. STRESS that the conservation of global biological diversity and the achievement of sustainable development depends upon effective and vigorous international action to reform the world's economic and trading systems, and to halt the global pollution that threatens to bring about climate change;
4. STRONGLY URGE all governments, regional and local authorities and international institutions to include protected areas as integral elements in development policies, programmes, plans and projects;
5. ENCOURAGE communities, non-governmental organizations, and private sector institutions to participate actively in the establishment and management of national parks and protected areas;
6. URGE all governments, local authorities, international institutions and non-governmental organizations to inform and educate all sectors of society about the importance of protected areas, and the economic, social and environmental benefits they provide, and so make the public active partners and supporters in their protection;
7. INSIST THAT industry (including tourism, agriculture, forestry and the extraction of oil and minerals) must adopt the highest standards of environmental protection and eliminate damaging impacts on protected areas;
8. STRONGLY URGE industry, especially multi-national corporations, and governments, to ensure that any exploitation of biodiversity conforms with rigorous controls established by the sovereign State concerned;
9. EMPHASIZE the vital role of environmental education and urge all governments to strengthen their programmes, especially in and relating to national parks and protected areas, constituting appropriate national organizations to develop and coordinate this process;
10. EMPHASIZE that although national parks and other protected areas are of special importance, all lands and seas should be managed so as to maintain (or restore) the highest environmental quality;
11. STRESS the need for international cooperation and assistance to place the latest knowledge and best available technology at the disposal of all governments and especially their protected area managers.

TO THESE ENDS WE STRONGLY URGE ALL GOVERNMENTS AND APPROPRIATE NATIONAL AND INTERNATIONAL BODIES:

1. To take urgent action to consolidate and enlarge national systems of well-managed protected areas with buffer zones and corridors, so that by the year 2000 they safeguard the full representative range of land, freshwater, coastal and marine ecosystems of each country and allow these ecosystems space to adapt to climate change;

2. To ensure that the environmental and economic benefits which protected areas provide are fully recognized in national development strategies and national accounting systems;

3. To support the development of national protected area policies which are sensitive to customs and traditions, safeguard the interests of indigenous people, take full account of the roles and interests of both men and women, and respect the interests of children of this and future generations;

4. To ensure that effective international, national, regional and local administrative, legal, accounting and financial mechanisms for supporting protected areas are established as a matter of priority and regularly reviewed;

5. To allocate adequate financial and other resources so that, once designated, protected areas are managed effectively, to achieve their intended objectives;

6. To strengthen environmental education, and to provide training that will improve professionalism in the management of protected areas;

7. To facilitate the establishment of effective and efficient networks of NGOs cooperating at a local, national and international level to further national park and protected area objectives;

8. To recognize the significance of demographic change and its consequences for the survival of biological diversity and to take appropriate actions to reduce this threat;

9. To foster publically funded scientific research and monitoring that will improve the planning and management of protected areas, and to use such areas as sites for studies that will improve understanding of the environment;

10. To develop mechanisms that will allow all sectors of society, especially long-standing local populations, to be partners in the planning, establishment, and management of protected areas, and will ensure they share equitably in the associated costs and benefits;

11. To participate actively in global and regional Conventions and other legal instruments, action programmes, and procedures to promote protected terrestrial, coastal and marine areas and the conservation of biological diversity;

12. To work energetically to safeguard the world's tropical forests, particularly those of Amazonia which are reservoirs of outstanding biological diversity and under severe pressure;

13. To strengthen international technical and financial cooperation that will assist developing countries to establish and manage protected areas and to safeguard biological diversity;

14. To cooperate to safeguard species, ecosystems and landscapes that extend across national borders and therefore require protection through the collaboration of neighbouring countries.

RECOGNIZING that action to safeguard the living riches and natural beauty of the Earth depends on the commitment of all people, WE PLEDGE OURSELVES to work wholeheartedly to implement the provisions of this Declaration.

EMPHASIZING that the establishment and maintenance of protected areas is essential to sustaining human society and conserving global biological diversity, WE INVITE THE PRESIDENT OF THE REPUBLIC OF VENEZUELA to convey this Declaration to the Earth Summit, to be held at Rio de Janeiro, Brazil, in June 1992 with the purpose of ensuring that its conclusions are incorporated in Agenda 21, the agreed world action plan for the next century.

Caracas Action Plan





1. Introduction

The late 20th century is a time of unprecedented ecological, political, and economic change. In responding to such change, governments are calling for increased international cooperation to achieve forms of development which are sustainable. A significant contribution to the debate came from the IVth World Congress on National Parks and Protected Areas, held in Caracas, Venezuela, from 10 to 21 February 1992. Participants at this once-a-decade meeting reviewed and re-defined policy and adopted a Declaration and conclusions which have far-reaching implications for humanity.

A few months later, the policies articulated at the United Nations Conference on Environment and Development (the "Earth Summit", held in June 1992 in Rio de Janeiro, Brazil), reaffirmed that protected areas can actively benefit people everywhere, and should therefore be considered an important part of the sustainable development process.

The theme of the Caracas Congress, "Parks for Life," underlined that point. Protected areas are needed in order to



At risk are our most fundamental resources; air, soil and water.

safeguard biological diversity in its own right and as an asset for the future. They provide many services to humanity, ranging from the practical to the aesthetic: from watershed protection to spiritual inspiration. Indeed, they are often the most effective form of land use, in economic as well as ecological terms. The global list of protected areas - which now includes over 8500 sites protecting some 850 million hectares in more than 120 countries - indicates government commitment to ensuring that this generation passes on to future generations a world which is at least as diverse and productive as the one we enjoy today.

However, these assets are under increasing threat because of a dramatic expansion in human demands upon the environment: demands which have their origins in exponential population growth, waste, and excessive consumption. As a result, the decade of the 1990s, perhaps more than any previous period in human history, can be expected to witness intense competition for the use of natural resources and accelerating rates of change on a global scale which will affect the even the most fundamental resources on which people depend: air, soil and water. If protected areas are to be a successful form of land use, they must adapt to these changes.

This Action Plan was generated by the Congress as a vehicle for converting the rich, diverse, and complex experience of Caracas into a simple and straight-forward framework for collective action by professionals involved with protected areas. It is supported by Recommendations, reports from 49 workshops held at the Congress, and publications resulting from the Congress (to be issued over the coming several years). It is a major contribution to implementing *Agenda 21* (the action plan from the Earth Summit), the protected area elements of the new Convention on Biological Diversity and the *Global Biodiversity Strategy*, and the philosophy contained in *Caring for the Earth*.



2. Major protected area issues

The Congress focused on a number of issues of global concern. *First*, what can protected areas contribute to overall strategies for sustainable development? Environmental destruction and economic underdevelopment are consequences of relationships between people with diverse and often conflicting economic interests. Local patterns of land and sea tenure, income inequities among rural people, denial of the rights of indigenous peoples to land and resources, inappropriate interest and exchange rates, inequities in the commodities trade, and agricultural subsidies can all have major influences on the success of a protected area. Such factors can seldom be addressed effectively by the protected area manager, yet they are critical to the long-term success of the protected area system. The various economic, physical, and regional planning approaches therefore must provide a viable framework for fully integrating protected area programmes into the pursuit of sustainable and equitable development.

Second, how can protected areas command broader support from society? Resource managers, users, and beneficiaries all must be involved in generating political and financial support. Experience shows that planning which fosters full participation is likely to be most successful over the long run, though it is sometimes more expensive and complex initially. Such approaches can consolidate and expand support for protected areas, especially from international and non-governmental organizations, private landowners, and private corporations. Local communities must receive particular consideration and protected area managers must strive to dignify and give value to local cultures and ways of life.

Third, how can protected area management be made more effective under current and expected economic conditions? The magnitude and complexity of protected area management requires that a broad range of institutions and individuals be involved, using approaches that increase cooperation and substantially reduce friction. Protected areas must be managed so that local communities, the nations involved, and the world community all benefit. This calls for enhanced management capacity; expanded protected area infrastructure and staffing; more and better training; additional funding; and improved research and information management systems to

enhance the capacity to predict changes and adapt to them.

Fourth, how can more effective international support be mobilized? Protected areas provide many benefits at the international level, justifying greatly increased investments from international sources through such mechanisms as the World Heritage Convention, the new Convention on Biological Diversity, the Wetlands (Ramsar) Convention, the Biosphere Reserves Programme, the Global Environment Facility, and a wide range of bilateral supporters. International investment in protected area systems needs to be promoted through clearly identifying needs and benefits.



Protected area management must respect local cultures and ways of life.



3. Actions for adapting to change

The actions needed to strengthen, improve, and extend protected areas require both skills and wisdom. The experts on protected area management present at the Caracas Congress recognized the futility of prescribing general actions that would be both meaningful and relevant to all protected areas. Each country needs its own Action Plan, with measurable objectives, timetables, and budgets. Each protected area has different requirements, and general prescriptions need to be adapted to meet specific needs. However, based on the issues identified above, four basic objectives emerged as being particularly worthy targets for worldwide cooperation in support of field action. These basic objectives and a checklist of the highest priority actions and associated tasks follow.

Objective 1. **Integrate protected areas** **into larger planning** **frameworks**

Action 1.1. Develop and implement national protected area system plans.

Develop national system plans as the primary national policy document for strengthening management and extending protected area coverage. Base state or provincial plans on the national plan.

Identify all the groups with a particular interest in protected areas and enable them to participate actively in the system planning process. Review the system plan widely with all potential interest groups and agencies before final adoption and periodically thereafter.

Mobilize the best available science to identify critical sites that need to be included in the system if the nation's full range of biodiversity is to be protected, and to provide guidance on appropriate management policies for the individual sites and their surrounding lands.

Include within the system a range of terrestrial and marine protected area categories that ad-

dresses the needs of all interest groups, including agriculture, forestry, and fisheries. Ensure that all sites managed for conservation objectives are incorporated, including tribal lands, forest sanctuaries, and other sites managed by agencies other than the main protected areas management authority (for example, private landowners, local communities, and the military).

Action 1.2. Integrate national protected area system plans into economic development planning frameworks.

Seek to ensure that protected areas are fully considered in development planning through working closely with relevant ministries and presenting system plans to concerned agencies, organizations and individuals.

Seek opportunities to influence development plans to ensure that protected area concerns are reflected.

Support efforts of all relevant support institutions and organizations to identify clearly their responsibilities under the system plan, and to obtain sufficient funding to carry out the necessary actions.



Science should be mobilized to support protected area design and management.

Action 1.3. Plan protected areas as part of the surrounding landscapes.

Recognize the landscape scale – incorporating one or more protected areas and sufficient surrounding lands to maintain the integrity of the region's ecosystems – as the level at which the benefits of biodiversity and biological resources can be provided to local communities, and ecosystem services can be protected and managed.

Develop buffer zones around protected areas, and corridors joining them.

Develop means appropriate to local communities to ensure that any use of wild resources is sustainable both within and outside protected areas.

Promote the restoration of degraded ecosystems in protected areas and extend restoration activities to adjacent regions.

Action 1.4. Develop techniques for assessing and quantifying benefits of protected areas.

Assemble existing studies of benefits derived from protected areas, including benefits which cannot be expressed in purely monetary terms. Disseminate information on benefits associated with different management categories, and prepare guidelines on how such benefits can be determined.

Prepare comprehensive inventories of the assets of each protected area – landscapes, cultural and historic sites, ecosystems, species and genetic resources – and recognize these resources as capital assets.

Develop methodologies for economic evaluation of protected areas and use these to determine and defend resource use priorities.

Objective 2. **Expand support for** **protected areas**

Action 2.1. Identify the key protected area interests of various groups.

Determine the potential range of products and services that can be provided by protected areas, including those relevant to non-traditional interest groups, such as religious groups, artisans, users of traditional medicines, and the military.

Identify the groups that have a stake in these services and products. Promote the sharing of views and experiences, and the development of



The benefits of protect areas should be recognized and quantified.

organizations to represent the interests of groups not yet organized.

Explore means for enhancing the benefits obtained by some groups from protected areas without diminishing those of others.

Action 2.2. Recognize priority concerns for local communities.

Work with local communities to determine how management of the protected area can help meet local needs. Develop an understanding of local resource issues through building on local knowledge and perceptions of needs. Develop consultative processes that encourage competing groups to identify optimal management solutions acceptable to a majority.

Promote attitudes among protected area managers that encourage recognition of the need of local communities for equitable and sustainable development.

Seek the support of local communities in promoting protected areas by offering opportunities for influencing decision-making, for example through representation on local protected area management boards and at public debates on management issues.

Based on examples of success, publish guidelines for establishing co-management and co-financing arrangements that take into account all interested groups.

Develop participatory research, involving local people and institutions, as a tool for planning, a



The Action Plan calls for expanded training and strengthened education and information programmes.

means of sharing basic information, and a mechanism for building working relations among interest groups.

Action 2.3. Stimulate informed advocacy.

Assess the vested interests of groups and take account of these in seeking greater political and financial support for protected area programmes.

Reinforce the support of key interested groups through award schemes, public ceremonies, and personal communications.

Strengthen education and information programmes within protected areas, and widely disseminate information on protected area issues.

Objective 3. Strengthen the capacity to manage protected areas

Action 3.1. Expand training opportunities at all levels.

Establish clear career development possibilities, with associated training opportunities and commensurate scales of remuneration.

Expand and strengthen the global network of regional (multicountry) protected area training colleges to prepare protected area personnel for senior posts.

Provide diverse training opportunities for field staff.

In training courses, emphasize skills in participatory and collaborative management at all levels.

Action 3.2. Improve management of protected areas.

As an essential prerequisite for effective management, prepare a management plan for each protected area setting out what needs to be done, why, by whom, when, and with what resources.

Establish a set of professional standards for protected area staff, and improve the capacity of protected area managers to monitor their own performance through indicators of management effectiveness.

Develop innovative ways of accomplishing management tasks by using other than regular staff, such as conservation volunteers, youth corps groups, prisoners, the army and the unemployed (where appropriate).

Action 3.3. Develop means of increasing financing and generating revenue.

Include strategies and investment plans for the financing of protected areas in the national system plan. Where feasible, develop innovative financing mechanisms such as debt-for-nature swaps, trust funds, and earmarked taxes. Develop means such as service fees and voluntary "green taxes" to capture the potential contributions of environmentally sensitive corporations and individuals.

Establish concessions for products and services produced by protected areas, including payments from hydroelectric generating facilities which benefit from the watershed protection services provided by the protected area.

As a supplement to budget allocation, introduce concession and entrance fees and reinvest them in management.

Work with non-governmental organizations to develop funding campaigns, special tours, trust funds, and the sale of arts, crafts, and souvenirs to support protected area management.

Action 3.4. Improve the application of science to management.

Ensure that management is science-based, and that research carried out in protected areas can contribute effectively to management. Where feasible, extend research results to assist surrounding communities and resource users.

Give priority to research on acute and chronic management problems, including land-based marine pollution and other pollution outside protected areas, control of exotic species, and management of small populations of wildlife.

Develop means for harmonizing the work of the many institutions active in information gathering and management. Establish or strengthen global, regional, and national protected area documentation centres, and improve linkages between them.

Provide basic infrastructure for scientific research in appropriate categories of protected areas, including staff assigned to coordinate scientific research programmes within protected areas.

Action 3.5. Give attention to the special requirements for managing marine protected areas.

Contribute to a global system for categorizing coastal marine regions as the basis for assessing the adequacy of protected areas in these regions.

Participate actively in coastal zone management programmes and ensure that both marine and terrestrial protected areas are used as key management tools in such programmes.

Develop and implement integrated management programmes for marine protected areas.

Objective 4. Expand international cooperation in the finance, development, and manage- ment of protected areas

Action 4.1. Clarify the roles and functions of institutions at all levels.

Support the development of a Global Protected Areas Investment Service to help coordinate the inputs of international organizations worldwide in implementing this Action Plan.

Mobilize multi-institutional support to protected area management.

Link international technical assistance to the development of effective coordinating mechanisms for promoting support to field action.

Action 4.2. Develop international and regional action plans to support implementation of the priorities established in national protected area system plans.

Support the development of international guidelines for terrestrial and marine biogeographical coverage, effective management, and the assessment of threats to protected areas.

Contribute to an agenda for coordinated international action based on the priorities identified in national system plans, and keep the agenda up to date through regional meetings.

Integrate the contributions of potential international supporters (inter-governmental institutions, non-governmental organizations, and multi-national corporations) into regional and global action plans.

Action 4.3. Re-invigorate existing frameworks for international cooperation.

Support regional networks of protected area personnel as a basis for international cooperation.

Give highest priority for international investment to developing protected area institutions and systems.

Promote greater investment by governments, conservation organizations, and multi-national corporations in the management of protected areas recognized under international agreements, extending these agreements wherever possible.

Distribute information on new technical publications to protected area managers through newsletters and other means, and develop means whereby protected area managers may request copies of relevant technical publications through regional documentation centres. Systematically distribute basic technical references to major protected area documentation centres and management agencies.



International cooperation is essential to encourage adequate investment and support for protected areas.



4. Implementation

Implementing this Action Plan requires the involvement of large numbers of international, regional, national, and local governmental and non-governmental organizations. Governments must continue taking the lead in developing overall policy, establishing administrative structures, monitoring networks and guiding the financing and management of protected areas.

In discharging this responsibility, they will need to call upon significantly greater levels of active support from other organizations than in the past. This could involve allocation of management responsibility to institutions such as non-

governmental organizations, corporations, local communities, or private land owners.

IUCN, through its Secretariat and Commission on National Parks and Protected Areas, will promote this Action Plan and support the preparation of more detailed Action Plans for specific regions of the world. These will provide guidance for coordinated action, and stimulate the development and/or review of national system plans. IUCN will also assist governments, international agencies, and others to determine how best they can contribute to the implementation of this Action Plan and increase their investments in protected areas.



5. Conclusion

This Action Plan seeks to respond to the urgent challenges identified at the IVth World Congress. Can we maintain the physical, economic, and spiritual resources that sustain us? Can we retain at least representative samples of the natural and cultural wealth of our planet? Or will our natural and human systems collapse under the weight of increasing competition for resources and expanding populations? The answers to these questions depend on how societies respond to the many challenges before them. While protected areas alone cannot solve the problems of modern society, they can make an important contribution to a better future for all.

The Congress called for replacing the negative image of protected areas as somehow "set aside" from the mainstream concerns of society by a more positive recognition of protection as the process of safeguarding an area's distinctive contribution to the human community. Such a change in emphasis reflects the many values provided by wild habitats, and sees conservation as the process of maintaining essential environmental resources, benefits, and services. Protected areas must become demonstrations of how an entire country should be managed.

Many at the Congress were encouraged by the fact that a wide range of governments and or-

ganizations throughout the world had made public commitments to substantially increased support for protected areas. At the same time, Congress participants were frustrated by the slowness or inability of governments and institutions to convert public statements into effective action.

Protected area managers from all corners of the Earth reminded the Congress of one indisputable fact. While the underlying factors which bring about success or failure of conservation efforts are to be found in a country's approach to economic development, the struggle to retain meaningful parts of the world's vast biological, physical, and cultural wealth will finally be won or lost in the field. The thousands of dedicated individuals working to manage protected areas effectively need much stronger support if they are to succeed in the tasks they have been assigned.

Above all, this Action Plan is an urgent bid for cooperation – cooperation in marshalling knowledge, experience, finance, and human resources, and cooperation in channelling them simply and efficiently to colleagues in the field. IUCN invites its members and collaborating organizations to review their own programmes in light of the IVth World Congress on National Parks and Protected Areas, and to use this Action Plan as a framework for collective and mutually reinforcing effort.

Recommendations



These Recommendations were prepared by the Recommendations Committee established at the IVth World Congress on National Parks and Protected Areas. The recommendations are based on information resulting from the seven plenary sessions and 49 workshops held at the Congress. Approved by the Congress at its closing session on 21 February, the Recommendations are designed to identify the most important global issues facing protected areas in the 1990s. The reports of the Congress workshops present more detail on many of these issues, and the publications resulting from the Congress will provide guidelines on implementation.



RECOMMENDATION 1:

Strengthening the constituency for protected areas

Public concern about the environment continues to grow. Most governments now accept that conservation is important. The issue now is how conservation measures can be implemented under various social, economic and political constraints. Social perceptions of protected areas have also changed considerably during the last decade. To generate more support for protected areas, governments need to be convinced of the political importance of the issue. This in turn demands fuller information about the benefits that protected areas provide, and other evidence to support the case for their establishment and maintenance. An essential part of developing support for protected areas is to implement environmental education for both local communities and the nation at large.



Protected areas provide benefits to many sectors in society, but greater effort is needed to inform the general public of these benefits.

The IVth World Congress on National Parks and Protected Areas RECOMMENDS that:

- a. governments, non-governmental organizations and international agencies work to achieve the integration of protected area conservation into development policies, so as to build a broader base of conservation support;
- b. governments and the many other interests concerned, cooperate in national and regional programmes of environmental education and of public awareness so as to promote the benefits of protected areas in enhancing the quality of life of urban and rural communities;
- c. protected area agencies, non-governmental organizations, universities and schools cooperate in site-based education for visitors about the value of protected areas, and their role in sustaining society;
- d. similarly, such organizations cooperate to encourage local community education in and

near protected areas so as to enlist community support for protected area needs; in so doing, they give special attention to the social and economic needs of local communities and to the roles of women and young people in supporting actions to conserve natural resources;

- e. IUCN provide information on public, national and international, private and community

based approaches which benefit protected areas or which affect them adversely; and

- f. protected area agencies and non-governmental organizations use this information to secure political and other support for protected areas, identify those sectors whose activities impinge adversely on protected areas and seek their cooperation in maintaining the integrity of such areas.



RECOMMENDATION 2:

Global change and protected areas

Protected areas in many parts of the world are affected by increases in human numbers and changes in resource use. In many developing countries, protected areas are under pressure because of the need for land and natural products as essential bases for development. Major changes outside the boundaries of protected areas can affect their ecological and institutional integrity. Changes in human population, climate and pollution are particularly significant. Trends in all these factors must be taken into account when policies for protected areas are formulated.



Change is the only constant in today's world, but the direction of change is uncertain. Protected areas can provide one of society's most useful instruments for adapting to change.

Protected areas and demographic change

Protected areas are intended to bring lasting benefits to humanity. However, many protected areas face pressure from increasing populations whose economic well-being has suffered from cumulative neglect of sustainable use of land and other resources. Detailed knowledge of the people whose lives are affected by the creation and management of parks is as important as that of the plant and animal species to be conserved. Specific knowledge of the cultural and socio-economic characteristics of locals including the age and gender division of labour and other trends is the basis for measures to promote sustainable use of natural resources, alleviate poverty, raise the quality of human life and create positive support for protected areas.

The IVth World Congress on National Parks and Protected Areas RECOMMENDS that governments, protected

area agencies and cooperating agencies:

a. undertake, as an essential element of the design and management of protected areas, social and demographic analyses of the local human populations to determine the present situation and assess future trends in population size, distribution, movement (e.g. migration), age and sex structure, division of labour, and the dependence of communities on local resources;

b. identify present and future threats to the sustainability of protected areas, particularly from agricultural, industrial and other developments and changes in land use; and periodically monitor changes in these;

c. examine the interaction between local people and protected areas to determine the likely ef-

fects of protected areas on the quality of human life; the potential for sustainable use of protected areas for socio-economic development; and the unique insights and knowledge of local communities which can be incorporated so as to secure the integrity of protected areas;

d. undertake social group analyses to identify the differential roles played by women, men, young and old, in the management of natural resources; the interplay between human activities and the natural resource base; and how local communities can contribute to the design, implementation and management of protected areas; and

e. address more rigorously the major issue of population growth, which threatens the stability of the whole world.

Climatic change and protected areas

Climatic change represents a critical and urgent threat to all ecosystems and species, including particularly those in coastal and marine environments. Existing terrestrial, coastal and marine protected areas are not immune from these threats and may not provide adequate future safeguards for the continued survival of



Protected areas will be most useful in adapting to change when they are relatively large, have a wide altitudinal range and are connected by corridors which enable the movement of species.

existing ecosystems and species in a changing world. Moreover, non-climatic, anthropogenic stresses and barriers to migration represent threats to natural marine ecosystems, and may exacerbate the impacts of climatic change and adversely affect the natural capacity of the systems to respond to environmental change.

The IVth World Congress on National Parks and Protected Areas, therefore, RECOMMENDS, in respect to terrestrial ecosystems, that:

a. governments, international agencies and the conservation community initiate or expand research programmes to identify climatic change impacts and establish the relationship between ecosystem processes, climate and management interventions. Specifically, such programmes should:

- involve protected area managers in programmes to determine which habitats and species are at risk on a regional scale;
- develop networks of protected areas actively involved in monitoring global change;
- establish appropriate data management, information and documentation systems to support the analysis of climatic change impacts; and
- apply the biosphere reserve model more widely;

b. governments and international bodies recognise that the present extent, range and number of protected areas do not provide adequate protection to ecosystems and species, and take active measures to extend the coverage of systems and species threatened by global climatic change, giving special attention to large areas, areas with a wide altitudinal range, and corridors between protected areas;

c. governments and international bodies develop methodologies for assessing species and ecosystem vulnerability and capacity to respond to future climatic change; and extend the scientific basis of management responses and options in the face of a rapidly changing world;

d. governments and international bodies facilitate communication between scientists, planners, managers and decision makers at national, regional and international levels on the link between climatic change and protected areas;

e. governments develop action plans that take into consideration the need to protect the resilience of natural systems in order to secure biodiversity for sustainable development; and

f. governments and international bodies redouble their efforts to decelerate those processes of human activity which are contributing to climatic change.

And further RECOMMENDS, in respect to coastal and marine ecosystems, that:

a. all parties involved in the planning and management of coastal and marine protected areas take the following points into consideration in planning for climatic change:

- as many of the functional components of the system as possible should be included within the management regime;
- neighbouring systems and their management may have a significant impact on marine and coastal protected areas;
- long-term monitoring programmes are required to provide the basis for assessments and research; and
- new approaches are needed to effect exchange of relevant information across disciplinary and institutional boundaries at national and international levels;

b. governments take prompt and effective action within the limits of their capacities to reduce non-climate related sources of stress on coastal and marine systems;

c. the international conservation community, in consultation with concerned governments and international agencies, designate a network of suitable sites within the global system of marine protected areas to serve in monitoring the impacts of climatic change; and

d. governments adopt the concept of integrated management of coastal areas in planning the use and development of their coastal zones, including marine protected areas in a changing environment.

Changes related to pollution

Biological diversity, both within and outside protected areas, is threatened in many parts of the world by various forms of chemical pollution, including acid deposition, the depletion of stratospheric ozone, and emissions from mining, industry and energy generation. While the only satisfactory remedy is the abatement of pollution to the point at which adverse impacts cease, local action within and around protected areas can provide some mitigation. Protected areas can be protected from widescale pollution only by changes in energy and environmental policy and enhanced enforcement of environmental legislation. Urgent attention needs to be given to this topic, building on the draft guidelines prepared by a CNPPA-sponsored meeting on Parks, Pollution and People (Krkonose, Czechoslovakia, May 1990).



The coastal zone will experience some of the most severe impacts of global change. A global system of coastal protected areas will be essential in monitoring the impacts of such change.

The IVth World Congress on National Parks and Protected Areas RECOMMENDS that:

a. radical efforts be made to reduce sulphur emissions, phase out the use of persistent chemicals, such as PCBs and TBT, and thoroughly test all new compounds before their introduction;

b. monitoring programmes within protected areas are an important element in the environmental management of a regions which record both physio-chemical factors (quality of water, air and soil) and biological factors (biodiversity, species distribution, growth rates);

c. where protected areas are suffering the effects of pollution, action be taken to restore habitat quality, e.g. by liming of surface waters affected by acid rain (although prevention will always be preferable to cure – and cheaper);

d. government policies for pollution reduction include enforcement and incentives which encourage good environmental management practices in industry, the development of clean technologies and the establishment of industry associations for environmental management; and

e. education and interpretation on protected areas include information about the impact of pollution on such areas.



RECOMMENDATION 3:

Global efforts to conserve biological diversity

The loss of biodiversity has reached crisis proportions and if present trends continue up to 25 per cent of the world's species may be sentenced to extinction or suffer severe genetic depletion in the next several decades, accompanied by equally significant and alarming degradation of habitats and ecosystems. This loss of biological diversity is impoverishing the world of its genetic resources, its species, habitats and ecosystems.

All species deserve respect, regardless of their usefulness to humanity. This principle was endorsed by the United Nations General Assembly when it adopted the World Charter for Nature in 1982. The loss of the living richness of the planet is dangerous, because the environmental systems of the world support all life, and we do not know which are the key components in maintaining their essential functions. Many existing initiatives by non-governmental, governmental, and inter-governmental institutions are critical elements in the response to the crisis but are manifestly insufficient in magnitude or scope of coverage.



Governments and international agencies should set an example of sustainable living by reforming policies and practices that intensify the loss of biodiversity and encourage depletion of resources.

The launch of the *Global Biodiversity Strategy* provides a clear indication of the scope of actions required at local, national, and international level. National Parks, Biosphere Reserves and other protected areas are essential elements of the Strategy. Such areas serve a wide range of purposes, but the existing protected areas are often poorly representative of native biotas and ecosystems. Further, opportunities to protect biological diversity are being rapidly diminished by non-sustainable forms of development.

The IVth World Congress on National Parks and Protected Areas RECOMMENDS that:

- a. governments make the protection of biological diversity, including species and habitat richness, representativeness and scarcity, a fundamental principle for the identification, establishment, management, and public enjoyment of national parks and other protected areas;
- b. all countries urgently undertake surveys to identify additional sites of critical importance for conservation of biological diversity, and, wherever possible, accord total protection to them. Harvesting should be relocated from primary to secondary forests and tree plantations in previously deforested areas; or – where this is not possible – sustainable forest harvesting systems which favour natural species diversity should be developed and introduced;
- c. countries, with the support of regional and international agencies, take steps to survey and safeguard the genetic resources which occur in their protected areas; the financing for those studies and surveys should come from regular budgets or donations, not loans;
- d. countries, which are sovereign and have control over the use of their genetic resources, protect their interests in the increasing market of biological resources;
- e. governments and international agencies set an example of sustainable living by reforming policies and practices that intensify the loss of biological diversity and encourage the erosion of resources;

f. governments provide incentives for grassroots participation in biodiversity conservation since effective conservation ultimately depends on local action, where people live and work. Land reform and development assistance should stress the sustainable use of resources. Particular emphasis should be placed on understanding and supporting grassroots efforts by women in the sustainable use of resources in and around protected areas;

g. governments and local institutions, with the support of international organizations,

strengthen and expand networks of protected areas; greater support is needed for national parks and other protected areas, and for zoos, botanic gardens and seed banks which complement *in situ* conservation; and

h. an independently-funded global early warning system be established urgently to monitor and act on threats to species and habitats; the international convention on biodiversity be ratified; and an international panel be created to establish conservation norms and facilitate long-term planning and coordination.



RECOMMENDATION 4:

Legal regimes for protected areas

Protected areas require a mutually reinforcing system of international and national environmental law for their establishment, maintenance and management. International treaties establish a harmonized set of obligations with regard to areas within national jurisdictions and activities having effect beyond national jurisdictional boundaries. These obligations must be reflected in national legislation; otherwise, the treaties cannot be implemented. In turn, innovative national legislation provides a basis and impetus for further international law. The dynamic interaction between the two levels is thus conducive to further progress.

Both the international and national, as well as the sub-national, systems of environmental law must be strengthened if designated protected areas are to be managed effectively.

International conventions

Several international conventions in support of protected areas have been adopted and implemented. The Convention on Wetlands of International Importance (Ramsar Convention) and the World Heritage Convention are the two major global treaties for protected area establishment and management, but many other conventions, especially regional ones, also provide for establishment and management of protected

areas. In October 1991, for example, the Antarctic Treaty Parties adopted a Protocol on Environmental Protection to the Antarctic Treaty which designated the whole of Antarctica as a "natural reserve, devoted to peace and science".

Despite these initiatives, gaps remain in the international system for protected areas. The two global conventions do not cover all habitat types and at regional level large areas of the globe are as yet without nature conservation conventions. Furthermore, certain of the existing conventions have not yet been provided with adequate machinery and resources to develop their full potential.

In view of this situation, there has been the recognition of the need for a new global treaty for the conservation of biological diversity, mostly through *in situ* conservation measures in protected areas. The Biodiversity Convention includes provisions for the establishment and management of protected areas with adequate financial and institutional arrangements, including independent scientific advisory services, as a major means for conserving biodiversity.

The IVth World Congress on National Parks and Protected Areas, therefore, RECOMMENDS that:

- a. all states which have not yet done so adhere as soon as possible to conventions important for protected areas, including the Ramsar and World Heritage conventions, regional conventions and protocols;
- b. the World Heritage Convention criteria be amended to take account of natural/cultural



The World Heritage Convention criteria need to be amended to take into account sites where human communities demonstrate a harmonious blend of nature and culture.

landscapes/seascapes and living cultures which are an harmonious blend of nature and culture;

c. national legislation be prepared and financial allocations be made to implement these conventions;

d. international agencies and non-governmental organizations give stronger support to developing countries to assist them to implement conventions important for protected areas, including support to promote greater public awareness of the conventions and the public they serve;

e. international convention secretariats develop cooperative mechanisms to help coordinate activities carried out under conventions important for protected areas;

f. states seek mechanisms to develop better transboundary cooperation in the establishment and management of protected areas which extend across national borders;

g. the Antarctic Treaty Parties take steps to ratify the Protocol on Environmental Protection at the earliest opportunity, and in the meantime observe its provisions on a voluntary basis; and establish an administrative secretariat to the Antarctic Treaty which is essential to the effective implementation of the Environmental Protocol; and

h. IUCN Members and other relevant non-governmental organizations, including SCAR, continue to promote the comprehensive environmental protection of Antarctica through participation in appropriate Antarctic Treaty fora and by keeping the public informed of developments in Antarctic conservation.

National legal strategies

National legal strategies are an essential component of the conservation of protected areas and the preservation of biological diversity. The last decade has seen a dramatic growth in the need for and development of conservation laws. In particular, considerable growth has taken place at the sub-national, regional and local level in the establishment of protected areas. The use of innovative legal strategies for the conservation and management of both public and private land for conservation objectives has also increased.

Despite these gains, much progress remains to be made. The legal status of many protected areas remains uncertain and in some countries the quality and implementation of protected areas legislation is poor. Existing laws often do not give sufficient attention to societal customs and norms. Regulations, where promulgated, are often not enforced. Many countries do not have sufficient staff or resources to enforce the law.

The IVth World Congress on National Parks and Protected Areas RECOMMENDS that:

a. national constitutions make it the duty of states to ensure the conservation of natural resources and the corresponding rights and duties of individuals;

b. states establish, improve and maintain, at all levels of government, national legal instruments which:

- integrate conservation and development;
- establish protected areas and provide that, once established, they cannot be abolished except by procedures stricter than those required for their establishment; and
- provide for innovative techniques such as contractual agreements, easements, economic incentives, non-site-specific measures, including the protection of habitat types;

c. states ensure that all legislation is consistent with the requirements of conservation;

d. natural resource policy and law take into account indigenous and customary resource management practices and traditional land tenure systems in the design and implementation of protected area strategies;

e. planning laws be established, and the resources provided, to ensure that the requirements of protected areas management are taken into account in all development planning procedures;

f. legal instruments be developed along the lines of the biosphere reserve concept for the conservation and management of multiple use

areas as autonomous planning units where activities that are compatible with the preservation of the natural environment remain authorized under the control of the protected area authority;

g. states develop land use planning instruments for the conservation of natural and semi-natural habitats, as well as cultural and landscape features under a zoning system allowing for the control of any human activity which may be detrimental to these areas or features;

h. states establish effective environmental impact assessment procedures which provide for special requirements for activities which may impact protected areas and areas adjacent to them;

i. states ensure effective public participation in the planning and management of protected areas, by establishing adequate legal mechanisms which enable individuals, local communities and non-governmental organizations to challenge, if needed, administrative decisions and which require the suspension of activities until completion of the review of such decisions by the judicial or other appropriate authority;

j. states make legal provisions for the fiscal needs of each protected area, and explore innovative financing methods such as tax incentives and special funds;

k. the planning and management of protected areas be facilitated and strengthened by ensuring that legislation define clearly the management objective of a range of categories of protected areas, and by increasing the information on possible legal tools and techniques and improving the legal education and training of legal, management and enforcement professionals;

l. states ensure that protected area policies and laws of relevance to these areas are known to national and international aid agencies planning development projects;

m. every effort be made to increase the flow of information on successful legal strategies for area conservation at the global, regional and subregional levels; and

n. international cooperation be increased so as to provide services to:

- promote environmental legal education and training;
- prepare, adopt, improve and implement protected area policies and legislation;
- establish and maintain adequate institutions to implement and enforce these policies and laws; and
- obtain information on case studies of successful legal tools for conservation.



National policy and legislation related to protected areas should take into account customary resource practices and traditional land tenure systems.



RECOMMENDATION 5:

External forces threatening sustainability

Despite their many roles in supporting society, protected areas everywhere are threatened by competing uses and inappropriate management practices. The probabilities of war and civil strife are so high in many parts of the world as to justify concern about their impact on protected areas, and on biological diversity in general. Recent world events have brought this concern to the fore.

Production and traffic of narcotics in, around and from protected areas continues. Moreover, some of the present methods to control narcotics production, including deforestation and use of herbicides, are inconsistent with conservation of natural resources.

Numerous other threats to protected areas – from the impacts of population pressure to those of pollution – call for cooperation among all interested parties.

Threats to protected areas need to be examined on an individual basis, taking



Protected area agencies need to develop a long-term capacity to resolve conflicts and promote cooperation and understanding among all interested parties.

into account regional, political and social factors. Protected area management agencies need to build the capacity to adapt to changing conditions, resolve conflicts with local people and other government agencies, and ensure that the benefits of protected areas are sustainable.

The IVth World Congress on National Parks and Protected Areas RECOMMENDS that:

- a. all efforts be made to minimize the adverse effects of military activities, both in times of peace and of armed conflicts, while at the same time recognising that the armed forces can make a valuable contribution to the protection and regeneration of the environment;
- b. the acceptance of the fundamental principle that the right of belligerents to choose means and methods of armed conflicts is not unlimited, and must now be interpreted to include the protection of the environment for present and future generations;
- c. maximum use be made of the large pool of trained service people, both serving and retired, that can be mobilized readily to help protect and re-generate the environment;
- d. in the control of all aspects of the narcotics industry, particularly as they affect protected areas, methods be used which are environmentally appropriate and safeguard the integrity of such areas;
- e. protected area agencies develop the long-term capacity to resolve conflicts (including special training for managers and special staff devoted to conflict resolution), and develop structures to promote cooperation and understanding among all interested parties;
- f. new approaches to the management of protected areas be developed which are flexible and respond to fast changing circumstances;
- g. all efforts be made to evaluate the impact of bio-genetic engineering on ecosystems: new legislation should include strict codes of conduct and address the mechanisms needed to regulate and control public and private, national and transnational organizations engaged in bio-engineering; and

h. international legislation to regulate and strictly control those national and transnational organizations, both at private and public levels, which are engaged in toxic waste dumping and

marketing of toxic chemicals, be greatly reinforced because of the growing threats which these pose to humanity in general, and to protected areas specifically.



RECOMMENDATION 6:

People and protected areas

Human communities, especially those living in and around protected areas, often have important and long-standing relationships with these areas. Local and indigenous communities may depend on the resources of these areas for their livelihood and cultural survival. Increasingly, the resources which justify establishment of protected areas include cultural landscapes and adapted natural systems created by long-established human activity. These relationships embrace cultural identity, spirituality and subsistence practices, which frequently contribute to the maintenance of biological diversity.

These relationships have too often been ignored and even destroyed by resource conservation and management initiatives. Sometimes, protected areas have been established on lands possessed and used by local people. Communities have in many cases been the victims of inadequate land and resource use patterns, as well as the inadequacy of rural development programmes, thus being compelled to exploit and degrade their environment. This can impoverish rural populations and constrain the effective management of protected areas.

Protected areas cannot co-exist with communities which are hostile to them. But they can achieve significant social and economic objectives, when placed in a proper context. The establishment and management of protected areas and the use of resources in and around them must be socially responsive and just. In many cases, the continuation and development of human activities in protected areas should be accepted, insofar as THEY ARE compatible with conservation objectives.



Management plans should honour the needs and aspirations of people living in and around protected areas.

Community participation and equality need to be achieved urgently in decision-making processes, with mutual respect among cultures. These processes must require direct community involvement, as well as the participation of concerned international, governmental and non-governmental organizations. Customary tenure systems, traditional knowledge and practices, and the role of men and women in communities, must be respected and built upon in designing and implementing conservation plans.

The IVth World Congress on National Parks and Protected Areas RECOMMENDS that:

- a. governments recognize the needs and aspirations of people living in and around protected areas, and institute measures to ensure the continuity and development of social and cultural values. Policies and practices should be adopted to guarantee that local com-

munities, particularly women, are not disadvantaged by protected areas, and that they receive benefits from enhanced economic and employment opportunities;

b. governments ensure that the planning process for protected areas is properly integrated with programmes for the sustainable development of local cultures and local economies, and that it uses and enhances local knowledge and decision-making mechanisms. Also, biodiversity plans and protected area networks should be supportive of ecologically sustainable and economically viable development;

c. governments and international bodies recognise non-governmental and community-based organizations as partners in the management of protected areas;

d. IUCN, governments and protected area managers incorporate customary and indig-

enous tenure and resource use and control systems as a means of enhancing biodiversity conservation;

e. IUCN undertake an evaluation of the relationship between property rights and the sustainability of protected areas; IUCN should address particularly customary 'communal' property systems, tenure-related issues, territorial and legal conflict and gender issues;

f. IUCN promote the participation of local communities in planning and evaluating the relationship between people and protected areas; and

g. IUCN promote the sharing of information on how local community groups and non-governmental organizations can participate in protected areas management, through publications, training and education programmes.



RECOMMENDATION 7:

Financial support for protected areas

The economic difficulties which face many countries of the world restrict the investment required for adequate management of protected areas. At the same time, changing political conditions at both national and international levels provide greater opportunities for supporting protected areas. Priority should be given to reversing the current negative aid flows from developing to developed countries, and to establishing long-term funding mechanisms for conservation and environmental programmes.

In addition, protected areas can be more economically viable if the full values of their goods and services are calculated and their resources carefully managed. These factors justify greater investment in protected area management.

National funding sources, especially governments, may be expected to shoulder the major burden of protected area conservation programmes in the long run. Emphasis should be given for the development of national funding mechanisms, such as trust funds, en-

dowments, and contributions from user fees and a variety of excise or tourism fees.

Significant international financial support is likely to be through multi-sectoral programmes that encompass both the needs of the protected area and of surrounding populations in an appropriate mix of both resource development and resource conservation.

The IVth World Congress on National Parks and Protected Areas RECOMMENDS that:

at the international level,

a. far greater effort be made to relieve the debt burdens of developing countries so as, *inter alia*, to release resources for improving management of protected areas;

b. a long-term investment plan for protected areas be developed, building from the national level and from global environmental perspectives, and including the full range of available funding mechanisms, in a participatory process which draws on the expertise of both governmental and non-governmental sectors.

IUCN and CNPPA should prepare the framework for such a plan, based on the Caracas Action Plan;

c. protected area agencies report financial information on revenue and expenditure, including tourism statistics, relating to specific programmes and projects capable of being monitored. Guidelines for compiling such data should be identified by IUCN, WCMC and other appropriate bodies;

d. in planning an investment portfolio, international agencies support the capacity of governments to specify their funding requirements for effective protected area systems. International sources should identify where and how their funding is most useful to building this long-term capacity in the planning, implementation and management of protected areas;

e. international conservation funding emphasise the provision of grants and not loans, and support the creation of long-term funding mechanisms for conservation and buffer-zone development projects, as well as the establishment of trust funds to supplement the national efforts of developing countries;

f. governments, private banks and development agencies give full consideration to protected areas in all programmes of bilateral and international cooperation and development, and provide fiscal and other incentives for improving the management of protected areas;

g. the World Bank, IMF and related agencies ensure that Structural Adjustment Programs are consistent with conservation priorities and

the implementation of funding programmes for protected areas;

h. full support be given to establishing an adequate basis for funding new environment treaties, and increased funding be provided to existing treaties, especially the Convention on Wetlands of International Importance, the World Heritage Convention, and the international network of biosphere reserves;

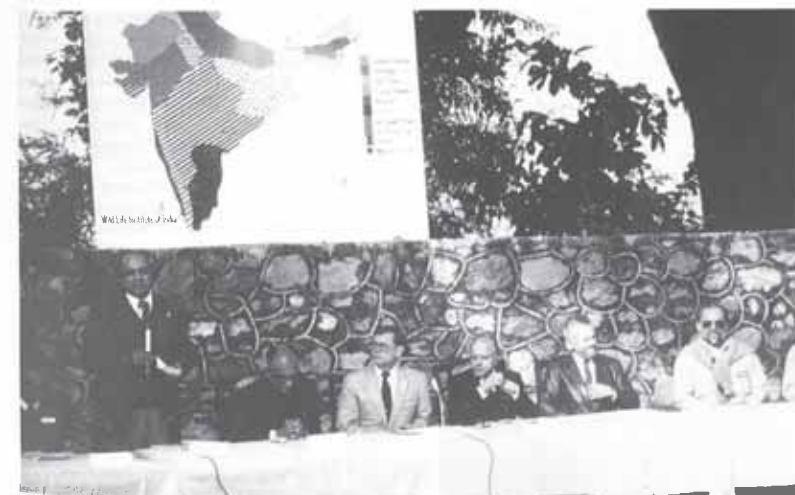
i. increased support be given for regional funding of technical assistance capacity and prioritization of protected area concerns;

j. international and regional organizations obtain and share more information about the experiences other groups have had with raising private funds;

at the national level,

k. the absorptive capacity of governments and non-governmental organizations be strengthened to utilize environmental funds effectively at the local and national level. Funding by appropriate methods for institution-building should take precedence over specific project funding;

l. investments first address the need for recurrent costs of protected area management. Funding mechanisms should be developed such as trust funds, and contributions from excise and other taxes, to support the long-term conservation of protected area systems;



A long-term investment plan for protected areas needs to be developed to include the full range of available funding mechanisms.

m. funding available from private sources be encouraged to supplement public budgets for appropriate conservation activities;

n. governments allow protected area agencies to retain a reasonable proportion of the income they generate such as user fees, for management of the protected area system;

o. stewardship of public and private lands not be compromised, and be vigorously supported by all available means, including international support, government funds, corporate and non-governmental organization sources, volunteerism, user fees and other revenues. Policies should be examined to pro-

vide positive incentives and eliminate perverse incentives;

p. financial investment in protected areas specifically address the need and concerns of local communities, including all social groups;

q. major cost-benefit studies be carried out to determine the full economic values of protected areas, these studies to be funded through donations or grants rather than by "hard" loans; and

r. IUCN/CNPPA coordinate the preparation of investment portfolios; and to that end its structure be strengthened both at Headquarters and regionally to provide technical assistance and monitoring.



RECOMMENDATION 8:

Protected areas and the sustainable use of renewable resources

A country's lands (including its rivers, wetlands and territorial seas) are fundamental assets. The imperative of management to meet human needs limits the proportion that can be maintained as truly natural habitats. However, properly managed projects for the sustainable use of wild species can enhance the conservation of those species' populations and their ecosystems because of the economic and other benefits that such use provides.



The use of wild species should be monitored and managed so that healthy populations are maintained.

Use of renewable natural resources may be consumptive (such as hunting, logging or other harvesting) or non-consumptive (such as wildlife viewing). Some categories of protected areas prohibit consumptive uses while others permit or promote sustainable use. For many local people, consumptive uses are essential to their welfare and conflicts arise when their access to such resources is limited by protected area regulations. At the same time local people are forced by circumstances to exploit species at levels that cannot be sustained, leading to further impoverishment (with women and children being the primary victims), which threaten the continued survival of resources that are important at national and international levels.

The IVth World Congress on National Parks and Protected Areas RECOMMENDS that all countries:

a. monitor the use made of wild species – both within and outside protected areas – so that they are maintained at levels which can be sustained by the populations concerned, without adversely affecting the species' ecological role or the ecosystems of which the species are part;

b. review current programmes and practices involving the use of wild species and modify them to ensure their sustainability and conformity with IUCN criteria and guidelines;

c. create economic and other incentives for the retention, rehabilitation and management of natural habitats, including within protected areas;

d. cooperate with neighbouring range states in the conservation of shared populations of wild species, such as through international agreements;

e. involve local people closely in the monitoring, use and management of wild species and other natural products;

f. work with local botanic and zoological gardens and other organizations to cultivate or breed species which are subject to the risk of over-exploitation;

g. encourage the use of appropriate germplasm from protected areas in breeding programmes; and

h. ensure that the utilization of wild species and other natural products by women is fully understood and their dependence on the sustainable management of these resources is not adversely affected.



RECOMMENDATION 9:

Tourism and protected areas

Tourism is one of the world's most important civil industries in economic, social and cultural terms. Tourism associated with protected areas must serve as a tool to advance protected areas objectives for maintaining ecosystem integrity, biodiversity, public awareness, and enhancement of local people's quality of life. Tourism activities and associated infrastructures which erode cultural and environmental integrity, without net benefits to the environment and local peoples, are inconsistent with the objectives of *Caring for the Earth*.

The IVth World Congress on National Parks and Protected Areas RECOMMENDS that:

a. global, national and local agencies and organizations concerned with protection of natural areas adopt policies to make tourism a conservation tool;

b. protected area managers be provided with the resources to manage tourism associated with protected areas;

c. policies be implemented which ensure that socioeconomic benefits are provided to the local people through their active participation in tourism associated with protected areas;

d. protected area agencies and the tourism industry cooperate to adopt codes of practice, guidelines and techniques (referring both to management and facilities) which are compatible with long-term protected area management plans, enhance the visitor's experience



New mechanisms are needed to ensure that the tourism industry and protected area agencies can work together to satisfy visitors while maintaining conservation objectives.

and are consistent with and reinforce conservation objectives of the protected area;

e. in developing greater cooperation between the tourism industry and protected areas, the primary consideration be the conservation of the natural environment and the quality of life of local communities;

f. natural resource and tourism authorities develop and implement national and local tourism plans which respect the carrying capacity of protected areas and local communities;

g. revenue generated from tourism in protected areas be reinvested in protection and management of the resource;

h. protected area agencies and the tourism industry carry out on-site studies to assess appropriate levels of impact for the world's protected areas; obtain and monitor statistical information on tourism and recreation activities and their social, cultural, economic and environmental impacts; and define the most locally appropriate management actions for protected areas;

i. permitted tourism in each protected area reflect the area's intrinsic environmental

values, and accept that some sites are inappropriate as destinations for public visitation;

j. education and training programmes be initiated and implemented for guides and tourism managers, and tourism programmes contribute to conservation education initiatives; and

k. tourism be part of a sustainable regional management strategy that offers a variety of development alternatives for local people and maintains biological diversity, for example by focusing tourist flows away from core areas towards surrounding regions.



RECOMMENDATION 10:

Partnerships for protected areas

As the limitations of government approaches to protected area conservation become more apparent, new non-governmental approaches are required. Communities, private land owners, non-governmental organizations and government agencies must all be part of evolving new partnerships for the management of land and natural resources. Non-governmental land owners and users need to be encouraged to take conservation actions on behalf of the broader community.



Communities, private landowners, NGOs and government agencies must work together in new partnerships for conservation.

While certain areas of the landscape can be allocated for minimum disturbance by people, much of an eco-region's landscape will inevitably need to sustain higher levels of economic activity and ecological disturbance, and this strengthens the case for partnership programmes. Both the principle and establishment of a full range of such programmes should be explored as one of the mechanisms related to national protected areas programmes.

The IVth World Congress on National Parks and Protected Areas RECOMMENDS that:

- all countries adopt partnership programmes which encourage and reward private land owners and users – be they communities or individuals – for their conservation management actions;
- those partnership programmes include the following measures:
 - the incorporation of roles for private and community interests in protected areas strategies;
 - the incorporation of partnership approaches in regional planning, sectoral policies, and legal frameworks;
 - government support for the strengthening of non-governmental organizations to carry out partnership programmes; and
 - the adoption of the full range of partnerships techniques;

c. non-governmental organizations and governments work in partnerships towards the establishment and management of protected areas, through governments assisting non-governmental organizations, passing enabling legislation, and providing financial and resource support, and through non-governmental organizations involving government in their activities;

d. governments and non-governmental organizations encourage the participation of the communities and private landowners and pro-

vide incentives for them to support the establishment and management of protected areas;

e. protected area agencies seek active cooperation with non-governmental organizations, as one of the best available means of building public support; and

f. international support be provided to non-governmental organizations in developing countries which can reinforce the effectiveness of protected areas.



RECOMMENDATION 11:

Marine protected areas

Seventy-one per cent of all people live in the coastal zone. Many of them derive all their protein from the sea. As the world's human population continues to increase into the next century, the proportion of people who depend on the sea's resources is likely to increase accordingly. The sea's capacity to provide those resources is already diminishing through pollution, overfishing and habitat destruction. The urgency of applying the full range of measures necessary to protect the sea's life support systems cannot be overstated. Marine protected areas are an essential element in that protection.

Insufficient attention has been given to the designation and planning of coastal and marine protected areas. The public and governments, in particular, need to recognize the importance of the coastal marine environment and the present inadequacies of protected area coverage.

The interconnectedness of the marine environment and the strong influence of the land on coastal marine areas must be recognized. The achievement of ecological sustainability and maintenance of biodiversity in the coastal marine environment will depend on integrated planning and management regimes.

Marine protected areas encompassing complete large marine ecosystems, and including highly protected areas (IUCN categories I-III), can achieve such integration when coupled with administrative arrangements for coordination



The coastal marine environment is essential to human welfare, yet is inadequately protected. A global system of coastal and marine protected areas is urgently needed.

between the different jurisdictions of adjacent land and sea areas.

The major challenge facing marine protected area planners for the next decade will be to establish a global system of marine protected areas representative of all major biogeographic types and ecosystems and to provide the requirements for their competent planning and management. This will include sound scientific research, long-term monitoring, the application of the results in decision-making, and the conduct of strong public education and involvement programmes.

The IVth World Congress on National Parks and Protected Areas RECOMMENDS that international organizations, governments and non-governmental organizations collaborate in:

- a. identifying the role of marine protected areas in protecting biological diversity and achieving ecologically sustainable use of the coastal zone;
- b. establishing a global system of marine protected areas representing all major biogeographic types and ecosystems, using biogeographic classification schemes adopted in each region;
- c. establishing national systems of marine protected areas which preferably encompass complete marine ecosystems or habitats;
- d. developing institutional arrangements within each country to achieve integrated management of each marine protected area, and to provide coordination mechanisms to ensure that adjacent land areas are managed in a complementary way;
- e. ensuring that the designated management agency has the legislative backing, the human resources and the responsibility for managing each marine protected area, with the overriding objective of achieving ecological sustainability; wherever possible, this agency should not have the conflicting responsibility of economic optimization of any activities within the marine protected area;
- f. creating management regimes for the coastal land and sea that will be compatible with local and regional cultures and will cater for access to

resources without having detrimental effects on marine protected areas;

- g. ensuring that there is strong involvement of local and indigenous people in all aspects of planning and managing a nation's marine protected areas;
- h. bringing managers and scientists together to carry out integrated, multidisciplinary, management-oriented research and monitoring programmes, so as to provide a scientific basis, to the maximum extent practicable, for selection, planning and management of marine protected areas;
- i. commencing a coordinated scientific and administrative effort to ensure that existing marine protected areas meet their management objectives;
- j. recognizing that the preferred design of marine protected areas is consistent with the biosphere reserve concept, ensuring coordination with UNESCO and the biosphere reserve system and encouraging cooperation with other appropriate organizations such as the International Maritime Organization; and
- k. convening, at the IUCN 1994 General Assembly, a forum to complete a global strategy and action plan for developing the global representative system of marine protected areas, and to review progress in developing regional biogeographic classification schemes. The Commissions on National Parks and Protected Areas and on Ecology later should convene a further small symposium in 1994 to develop from regional classification schemes a global biogeographical classification framework.



RECOMMENDATION 12:

Information, research, and monitoring

Individuals and organizations involved in protected areas work need information on which to base their decisions. Information on protected areas must be equally accessible to all interested parties, integrated with other relevant information, and available in a form that is useful.

To permit the effective conservation of ecosystems and management of protected areas, key ecological elements, processes, interactions and stresses must be better understood. Comprehensive coordinated research and

monitoring programmes are essential and urgently required.

To manage protected areas properly, it is also vital to conduct research on the socio-economic structure of the human community, including analysis of resource use, labour utilization, gender role, age structure and economic status.

Managers and scientists should also evaluate research and monitoring effectiveness, and make optimal use of the information collected. Predictive ability must be enhanced and public education strengthened.

The IVth World Congress on National Parks and Protected Areas RECOMMENDS that:

- a. protected area and protected area system managers:
 - identify the minimum information required for efficient management of the areas and system;
 - identify where this information can be obtained, and implement research and monitoring programmes to obtain it;
 - identify the best means of managing protected areas information given the limitations of time and budget; and
 - foster improved information management at the site level, through strategies for information handling and exchange;
- b. other resource use and planning sectors:
 - incorporate information on protected areas into their own planning;
 - assist protected areas authorities to collect relevant information where this is not already available;
 - make information equally available to all parties so as to facilitate collaborative planning, management and conflict resolution; and
 - provide relevant information to protected areas management agencies, and others involved in protected areas planning and management;
- c. national information managers incorporate information on protected areas in national data collection programmes and disseminate the results widely;
- d. international organizations involved in protected area information management:
 - establish guidelines for national application on minimum requirements, development of information strategies, information management techniques, classification of information and information exchange;
 - promote the harmonization of information, so as to facilitate its exchange among institutions and provide a global or regional context for national level activities; and
 - promote improved communication and coordination among international institutions;
- e. funding agencies in particular provide financial support for training, technical assistance and institution building related to information needs and coordinate their work to assure that duplication of effort is avoided and exchange of experience is maximized;
- f. the role of the World Conservation Monitoring Centre (WCMC) be strengthened as a scientific coordination and data analysis and dissemination agency, through the following measures:



Improved information is essential for improved protected area management, and all protected area agencies need to increase their capacity to carry out research and monitoring.

- further develop inventory, research and monitoring objectives and priorities to address ecosystem protection requirements at the global, regional and national level;
 - further encourage and support relevant research and monitoring by helping to secure funding, expediting interchange of information and expertise, and encouraging development of standardized data management systems to ensure conformity with international scientific standards;
 - extend information gathering and monitoring activities to include financial data on the management and utilization of biodiversity, including information on the economics of tourism to protected areas; and
 - augment capabilities in the education and public awareness sectors, e. g. through establishment of networks at the regional level, publications and workshops;
- g. governments, conservation agencies, other relevant organizations and institutions strengthen their scientific research and monitoring infrastructure to fulfill their own needs for effective management of protected areas, to contribute to understanding of local, regional and global ecological processes, and to improve management of environmental stresses;
- h. governments, conservation agencies, and other resource use and planning sectors collaborate to ensure research and monitoring systems at the community level using qualified field scientists, technical staff, educators, students and volunteers to secure both scientific continuity and public awareness; and
- i. national governments and other relevant authorities designate sites within protected areas for long-term monitoring and experimental study.



RECOMMENDATION 13:

Ecological restoration

The threats of isolation of protected areas and their degradation will require that ecological restoration be included in protected area management. This will need to consider action at both habitat and species levels.

Habitat restoration

Degradation of ecosystems is not a new phenomenon but the area of degraded habitat has significantly increased due to social, economic and ecological factors. Habitat restoration has a valuable role to play in protected area development and management. This role has considerable potential to expand in response to the pressures placed upon protected areas by population increase and climate change.

The IVth World Congress on National Parks and Protected Areas RECOMMENDS that:

- the role of restoration ecology in protected areas be developed and applied;
- all those responsible for protected areas take appropriate action to restore habitats damaged



Degraded habitats can be restored to healthy ecosystems useful for conservation. Governments need to develop the capacity to restore habitats, reintroduce appropriate species and reduce the impact of exotic species.

by past management, including abandoned agricultural areas, to self-sustainable systems;

c. restoration programmes be fully integrated with the local socio-economic and ecological conditions and be used to facilitate sustainable development in the regions;

d. IUCN promote methodologies and encourage financial support for restoration programmes; and

e. an international network of demonstration projects be set up to cover a range of biogeographical regions, with priority given to areas without a history of restoration activities.

Species restoration: reintroduction

Many species, most obviously the large mammals whose taxonomy and distribution are relatively well researched, have been eradicated from all or part of their historical range. With the increasing fragmentation of landscapes and habitats, species loss is likely to accelerate and the need to reintroduce species will grow. Priority should go to keystone species upon which the integrity of protected areas depends.

Greater attention should be given to reintroducing species to at least parts of their ranges from which they have disappeared, thereby enhancing the value of the habitat and the survival chances of the species. Supplementation of small and isolated populations will be required to reduce the effects of inbreeding. The guidelines for introductions developed by IUCN, through its Species Survival Commission, will require regular revision.

The IVth World Congress on National Parks and Protected Areas RECOMMENDS that:

- reintroductions take place only
- with the permission and involvement of the governmental agencies of both the recipient and donor countries;
- where the original causes of extinction have been identified and either eliminated or controlled; and

- when the habitat requirements of the species are satisfied and likely to remain so in the foreseeable future;
- reintroduction programmes be fully supported by local populations;
- reintroduction programmes follow a recognized protocol – involving an initial feasibility study, a reintroduction phase and subsequent monitoring – and supported by long-term funding and training of local personnel; and
- reintroductions of critically endangered species be undertaken by agencies with a proven ability to plan, undertake and follow-up the reintroduction programme.

Introduced and invasive species

Invasive organisms are increasingly being recognized as one of the most serious threats to biodiversity. Increased degradation of protected areas has promoted profound changes in the biotas of protected areas. Invasive species will accelerate extinction rates and commit the

reserve management to large and continued expenditure. These problems will be exacerbated by climate change. In some areas, such as oceanic islands, invasive species are the single greatest threat to biodiversity. The importance and management of invasive species has been given inadequate attention.

The IVth World Congress on National Parks and Protected Areas RECOMMENDS that:

- governments put into place legislation (e.g. quarantine) to reduce the impacts of invasive species; managers of protected areas require practical guidance on recognizing and managing introduced species;
- IUCN take immediate steps to allocate lead responsibility in its own structure for the issue of introductions and invasive species, this source of reference to provide authoritative advice and information on matters pertaining to invasive organisms, their potential spread, management and conservation implications; and
- IUCN collate and disseminate information on introduced and invasive species.



RECOMMENDATION 14:

Water and protected areas

Our planet is the only one where water is known to exist in liquid form. Human life is dependent upon this resource, and threatened by its mismanagement. Recognizing the need for urgent action to address these threats, the International Conference on Water and the Environment held in Dublin, Ireland on 26-31 January 1992, recommended the adoption of an integrated approach to water management and highlighted the critical roles played by natural ecosystems in maintaining hydrological processes. Protected areas provide a mechanism for managing these ecosystems sustainably.

Progress in integrated management requires close cooperation among diverse disciplines and interest groups. To date, however, collaboration among protected area authorities, water resource planners and hydraulic engineers has been minimal. It is imperative to build such

cross-sectoral linkages, given the critical interrelationships between freshwater management and the conservation of natural ecosystems. In order to highlight the roles played by protected areas in managing catchments and the impact of changes in quantity and quality of freshwater on the diversity and productivity of natural ecosystems, it is necessary to frame guidelines for future action to enhance the contribution made by protected areas in managing the world's fresh water.

The IVth World Congress on National Parks and Protected Areas RECOMMENDS that all countries:

- pursue a fully integrated approach to water management which adopts the catchment, including the underground water systems related to it, as the unit of management;
- review the place of natural ecosystems in sustaining quantity and quality of freshwater;

c. identify those sites and habitats within each catchment that maintain hydrological functioning as well as bringing wider ecological, social and economic benefits;

d. establish authorities with sufficient strength to set up and manage effectively protected areas to secure critical ecosystems, and support sustainable land-use practices and traditional water-harvesting systems in the wider catchment;

e. ensure the maintenance of the quantity and quality of fresh water needed to optimize ecological functioning and the social and economic value of natural ecosystems, such as wetlands;

f. recognize the role played by these natural ecosystems in supporting rural economies and cultures, as well as wildlife, and their potentially greater beneficial use of water than its large-scale diversion for the urban-industrial sector and for agricultural intensification;

g. require that detailed assessments be made of the full economic, social and ecological impact of loss of natural values, including degradation and loss of wetland functions, resulting from dam construction, water diversion, and other forms of water regulation; and

h. use all appropriate national and international legal instruments in pursuit of these goals.



Water is a crucial resource for human welfare, and protected areas can play an important role in ensuring effective water management in large catchment areas.



RECOMMENDATION 15:

Development planning and natural resource use

Protected areas can, and should, play a key part in the economic development of the surrounding region – and indeed of the country as a whole. At the same time their protection depends on planning the wise use and management of natural resources in a regional context.

Issues that need to be addressed include:

- the role which protected areas can play in regional and national development planning;
- mechanisms for coordinating protected area planning and management with other sectors;
- the potential impacts on protected areas of mining, commercial agriculture, forestry, and fisheries, as well as the potential impacts of land use

changes such as industrialization and urban development;

- the role of integrated regional development planning in addressing social and economic issues simultaneously with the management of biodiversity; and
- the range of planning mechanisms, institutional structures, communication systems and policy instruments needed to achieve the best interaction between protected areas and the regions around them.

The IVth World Congress on National Parks and Protected Areas RECOMMENDS that:

- a. governments prepare regional and national plans for sustainable development, that include

plans for protected areas designed to conserve biodiversity, natural beauty and landscapes;

b. governments recognize the role which protected areas must play in national and sub-national development, economic policies and conservation strategies;

c. governments ensure that the long-term economic, social and other benefits of protected areas are assessed and the information made available to national economic and sectoral planners and policy makers;

d. governments ensure that protected areas are secured from damaging impacts from external development threats by:

- instituting strong measures to control changes in land use;
- encouraging multi-sectoral subnational planning with local participation; and
- establishing rigorous environmental impact assessment procedures which provide for public comment;

e. in their approach to the incorporation of protected areas in sub-national planning, governments:

- respect and respond to the needs of local communities;
- incorporate strategies for biodiversity conservation;
- identify investment opportunities for sustainable development activities in and around protected areas where compatible with the legislative purposes of the area; and



Protected areas should be planned and managed as part of the regional landscape, not as isolated islands of "pristine nature".

- give guidance on activities that should be avoided and encourage technologies to minimize negative impacts;

f. governments ensure that individual sector policies (such as for agriculture, forestry or industry), and related regulatory mechanisms, serve the needs of protected areas;

g. during the period in which the potential of an area to become a protected area is being reviewed, no exploitation or development be permitted which might damage the integrity of the area under consideration; and

h. governments give consideration to regional landscape planning within and around protected areas so as to enhance the conservation value of the areas themselves.



RECOMMENDATION 16:

Expanding the global network of protected areas

Despite the growing recognition of the importance of national parks and other categories of protected areas worldwide, less than five percent of the planet's surface is afforded protection under IUCN categories. The distribution of these areas is not biogeographically balanced, with some key ecosystems – such as tropical dry forests, fresh waters, temperate rainforests, temperate grasslands, Mediterranean-climate areas, and oceanic islands – being under-represented.

Correcting this problem will require: developing an internationally recognised set of guidelines for evaluation of

the present coverage of protected areas; identifying major gaps in this coverage; and setting targets to fill these gaps (such as establishing at least one viable representative site in each ecological unit).

Priorities for expansion of the network of terrestrial and coastal marine protected areas worldwide should be based on the following criteria:

- inclusion in protected areas of all biological species, ecosystems, communities and habitats, including varieties and genotypes of economic value;

- ability to provide sustainability, including essential ecological processes (such as migration);
- variety of geomorphological and geological formations and historically significant cultural landscapes;
- degrees of endemism, irreplaceability, natural rarity and the presence of threatened species, habitats or formations;
- viability in relation to local social and economic factors as well as benefits provided to people; and
- site selection so as to achieve maximum possible sustainable coverage of biological and geomorphological diversity.

The IVth World Congress on National Parks and Protected Areas RECOMMENDS that:

governments

- a. survey, evaluate and document the natural and cultural diversity of their countries through records of the distribution of species, indicator groups, habitats and landscapes;



The area under protection should be doubled in the coming decade, based on national protected area system plans for both public and private land.

- b. draw up protected area systems plans, using the full range of protected area categories, which identify the status and management of existing protected areas, gaps in coverage, and action to fill the gaps; such system plans should recognize that natural diversity occurs at different levels, from broad ecological regions to intra-specific variation, and should represent, through appropriate use of private as well as public lands, the full range of each nation's biodiversity;

- c. ensure – through international cooperation – that protected areas cover at least 10 percent of each biome by the year 2000;

international organizations and non-governmental organizations

- d. take the lead in undertaking worldwide surveys of natural diversity, including the high seas, Antarctica and major river basins, so as to provide global perspectives on gaps and priorities for action;

- e. promote data collection, and share these data nationally and internationally, along with regular assessment of global trends; and

- f. help to create a politically favourable climate to achieve the above ends.



RECOMMENDATION 17:

Protected area categories, management effectiveness, and threats

International cooperation on protected areas needs to be based on agreement about the categories of such areas, on which there is still debate. Such cooperation also requires a more systematic approach to monitoring management effectiveness and threats to protected areas. An international system of categories of protected areas was further developed at Caracas, along with associated mechanisms for monitoring management effectiveness and threats. These need to be tested and promoted by IUCN, and used by management authorities to inform local, national and international action.

The IVth World Parks and Protected Areas Congress, therefore, RECOMMENDS that:

- a. the CNPPA and the IUCN Council endorse a system of categories for the management of protected areas according to management objectives as set by national legislation, thus:

- scientific reserve or wilderness area
- national park
- natural monument
- habitat or species management area
- protected landscape/seascape

and also consider the views of some specialists at Caracas that an additional category is needed to cover predominantly natural areas which are managed to protect their biodiversity in such a way as to provide a sustainable flow of products and services for the community; and that the resulting system be confirmed at the 19th General Assembly of IUCN;

- b. following endorsement by the IUCN Council, the system be recommended to governments and explained through guidelines;

- c. IUCN develop further a system for monitoring management effectiveness and threats to protected areas, for application by management authorities;

- d. management authorities and others report their results of applying this system to the World Conservation Monitoring Centre (WCMC);

- e. subsequent editions of the United Nations List of National Parks and Protected Areas use the revised system of categories and include information on management effectiveness;

- f. IUCN seek resources to focus international attention on areas at greatest risk from forces beyond the control of the managing authority ("threatened protected areas"); and

- g. IUCN establish an "award" scheme that would give recognition to those protected areas which are particularly well protected and managed; past performance would be reviewed, and the award withdrawn if standards fall.



Protected areas require explicit management objectives to provide a basis for assessing their effectiveness and threats to their integrity.



RECOMMENDATION 18:

Building protected area institutions

The threat to complex ecosystems and protected areas from a host of stresses provides a huge challenge for the human race. Society must develop understanding of the many forces in play, define methods for ameliorating impact, and apply effective correction techniques. Scientific knowledge alone is not enough; socially relevant organizational structures are also required.

Governments have a fundamental responsibility, from which they cannot abdicate, for the well-being of protected areas. A clear legal framework is required to define the roles of government at all levels, non-governmental organizations, the private sector and the community in protected area management. Every national system of protected areas requires a sound administrative base, which allows flexibility in design and management, and an overall plan setting out the objectives of the national system.



Protected area institutions need strengthening throughout the world. They especially need to improve their capacity to work with local communities.

The IVth World Congress on National Parks and Protected Areas, RECOMMENDS that:

a. governments prepare an explicit policy statement relating to the principles, standards and practices which the national protected area agency will establish in the planning and management of individual protected areas and of the system as a whole;

b. governments review the institutional structure for protected area management, to ensure that each nation's resources of skill and expertise are applied to protected area policies, with citizens working in partnership with protected area professionals to advise governments and guide management;

c. governments staff protected area agencies adequately with people having appropriate abilities in natural and social sciences, education, community relations, gender sensitivity, management and conflict resolution; and specifically increase the number of women involved in protected area based education and management. Personnel should also be included from communities within surrounding protected areas, and particularly indigenous communities;

d. governments support the efforts of non-governmental organizations in protected areas by using them in a management and/or ownership role when appropriate; and international funding institutions support non-governmental organizations in this role;

e. IUCN assist and advise non-governmental organizations on how best to contribute to protected area planning, management, and education; and create a registry of non-governmental organizations to reinforce this activity;

f. non-governmental organizations develop close relationships with local communities, scientists and managers to augment management effectiveness and improve information exchange;

g. protected area agencies cooperate with educational institutions to develop educational and training programmes so that skilled people will be available for protected area management, and so that educators may use information obtained through protected area research,

monitoring and management to increase knowledge of conservation issues;

h. the essential role of environmental education be recognized and further strengthened through development of appropriate organizational infrastructure; and that all government, conservation and development agencies review their environmental programmes and consider

setting a target of 10 percent of available budget for environmental education; and

i. IUCN seek to enhance opportunities for communication and the development of professionalism among protected area managers, especially through an increased capacity for CNPPA to operate regionally and strengthen its programme of publications.



RECOMMENDATION 19:

Developing protected area professionalism

Managing protected areas requires special skills to understand and tackle the different problems that are encountered either on a regional (country-wide) or thematic (fresh water, terrestrial or marine ecosystem) basis. Despite this realization, few programmes have been developed and implemented anywhere to establish and maintain appropriate training systems.

The IVth World Congress on National Parks and Protected Areas RECOMMENDS that:

a. IUCN adopt and promote among national and international organizations a definition of "protected area professionals" and a mission statement for protected area managers, based on those developed by specialists at Caracas;

b. IUCN encourage governments to commit themselves to spending a predetermined pro-rata amount of total government expenditure on the management of protected areas, and at least four percent of those budgeted amounts on training of protected area staff;

c. IUCN promote the establishment of a World Education and Training Fund (WETF), funded by donor agencies, to support regional and national training efforts for protected area managers;

d. national governments and the international community recognize the value of protected area professional organizations, support the development and strengthening of the cadre of individuals needed to manage such areas, and reward them commensurate with their skills and performance;

e. national governments and the international community cooperate to provide facilities and integrated programmes to train protected area managers at all levels;



Training protected area staff remains a top priority.

f. training centres and protected area institutions be encouraged and supported to form networks to share expertise and provide mutual support;

g. IUCN take all necessary steps to develop PARKS magazine as the international journal for the protected area professional, and to encourage the development of regional newsletters and other forms of communication among professionals;

h. IUCN develop and promote the adoption of guidelines for the training of protected area managers at all levels, emphasizing the concepts, methods and techniques necessary for staff to be fully aware and effective in their responsibility towards the conservation of nature and the human communities in and around protected areas;

i. IUCN encourage regional training programmes including training manuals which are linguistically, culturally and locally relevant and acceptable; regional training centres; and regional travelling seminars as appropriate; and

j. IUCN and training centres encourage all conservation professionals to incorporate the principles of *Caring for the Earth* in their work, so as to set an example for the broader community.



RECOMMENDATION 20:

Biosphere reserves

The Biosphere Reserve concept has become widely recognized as one of the most innovative means to promote participatory approaches to the conservation of biodiversity in combination with the sustainable use of biological resources. Through flexible zoning and management patterns, the concept can accommodate a wide variety of ecological, economic, social and cultural situations. A number of countries have used this concept, and some have enacted legislation, to establish national Biosphere Reserves.

Fully-fledged, internationally recognized Biosphere Reserves include research, monitoring and training components to support conservation and development objectives. This allows them to take part in the International

Network which has been established under the Action Plan for Biosphere Reserves. When fully developed and adequately managed, Biosphere Reserves assist in long term-research and monitoring, and demonstrate sound approaches to sustain local communities. The International Network thus offers an open-ended instrument for a variety of cooperative programmes of comparative studies, inventories, monitoring, education and training in both the natural and social sciences.

The IVth World Congress on National Parks and Protected Areas RECOMMENDS that:

a. governments establish, strengthen and maintain multifunctional Biosphere Reserves endowed with suitable management and coordination mechanisms, incorporate them in integrated rural development programmes through regional planning, and participate actively in the International Network;

b. international, regional and bilateral development and financing organizations support the establishment and strengthening of Biosphere Reserves, refocussing their development projects with the aim of improving the social and economic conditions of people living within and around Biosphere Reserves;

c. UNESCO, in cooperation with UNEP, FAO, IUCN and appropriate non-governmental organizations, develop and strengthen the status and the operational capacity of the International Network for the exchange of information and personnel, and for active participation in research and monitoring programmes; and

d. IUCN actively promote and support the further development of Biosphere Reserves to improve biodiversity and ecosystem conservation, including participating in the work of the Advisory Committee on Biosphere Reserves.



Biosphere reserves are useful models of integrated management of protected areas for multiple functions.



RECOMMENDATION 21:

Implementing the decisions of Caracas

The 20 preceding Recommendations, the Caracas Action Plan, and the many detailed outputs of the workshops need to be carried forward urgently. To spearhead this, an immediate action programme needs to be drawn up by IUCN and promoted to the major donors.

The IVth World Congress on National Parks and Protected Areas RECOMMENDS that IUCN should:

a. develop an immediate action programme, which draws on information provided at the Congress and presents a clear picture of both the immediate and longer term actions required, detailing what needs to be done, where and by

whom. It should provide clear budgetary details;

b. ensure that the programme is presented to appropriate governments, the UN, World Bank, other multinational and bilateral development assistance agencies and leading business organizations throughout the world;

c. continue thereafter to develop and extend the programme, so as to accommodate the array of initiatives stimulated by the Congress;

d. provide through IUCN regional and national offices more support to the CNPPA constituency, so that it is better able to promote the Caracas Recommendations and Action Plan; and

e. inform all governments of the decisions taken at Caracas.



RECOMMENDATION 22:

Future world congresses

Great benefits will flow from the World Congress in Caracas, as they have from previous congresses. It is essential, therefore, to plan to hold a further such event in 10 years time. Following world congresses in the Nearctic, Indo-Malayan and Neotropical Realms, the next one should be held in the Afrotropical Realm. However, it is desirable that there should be a smaller event, to monitor progress in the implementation of the decisions taken in Caracas, in five-years time. It is also desirable that IUCN should consider convening other world and regional congresses on key conservation themes so that the agenda for future World Congresses on National Parks and Protected Areas can focus on issues specific to this topic.

The IVth World Congress on National Parks and Protected Areas RECOMMENDS that:

a. the next World Congress on National Parks and Protected Areas be held in 2002 in the Afrotropical Realm;

b. IUCN consider convening an event during 1997 to review progress made in implementing the decisions taken at Caracas, this event to be attended by a limited number of conservation leaders from key intergovernmental, governmental and non-governmental constituencies concerned with protected areas; and

c. IUCN also consider convening world congresses on other key conservation themes to complement the highly successful Park Congress series – possibly in conjunction with future IUCN General Assemblies.



RECOMMENDATION 23:

Expression of thanks

The IVth World Congress on National Parks and Protected Areas has involved complex and demanding preparation. The participants are aware of the tireless efforts of the Organizing Committee, cooperating agencies and many other people to ensure the success of the event. They are grateful for the excellent facilities provided for the Congress and the unique opportunities for participants to learn about and enjoy the nature and culture of the host country.

The IVth World Congress on National Parks and Protected Areas RECORDS:

a. its warmest appreciation and grateful thanks to the Government and people of

Venezuela, and of Caracas in particular, for the generous hospitality extended to participants in this Congress;

b. its great appreciation to the members of the Organizing Committee and to cooperating agencies and volunteers involved for their outstanding work before and throughout the Congress;

c. its gratitude to the many organizations which contributed financial support so as to ensure the success of the Congress and the fullest possible participation; and

d. its grateful thanks to the numerous persons who have contributed their time and energy to assist the Organizing Committee in the preparation and running of a most successful Congress.



The magnificent natural setting of Venezuela, combined with the generous hospitality of its people, helped make the Caracas Congress a success.

Opening Ceremony





Opening Ceremony

Para nosotros la patria es el planeta tierra

By
Sir Shridath Ramphal
President
IUCN - The World Conservation Union

There is an order to all things. My first words must be words of solidarity with Venezuela, with President Perez, with democracy. They are words of solidarity I utter in all my capacities: as President of IUCN, as a son of neighbouring Guyana, as a friend of Venezuela and its President. This great country has led this continent to democracy and freedom, away from dictatorship and repression, towards social justice and civil society. Venezuela's democracy is Latin America's destiny. If the one is impaired the other is imperilled. If democracy is overthrown in Venezuela, the bell tolls for freedom in many parts of the Americas. Hence my solidarity with Venezuela, its people, its political parties, its government, its President. I, we, all of us here, salute those who rallied in the past week in upholding government and the democratic process — including very specially those in the Armed Forces who did so.

But let me say in these opening words that we must do more than merely express solidarity and salute democracy. Venezuela, and so many other developing countries of this Hemisphere and of other continents, need relief from the economic burdens they bear. The social cost of adjustments to economic realities to which rich countries have also contributed are too high for poor countries to sustain alone. To praise their democratic standards and do nothing about their poverty levels is to entrench despair and endanger democracy. If the rich world wants to truly salute those who saved democracy in Venezuela last week, let it address the problems it has helped to heap on developing countries generally, and not leave them to the fate of Sisyphus: forever rolling a boulder up a mountainside of development and forever falling back for want of a helping hand.

That is the spirit in which we come to Caracas today in the cause of conservation — conservation of nature, with which human survival is bound up, for we are part of nature. We will not save the parks unless we save the people too; we will not save the people unless we save the parks as well.

Our world is changing fast. Great nations are falling apart while others come together in

regions. In many parts of the world, national security is being redefined in economic and environmental rather than mainly military terms. Governments are becoming aware of the folly of continued environmental destruction, as the conservation movement has become more effective in getting its message across.

But none of us can feel satisfied that the world is yet on the right track. No country uses its natural environment as well as it could, or as wisely as it should. The work of humanity is everywhere: even in remote Antarctica the snows are contaminated and the ozone layer is depleted by the products of human industry. The living riches of the earth are being wasted, partly because our economic systems arrogantly value only what our societies have created.

Forests, wetlands, scrublands and grasslands are all being converted to agriculture, and much high-quality farmland is being built on. Some of this is to meet compelling human needs, or to satisfy what are perceived as human interests. The world still suffers from appalling and widespread poverty, and we need more development to give a decent quality of life to today's poor and to the billions that will be born before human numbers stabilise. But many of these conversions are not in the long-term interest of the poor. They are a misuse of the world's environmental wealth. They are bad science, bad ecology, bad economics, bad investment — and some are unsustainable even in the short term. They offer no lasting escape from the human dilemma of under-development.

In today's desperate situation, it is inevitable that some will argue that national parks and other protected areas are either luxuries or anachronisms. One aim of this Congress is to face that criticism squarely, and develop a rationale for nature's protection within the wider rationale of using the world's environment sustainably — sustainably in the context of meeting the needs of the present generation without compromising the ability of future generations to meet theirs. How can protected areas contribute positively to the achievement of harmony for humanity within nature? The title of this Congress — "Parks for Life" —

emphasizes that protected areas must remain in the mainstream of human concerns. If they are perceived as a luxury item — or become one — they will not endure.

We do not lack excellent advice. IUCN has been working over the past several years with its partners UNEP and WWF to prepare *Caring for the Earth*, which contains a detailed analysis of the problems, and outlines a path governments, local communities and individuals should follow. A new *Global Biodiversity Strategy*, in which we and UNEP have worked under WRI's leadership, will be launched here in Caracas tomorrow. Governments are getting ready for the Earth Summit, the United Nations Conference on Environment and Development, which will be held in Rio de Janeiro this coming June. A new "Green Fund" — the Global Environment Facility — has been created by governments, a small beginning but a large concept of support for action to safeguard the global environment. A new Convention on Biological Diversity is nearing completion. So while none will be content with the snail's pace of intergovernmental negotiations, we can be heartened by the fact that governments at last are taking the issues seriously.

But do we yet have the political will to implement the solutions that are required? This is not only a question about governments. Are consumers in the North willing to curb their overuse of energy, and emission of greenhouse gases that already over-tax the resilience of nature? Are they willing to alter the terms of trade, and reverse economic flows, so that development in the South is stimulated rather than continually undermined? Are governments everywhere willing to see that unless local communities are empowered to plan and manage their own resources, inequity, exploitation and a waste of natural resources are inevitable? And are the leaders of the conservation movement willing to put human needs at the forefront of their concerns, and insist that while development must be conservation-based, conservation must also be people-centred?

This Congress will do good if it looks with sensitivity and realism at the conversion of its title into action: Parks for life! John F. Kennedy said in 1961:

"We must expand the concept of conservation to meet the imperious problems of the new age. We must develop new instruments of foresight and protection and nurture, in order to recover the relationship between man and nature".

We did not heed his call then. Are we ready to do so now? And how should we expand the concept of protected areas to meet the problems of an age whose demands are even more imperious than when he spoke?

I suggest four main areas where the Congress should focus its attention.

First, recognize that most of the major problems faced by protected areas have relatively little to do with the dynamics of ecosystems and the niceties of ecological science, nor even with the relationship between people and the environment. Rather, they are an outcome of competition between people over land and resources. Whether a site is to be used as a protected area, a reservoir, a logging concession, or an area for squatter cultivation is a matter of human decision between competing interests — interests with differing direct involvement with the land itself. The benefits from these alternatives are widely different in their distribution within society and between generations.

The conflict cannot be resolved through some combination of education and improved techniques; we need to mobilise political influence to ensure that the right values lead to the right decisions, and that decisions are implemented. This means that where a government, heeding the social partners, decides that the right use of an area of its sovereign territory is nature conservation, it backs that decision with as much strength as it backs a decision for urbanisation, for hydro-power, for mineral extraction, for agriculture or for forestry.

Second, find ways to ensure that protected areas provide more benefits to local people. "Parks for Life" cannot mean locking up resources for the sole benefit of tourists from distant lands, or scientists pursuing elusive ecological truths. Quite simply, if local people do not support protected areas, then protected areas cannot last.

This means that protected areas managers must develop a working relationship with the people who live in and around the areas which we value so highly. And this in fact means recognizing that their values may not be the same as those of the affluent visitors who find spiritual uplift in pristine alpine heights, deep forests, teeming wildlife and solitary dales. The vast majority of rural people want cheap timber, unlimited clean water, cheap food and fibre and good land to raise it on, good grazing land, industrial progress and prosperity — and, after all of this, maybe a little easily accessible outdoor recreation. In so far as a protected area, or its buffer zone, provides such products, and generates wealth some of which comes to the local people and finances their development process, they will support it. The key is to recognize that a protected area managed for tourism is business, and that there is an opportunity cost in its protection, for which the local people legitimately expect compensation through a share of the revenue it generates. The official perception of a park as a national asset and a finance ministry's expectation of revenue will both be invalidated if local communities see it as a liability.

Third, provide practical advice. Big conferences (including this one) are useful only to the extent that they lead to action on the ground, which is why UNCED must lead to not only an Earth Charter but Agenda 21. I hope that this Congress will be realistic and down to earth. I hope and expect that the many workshops you will be attending in the coming days will provide you the opportunity to agree on the major new actions that must be taken, the policies that must be adopted, and the modes of cooperation that must be promoted.

And fourth, develop the new instruments of foresight, protection and nurture that President Kennedy called for over three decades ago. We all admire the work that protected area agencies are doing, often against formidable odds and with woefully insufficient budgets. But they are not enough to stem the forces of destruction. A much more comprehensive approach is required to overcome the administrative boundaries established by inter-agency competition. We need to find ways to overcome the separation of people from protected areas, development from conservation, federal from state and private lands, and, at a deeper level, culture from nature.

Let me leave with you a quotation by one of the most influential people of this century:

"Raising people's living standards must not take place at the cost of exhausting nature but should be accompanied by the conservation and renewal of the living conditions of the plant and animal world. The greening of politics is an affirmation of the priority of values common to humanity, enriching education and upbringing with ecological content from childhood onwards and developing a new and contemporary

attitude toward nature. And, at the same time, it is the return to mankind of its awareness of itself as a part of nature. The moral improvement of society is inconceivable without this."

The speaker? Mikhail Gorbachev.

As I look around this room today, I see a powerful coalition from all parts of the globe, bound by a single idea: that people need to work together to conserve nature. IUCN, as the World Conservation Union, has been able to bring governments, scientists, managers and non-governmental organizations together with industry, banks, and the communication media, and even the military. We must build upon the potential this partnership provides for improving the well-being of all society.

Finally, I hope we all see ourselves in the service of the Earth Summit which is, when you think of it, the most comprehensive effort in all of human history to grapple with the problem of human survival. We will not have succeeded in Caracas if we fail in Rio; but our work in Caracas can help Rio to succeed. That makes "Parks for Life" both a message and a mandate.

Over a century ago the great Cuban nationalist Jose Marti proclaimed in language that captured the ambition of this Continent and the countries of the Caribbean and Central America: "para nosotros la patria es America Latina". Today, as we approach the 21st century, we have to enlarge that ambition for the Americas and all the world, so that all people reach to a future when humanity can assert:

"PARA NOSOTROS LA PATRIA ES EL PLANETA TIERRA".

I wish you a productive Congress.



Opening Ceremony

Protected areas and the challenges of the contemporary world

By
Federico Mayor
Director-General
United Nations Educational, Scientific and Cultural Organization
(UNESCO)

We are living in a world of rapid change and transition in many areas. Ten years ago, at the last World Parks Congress, who could have imagined the historical events that were to take place before it would meet again? Who could have predicted the collapse of so many authori-

tarian regimes, giving rise to pressing requests for help that caught us unprepared? The rules of the game of the world of politics have changed radically, but we have not yet adjusted to the new situations that have developed, nor to the new and quicker pace of events. Neither in our

institutions nor in our strategies had we made provision for these long-awaited changes. Guided for so many years by considerations of short-term interest, we must now meet a number of enormous challenges that are complex and will need a global as well as an interdisciplinary approach. When the walls that separated East from West came tumbling down we found ourselves face to face with a surfeit of material goods and a corresponding dearth of values, and even more striking evidence than before of the gap between North and South. In that part of the world which has accumulated knowledge, an ageing population continues to use up the bulk of the world's resources in the frenzied pursuit of consumption. At the same time, the rapidly increasing younger populations of the South must struggle for survival while at the same time they are called upon to shoulder the burden of famine, lack of drinking water, illiteracy, foreign debt and protectionist trade barriers. While the pressures on natural resources and the environment are mounting daily, the wealthy countries are not making the effort, exercising the imagination or investing the funds that would make it possible to develop alternative forms of energy and alternative agricultural technologies. Environment-unfriendly patterns of exploitation persist despite warnings concerning their medium- and long-term effects. We know that the planet's resources are limited, that fossil fuels are not renewable and that we still do not have the scientific knowledge or the technology we need to capture and store solar energy simply and cheaply. We also know and this makes us accomplices — that we are diminishing that biodiversity upon which we all depend.

We must meet this unexpected upward change of gears in the world of machinery with renewed courage and renewed confidence in the future. We must choose the path of solidarity between rich and poor and find ways of achieving a more equitable distribution of resources and opportunities. We must fight for the rights of future generations and bequeath them a world in which they can realize their full potential and have opportunities to increase their personal well-being. The key to all this is in sharing — in the recognition that we are all travellers on the same planet. The fates of rich and poor, of all skin colours and from all hemispheres, are inextricably intertwined. We must combine our forces before the changes taking place in the ecological environment become irreversible. Sharing does not only mean giving; one must be prepared to give of oneself. There must be a willingness to share one's essential resources with the other, not just what is surplus to the maintenance of one's own life-style. This spirit of sacrifice, however, calls for shared values, principles and purposes with which to give creative and innovative force to our plans for the future.

None of this will be possible in the absence of public freedoms exercised in a genuinely democratic framework. Make no mistake, criticism and peaceful changes of policy are only possible in democratic regimes. It is only in a democracy that all citizens can, in the final analysis, make their voices heard. Only where there is freedom will aspirations towards equity and justice succeed in correcting imbalances and reducing differences. It is only when the winds of freedom have swept across the world that economic practices that distort international trade and hamper economic adjustment will be replaced by practices that can meet the needs of all countries and situations. For, in the final analysis, all depends on how we decide to define development: development of what, by whom and for whom? It is here that social and cultural goals must be given equal rank with economic and monetary objectives. It is here that the knowledge and talents of its citizens is a people's greatest asset. Education and the training of human resources are the bridge to the future. But this future will not come of itself: it has to be built. The future is shaped by each day's patient effort and not by idle speculation: there is no substitute for hard work.

The industrialized countries must recognize that the problems of the environment, of population movement and of cultural and ethnic conflict will not be solved unless education and training in a context of mutual tolerance, and respect for the world of nature, begin in early childhood. The whole world must join forces, under the aegis of a strengthened and reinvigorated United Nations, to consolidate democracy, particularly in those parts of the world where it is being undermined by poverty and ignorance. We must summon the energy and the determination required to change the content and organization of education throughout the world — beginning with the more advanced countries — so as to ensure that citizens have the knowledge they need for reflection and individual action. Outside help can provide impetus, get things going, 'enable', but real change can only take place when every citizen has access to knowledge and resources. If the rich countries do not go to the help of those that are in need they will find them, driven by poverty and desperation, pounding on their own gates.

The International Commission on Education and Learning for the Twenty-first Century, the World Commission on Culture and Development — both of which were approved at the last session of the General Conference — and UNCED are good illustrations of the great opportunities still open to us to redirect the course of development on our azure planet. We must prepare ourselves for these great encounters with history and this Congress is an excellent introduction to these substantial and sorely

needed changes. Of course hard times lie ahead, but, as Martin Luther King once said, the measure of a people or an individual is not revealed in times of prosperity, progress and comfort, but in times of challenge and controversy. We shall have to sail against contrary winds, knowing that while the makers of great transformations win a place in history, they also usually lose power.

The best way of emerging from this atmosphere of crisis and uncertainty — in which a variety of new directions can be envisaged — seems to be offered by the concept of 'sustainable' development. As proposed by the 1968 conference on the biosphere, elaborated by the Man and the Biosphere programme, and given clear definition in 1980 by IUCN and its partners in the **World Conservation Strategy**, the principle of a development process that has a human profile and that is compatible with the preservation of the environment is in the interest of all humanity. Issues such as the future of the world's forests, the world's supply of drinking water, the state of health of the oceans, the composition of the atmosphere and the preservation of the diversity of the earth's living organisms now feature on the political agendas of all governments, which are beginning to add up the real long-term environmental costs of present economic systems. The challenges which we must face in the world today have reached temporal and spatial proportions unprecedented in human history. The issues I have just enumerated are the keys to future action, but we must first redefine our concepts and adopt new approaches to our problems (in terms of scope, economic, cultural and social influences, objective reality, subjective awareness and future prospects).

The preservation of ecosystems is undoubtedly a corner-stone of this new approach upon which we have embarked. The outstanding work done by IUCN, closely followed by so many organizations of all kinds, is assisted and encouraged by UNESCO. I should like to remind you that the impulse for the decision to establish a non-governmental organization to promote the preservation of the world of nature was given in 1948 by my illustrious predecessor, Sir Julian Huxley, the first Director-General of UNESCO. The result was the creation of that Union of which we are all so proud. By putting a large number of NGOs in contact with governmental agencies and organizations dealing with conservation, the World Conservation Union is encouraging the formulation of independent guidelines for the protection of ecosystems, biodiversity and the vital processes of nature. Thus, with the United Nations Environment Programme, the World Wide Fund For Nature, the World Conservation Monitoring Centre and many other non-governmental organizations, we now have a fund of knowledge which will help us to deter-

mine where and how to set about improving the preservation of ecosystems, of our earth, of our atmosphere, and of our own lives.

Human beings are the centre of the ecosystem's consciousness. UNESCO has been applying this principle since the 1970s, when it established under its Man and the Biosphere programme (MAB) the concept of biosphere reserves, and in so doing recognized the central role of the human race in the preservation of nature. The focus on biosphere reserves has turned out to be very relevant in these unsettled times. First of all, these reserves serve to ensure the survival of representative samples of ecosystems and the biological diversity they contain. They constitute an intergovernmental network which, while respecting the sovereignty of the various States, seeks, *inter alia*, to promote cooperative research, to make inventories and to provide permanent monitoring. They are centres of education, experimentation, and efforts to identify alternative and ecologically sustainable way of harnessing biological resources to the needs and aspirations of local communities. Twenty years later, that concept has been accepted by all: that is to say, it has been recognized that ecosystems and biodiversity can only be preserved if the basic needs of the populations of the protected areas and of those living in their vicinity are taken into account. The theme of this Congress — Parks for Life — sums that concept up very neatly.

Which development models are acceptable? How much change can a given cultural and social system assimilate, and at what speed? How can we avoid the imposition of a stereotyped development model which could destroy the cultural and biological diversity which gives every people its individual character, and create a monotonous, mediocre world?

This year marks the twentieth anniversary of the 1972 Convention for the Protection of the World Cultural and Natural Heritage. UNESCO is considering the possibility of bringing the genetic heritage of humanity and the non-physical or spiritual cultural heritage within the purview of this Convention, while bolstering efforts to conserve archives, where the memory of the world is stored.

Action to protect ecosystems, reorient science, scale qualitative development and preserve the cultural heritage cannot succeed unless it is accompanied by radical change in the habits and attitudes of society in general and of social institutions. The extraction of short-term material benefits at high environmental cost cannot continue indefinitely in a world of limited resources.

National and international institutions based on the premises of stability and continuity must undergo radical change if they are to be able to

cope with the complex, unpredictable and fluctuating phenomena which herald the dawn of the Twenty-first Century. At the same time, our domineering, materialistic, bellicose attitudes must be replaced by a spirit of reconciliation, harmony and generosity. As I have already said, such change can only be brought about with the help of education in all its forms, stretching from literacy instruction to the highest levels of specialization. We can win the great war against illiteracy: since late 1990 and for the first time in history, the number of illiterates in the world has been on the decline.

For this change in attitudes to take place, all sectors of society must be sensitized to the basic issues regarding environment and development to which I have referred. Protected areas play an essential role, as in them the unpredictable variations inherent in natural systems, the long-term values and services offered by the world of nature and the problems and solutions involved in efforts to preserve those systems for future generations can all be studied in a real-life setting. Protected areas, and especially those which can be defined as biosphere reserves, thus play the primordial role of encouraging the preservation of ecosystems and biodiversity, redirecting the interests of science to focus on environmental problems, fostering the search for acceptable models of development and shaping the attitudes and habits upon which those actions should be based.

My analysis of the challenges of the contemporary world and the supportive role which can be

played by protected areas leads me to conclude with a number of observations on the ethical dimension of our joint efforts.

I remember the Burkinabé historian Joseph Ki-Zerbo, one of the distinguished participants in the discussions on the future of IUCN that took place at Fontainebleau in 1988 on the occasion of its fortieth anniversary, recounting an African myth on the origins of the world in which God, after having created all the denizens of nature, sat back and asked himself the question 'But on whom will the sun shine?'. He then decided to create man and woman, so as to give the sun purpose and meaning. The efforts we make to preserve the world of nature are much more egoistical than we may suppose, because in the final analysis, it is for ourselves and for the human race to which we belong that we wish to preserve it. Our heritage is made up of both culture and nature. They are both necessary conditions of human life. We are instinctively conscious of the fact that our happiness as individuals is dependent on the assurance that our roots are firmly imbedded in the past, in the cultural and natural heritage passed on by our forebears, and on the hope of a safer and fairer world for future generations. All our efforts to preserve this heritage by means of 'protected areas' call for meticulous evaluation, planning and execution. The work of this Congress, which is the most important assembly of its kind, is of vital and far-reaching significance, for by protecting the world of nature we are protecting humanity from itself.



Opening Ceremony

Holding the line

By
William H. Mansfield III
Deputy Executive Director
United Nations Environment Programme

On behalf of the Executive Director of United Nations Environment Programme (UNEP) let me thank you, Mr President, and the people of Venezuela for hosting this important Congress on National Parks and Protected Areas and promoting successfully the sustainable development of democracy in the continent and in the world. I wish to thank also Director General Martin Holdgate, and Jeffrey McNeely, Secretary General of this Congress, and their

colleagues, for organizing this magnificent meeting.

Dr Tolba has asked me to express his sincerest apologies for not being able to join you. He is in Nairobi where he is helping to conduct the last round of the Governmental Negotiations for an International Convention on the Protection of Biological Diversity. It is hoped that the convention will be ready for signature at the United National Conference on Environment and De-

velopment to be held in Rio de Janeiro in June this year. Dr Tolba has asked me to read to you the following message on his behalf.

Aldo Leopold, the father of the modern conservation movement, once commented that parks were necessary because, in the absence of full legal protection, people tended to destroy the wilderness. What Leopold did not point out was that even *with* full legal protection much of the world's wilderness area is under threat.

It is this that bothers me most.

UNEP believes that park management must be put on a surer footing; not necessarily so that the total area protected can be expanded (though this would be desirable, too), but just so that we can hold on to what we have, and make even better use of it. In other words, rather than being too ambitious, we should concentrate on holding the line: on consolidating what we already have.

And, if you will excuse me for being so direct, an important part of the problem is financing. We at UNEP support the idea of a small international grant facility being established, and we are particularly aware that it must have a reliable financial foundation. The Global Environmental Facility (GEF) might be a suitable location for this. The Facility is a joint World Bank, UNDP, UNEP, financing mechanism to enable developing countries to obtain additional, concessional financing for action against global environmental problems. A substantial portion of the Facility's funding is set allocated for actions to preserve global biological diversity. I would have thought that a grant scheme for park management would be an idea well worth exploring with Facility funding.

I know that the issue of financing mechanisms for parks is already on the table. I welcome that, and I believe that a strong endorsement from this Congress supporting a particular financial programme would carry a lot of weight in the international donor community. Beyond straight financial concerns, UNEP believes that a number of other issues would benefit from the endorsement of this congress: international legal arrangements; country studies on biodiversity; and the role of geographical information systems as a repository for information on protected areas and biological diversity.

The issue that is uppermost in my mind at the moment is the International Convention on Biological Diversity. UNEP has been asked by the international community to broker an agreement on the preservation of biological diversity, and negotiations on this are in process. The fourth round finished this week in Nairobi. The hope is that by the time of the United National Conference on Environment and Development (UNCED) — now less than four months away — we will have a basic convention that can initiate an agreed concerted international collaborative

process to protect the world's plant and animal treasures. I cannot promise this, for we have learned from treaty negotiations in the past that a good deal delayed is better than a bad deal now; but I remain optimistic.

The cornerstone of any biodiversity agreement — and the point around which the most difficult negotiating is now taking place — is the question of trade and equity. Putting fences around protected areas will do some good, but not enough. In the face of growing population, growing demand on resources, and growing economic ambitions, it will be necessary to find some mechanism to ensure that there are real incentives to protect biological resources. The most obvious avenue would appear to be the establishment of a system that would somehow remunerate countries which preserved their resources.

In principle this is relatively straight-forward: economic benefit — medicines, chemicals and the like — are received from areas rich in genetic resources; and a certain portion of that economic benefit should flow back to the people who husbanded those resources. The actual mechanics of such a system are much more complex. Should a charge be levied per unit area? Should a commitment be made to train host-country nationals in the biomedical and pharmaceutical industries downstream? This is where the debate is now, and I believe that on the outcome of that debate may hang the future of many of the world's richest biogenetic reserves. At UNEP the successful conclusion of these negotiations is our highest priority — bar none.

Experience with the negotiating of other agreements (particularly the agreements on the protection of the earth's stratospheric ozone layer) has taught us that country studies — that is, studies that tell us more about the specific needs and problems of different countries — can help take the debate and the planning and implementation programme out of the realm of the general, and into the realm of reality. And that is where the debate has to be as we come into the final stage of these negotiations.

The country studies we have planned are designed to help developing countries put together inventories of their own biological diversity. The programme we have laid out is not large by international standards — about 5 million dollars, compared with the 60 million dollars a year estimated as being spent by multilateral donors on the preservation of biological diversity worldwide.

The inventories that are developed in the country studies will be used to help countries to define their specific needs, and the costs associated with these needs. On the international level, it is our hope that the studies will contribute to achieving a global system of ecologically representative protected areas.

I stress the need for a representative network of protected areas. There is a tendency to be mesmerized by the amazing genetic diversity of the world's tropical forest. That diversity is amazing, and the actual density of species is unrivalled. On the other hand, a number of ecosystems tend to get ignored somewhat in the rush to save the tropical forest. One such ecosystem is the Mediterranean-type system which actually has a higher rate of endemism — a higher rate of species found nowhere else — than even in the tropical forest. And the lowlands of Botswana have a higher rate of endemism than most of the moist tropical forests. The same is true of the wetland areas of the temperate zones, and it is even more true of genetically isolated areas such as Australia, which has an extraordinary level of endemism, even at very high taxonomic levels.

And then there are areas that are disproportionately vulnerable to human damage, either because of the fragility of their ecological balance, or because of their accessibility. These too should be receiving more attention than they are getting, and the country studies we have planned should go some way towards restoring the balance.

Another issue that I want to mention is data collection. One of the reasons that park management has moved ahead so quickly in the past few years is the development of computerized information bases. UNEP has been particularly active in this field, and the geographical information system of our Global Resource In-

formation Database (GRID) has demonstrated the power of computer modelling as a tool of park management. Our GRID system started off with a number of pilot projects, including one on the African elephant, which has played a major role in the debate over the decisions on how best to protect the elephant. And now UNEP's GRID network has expanded, with information points to form a comprehensive global network.

The GRID data sets now available are among the most sophisticated in the world. They are a management resource that should be used, and I hope that as many of you as possible will take advantage of the GRID workshop being offered at this Congress.

Let me conclude by rephrasing what I said at the outset. The parks lobby — if I can call it that — can either push for an expansion of park cover, or it could devote its energies to improving what we have. I believe that our best hope lies with the latter option. I believe a sounder financial base; a legal framework for the protection of global genetic diversity; a coordinated system of country studies; and a more sophisticated use of modern information technology are all within our grasp. I believe that it is here that we must focus our attention.

This last decade of the Twentieth Century will be decisive in our struggle to protect our planet and its inhabitants. The challenge is to pass to future generations a world of undiminished choices. Each of us must play a role; and we must succeed.



Opening Ceremony

Harnessing public interest for conservation

By
Gerardo Budowski
Board Member
World Wide Fund For Nature

On behalf of WWF, its President HRH The Duke of Edinburgh and its Director General Charles de Haes, I would like to take this opportunity to congratulate those whose idea it was to hold this event in Venezuela. As a Venezuelan I am particularly pleased by this choice of location because it sends a message of support to the conservationists in the host country, and Latin America as a whole, who have laboured for the

cause of conservation for decades, often unrecognized and with little financial support. Conservation has usually received low priority compared to other necessities such as health, education, technological and industrial development, agriculture and forestry, among others.

Having myself participated in three previous Congresses, each separated by a decade, I feel that it is appropriate that this event is held in

Latin America. In this region, a particular effort over the last few years has shown that conservation, based on proper management of national parks and protected areas, can and must evolve into a powerful instrument of sustainable development. This will have important benefits for the fields of health, education, technological and industrial development and many other areas which are of great importance to society.

In reviewing what we have achieved, we should try to learn from our past mistakes to better trace the paths of the future. Where have we failed? I think that one of the lessons that we have learned is that the fate of national parks and other protected areas depends in large part on forces and events outside these areas. I am thinking in particular of local people and decision-makers, and I feel that we have not paid sufficient attention to either group. We need different approaches and strategies to improve our chances of a better working relationship.

In many countries the beneficial relationship between conservation and development is still not well understood. This is partly our fault for not thinking and planning sufficiently in the long-term. Fortunately, this is now changing and a good proof is the distinguished presence among us of a remarkable number of decision-makers.

Regarding local people who live in and around protected areas whether they be in tropical forests, wetlands or coastal zones, we have not been sufficiently sensitive to their traditional practice/values and rights. Above all we have not taken sufficient action to ensure local participation in planning and management of protected areas. Yet many local communities can become potent allies. Some have already demonstrated this, like the Kuna Indians on the Caribbean Coast in Eastern Panama.

However, we need more "success stories" and more joint planning and management. We need to learn from local communities, and above all see a multiplication of successful ventures in a range of different conditions.

We must move beyond the boundaries of protected areas to strengthen the management of buffer zones promoting agroforestry techniques and the stabilization of shifting cultivation.

Furthermore, instead of locking ourselves into polemical debates, for example between conservationists and foresters concerned with timber production, we should search for common platforms to foster mutually beneficial goals. The production of timber should come primarily from plantations established on deforested lands, from well managed secondary forests and from other areas where biodiversity is naturally low. We should avoid timber production in forests with long-established populations who

depend on the forests for their livelihood. If timber is to be extracted from forest lands or other products harvested, this should be done on the basis of long-term forest management systems, rather than the current "forest mining" which leaves a depleted forest behind. Examples of sound forest management are few, and poorly known. It is imperative that all forest management be placed on a sustainable basis by the year 2000.

On the other hand, conservationists managing protected areas should understand that sustainable forest management in buffer zones, in collaboration with local communities, can be the best strategy to reduce pressure on protected areas. Many park managers already realize that protection alone by park rangers cannot guarantee the full integrity of parks.

The wise use of some categories of protected areas should be encouraged, providing that this fits in with local traditions. For example, carefully planned tourism has been successful and has brought real economic benefits to several countries. Research by scientists and students is another way to derive benefit from protected areas. However, the benefits of the use of protected areas should not simply accrue to the treasury. They must be reinvested in and around the areas, to protect biodiversity and ecological processes, many of which are essential for human well-being. This kind of reinvestment can convert local populations into powerful allies for protected area management.

Biodiversity can and should also be conserved outside protected areas. If this is successfully done, it will have important benefits for protected area management, particularly in cases of high external pressures. In this effort it is important to mobilise not only foresters with timber production objectives but also animal husbandry experts, agronomists, local governments and NGOs who should be asked to share responsibilities.

In the past three decades we have had real success in identifying many of the problems facing protected areas. The time has now come to find "multipliers" who can spread the message of conservation, and build support for it in other sectors, rather than always fighting battles to defend our position.

In saying this I remember a speaker at the first International Congress on National Parks in Seattle in 1962, who was critical of the Congress "preaching to the converted". We may still be doing the same today. However, there is a big difference. There were fewer of us then, and we were mostly biologists, and it was true that outside our group few listened to us.

Things have now changed: many Presidents and other decision-makers are seeking our advice. UN agencies spend not 10 but maybe 100 times

or even more on programmes supporting our objectives, and bilateral aid agencies are striving to increase their financial and technical support for conservation. There is even talk of an "Ecological Marshall Plan" for the tropics, and various international conventions are being prepared for signature in the near future.

The time is ripe for action. The international context is favourable in terms of progress towards peace and demilitarisation. It is possible that "peace dividends" could be used to support protected area systems in the widest possible manner. For example, there is talk of "environmental or conservation service" on the lines of "military service" as a normal duty of citizens.

On the other hand, we cannot neglect the range of ecological catastrophes which are affecting, or will affect protected areas, such as global climatic changes, disruption of hydrological cycles, desertification and soil erosion, population growth and its impact on natural resources,

unequal distribution of wealth with its consequent hunger and misery, and inequities. Above all we are now experiencing the daily erosion of biodiversity, especially in the tropics, at a rate never seen before in the long history of our planet.

Appropriate management of protected area systems can mitigate all of these phenomena.

Whether we are successful or not over the coming years will depend to a large degree on whether we can form new alliances with decision makers and key sectors of society through efficient multiplier mechanisms.

It is often said that in many cases civilization began with the cutting of the first trees. It usually ends with the cutting of the last trees. The fate of trees and protected areas is remarkably similar. The fate of protected areas is intimately linked to the future developments in our societies.



Opening Ceremony Support from the international community for development and protected areas

By
Marc J. Dourojeanni
Chief, Environment Protection Division
Inter-American Development Bank

First, I wish to convey to you the special greetings of the President of the Inter-American Development Bank, Mr Enrique V. Iglesias, who unfortunately is unable to be present. Mr Iglesias has asked me to represent him and express to you his best wishes for the success of this Congress, and, particularly, to reaffirm the Bank's intention to continue promoting conservation of ecosystems and their biodiversity and to consider and implement, in so far as they are applicable to the IDB, the important recommendations that will emanate from this meeting. I would like to share with you some thoughts regarding the Inter-American Development Bank's views on the main topics of this Congress.

Latin America has invested exceptional amounts of effort in devising and designing systems of protected areas, establishing them, and planning their management. We believe that our region did it better and faster than any other continent. However, the economic crisis of the

1980s made it impossible to manage protected areas, the most important part of conserving representative samples of ecosystems and their biodiversity. The outcome has been that over these stressful years we have seen cutbacks in investments in conservation and management combined with loss of qualified staff and all too often, the virtual abandonment of significant areas. In many cases, farmers, loggers and miners have then moved in. Worse still, in certain countries the governments themselves have authorized exploitation of energy resources and construction of infrastructure that is incompatible with the purposes of these areas. The "Lost Decade" of Latin America's economy has had terrible consequences for the region's environment. The term "paper parks" has even been coined as a scornful reference to the region's effort to conserve our natural heritage. However, despite the deep wounds inflicted by the economic crisis and poverty, a large part of these protected areas are still intact and their afflictions can be healed.

The Bank in applying the report "Our Own Agenda" (produced by the Latin American and Caribbean Commission on Development and Environment), recognizes that a policy of sustainable development is the best response for a better future. In other words, we understand that the protected areas are only a part of the environmental strategy of each country of the region. Up to a certain point, the protected areas are a protectionist tactic within a sustainable development strategy. While the Bank recognizes the need to maintain representative samples of ecosystems with the least possible human intervention so that natural processes can proceed unhindered, it is also aware of the difficulty of maintaining them inviolate on a continent where pressures to use them are mounting from day to day. In each case we seek to translate the benefits generated in those areas into economic terms that will justify the investments made. The factors considered include what is known about the environmental services that the natural areas provide at the local, national and global level, and the present and potential importance of the biodiversity they contain, i.e. the goods that some of these areas can produce in a sustainable fashion, as well as their recreational, educational, scientific and touristic values. However, in making these strictly economic appraisals, the Bank also pays serious attention to the ethical dimension of the protection of nature and the right of species to exist. Also, we must meticulously evaluate the rights and interests of the peoples living on land adjoining protected areas or within their boundaries, and assure their participation in development or protection decisions that may affect them.

In the specific field of conservation of natural ecosystems and biodiversity, the activity of the international development-financing agencies could be facilitated by some clarifications regarding certain aspects to which, we believe, this Congress could make a valuable contribution. I am referring for example, to activities such as the definition of protected areas and preparation of guidelines for prioritization of actions. Regarding the first point, greater consistency is vital in defining of the categories of protected areas, since these definitions have changed constantly over the past twenty-five years. The fact is that it is hard today, even for experts, to be sure of what is meant when protected areas are referred to. The emphasis has shifted so quickly from protection to conservation and now to sustainable development that there is currently considerable confusion which does not make the task of governments or agencies easy.

For example, these entities should know whether large natural areas with the least possible human intervention are needed for conserving biodiversity. The scientific and environmental

community is sending mixed signals on this. On the one hand, it seems to be saying that maintaining ecosystems without human intervention is just wishful thinking in both ecological and social terms and that the only answer is development. On the other hand, this community continues to affirm that maintaining natural areas without direct utilization is the best option for halting genetic erosion. Under the very broad designation of protected areas, the inclusion of ecosystems that have been profoundly altered by human action, together with a set of management options for production purposes — including agriculture, ranching, and populated centers in certain categories — has created a confusing situation that is clearly advantageous for those who place their own interests before the interest of the larger society. These people can now argue that exploitation of resources in protected areas is environmentally beneficial. This also raises the issue that there are regions or countries where there is a "surplus" of protected areas, but in fact the majority of these protection units are farmlands that are no different from other farmlands, and in general, legal restrictions associated with them are disregarded. It would be most helpful if this Congress were to contribute to clearing up these doubts and clarify the definition of the categories of protected areas and their respective functions, and to call upon the scientific and environmental community to help stabilize the pendulum swings between environmental protectionism and development.

Still persisting today, as it did in the past, is the uncertainty of whether new protected areas should be established before the existing ones are consolidated and brought under efficient management. Here, too, it is clear that there is often exaggeration in one direction or another which could be avoided if the matter were discussed in greater depth. Governments, as well as international agencies, require guidelines for allocating financial resources for protected areas. Also, a tendency has developed to seek to resolve aggression against protected areas by encouraging development around them. Unfortunately, if a balance with the investments for effective management of the areas is not maintained, what may actually occur is just the opposite. Any guidance that the Congress can provide on this delicate matter will be welcomed. In addition, it will be helpful for protected area specialists to continue designing and disseminating techniques for giving values to goods and services and for calculating costs and benefits. Finally, these specialists can also help national institutions design better projects, particularly to help integrate protected areas into regional and national sustainable development strategies.

The Bank is incorporating the establishment, consolidation and management of protected

areas into its operations procedures. Over the last two years it has contributed reimbursable and nonreimbursable financial resources for some thirty protected areas in the region. For example, some of the large operations have been technical cooperation for the development of Costa Rica's national parks (US\$1.9 million) and for consolidation of extractive reserves in Brazil (US\$1.0 million), plus a US\$4 million loan to Trinidad and Tobago for two of its protected areas and for rehabilitation of degraded natural areas. Some twenty projects are under consideration or preparation which incorporate significant protected area components; these include a number connected with conservation of coastal and marine ecosystems, extractive reserves and other forms of sustainable utilization of biodiversity in tropical forests, implementation of effective management in existing protected areas, ecotourism, ecological planning and other equivalent projects. This clearly demonstrates that Latin American and Caribbean countries have a renewed interest in improving the conservation of their peoples' natural heritage. This coincides with the signs of economic recovery in the region.

The real investment requirements for establishing and managing protected areas in Latin America and the Caribbean are immense and greatly exceed the capability of the international development-financing agencies. To illustrate this point I refer you to a detailed study completed last year in Brazil which analyzes the cost of establishing and managing protected areas of different categories over 30% of what is termed the Legal Amazon. The study concluded that more than US\$12 billion would be needed just to establish these areas while the annual cost of their maintenance, i.e. management,

would be of the order of US\$95 million. It is very important to underscore two points here. First, that 96 percent of the cost of establishing the areas is represented by the cost of purchasing the land, which is something that agencies like the Bank are unable to finance. The other 4 percent — some US\$480 million — is needed for infrastructure, demarcation, equipment and planning. The problem is that the IDB, like other banks, requires that land ownership be legally established as a prerequisite for financing investments in the protected areas. This entails a disproportionately large effort by the government, which will also have to repay the loan and pay the interest. Fortunately, in other countries the problem of paying for the land does not arise, or is much less acute, because public land is available. The second point to be emphasized is that, apart from the cost of the land, there is a huge gap between the protection needs and what is presently being invested to establish and consolidate protected areas.

The foregoing reveals that despite the good will of governments and international organizations, we are still far from solving this protection dilemma. If we are really convinced about what we say regarding the universal importance of the biodiversity of our hemisphere, we have no alternative but to adopt new options for financing its conservation. We believe that while this task is chiefly ours, it is also a responsibility of the rest of the nations who benefit directly or indirectly from the goods and services that the natural ecosystems and biodiversity provide, and of those who today, despite the progress made, do not appear prepared to split the bill fairly. The answer to this problem as to others that affect mankind, has to be sought in the principles of complementarity, solidarity and equity.



Opening Ceremony

Protected areas and resource management

By
Rafael Moreno
Assistant Director General, Regional Representative for Latin America
and the Caribbean
Food and Agriculture Organization of the United Nations

On behalf of the Director-General of the Food and Agriculture Organization of the United Nations, Mr. Edouard Saouma, I am extremely pleased to address you at the inauguration of this IVth World Congress on National Parks and Protected Areas.

The objectives of this event are of unquestionable importance and I am confident that the results of your deliberations will have far-reaching effects on the establishment and management of the world's national parks and protected areas and consequently on the sustainable conservation and development of the resources of this planet.

We at FAO are particularly pleased to be one of the sponsors of the Congress and to witness the great surge of interest, concern and recognition of the importance of and protected areas to world conservation and development. For more than 40 years our organization has had the opportunity to have assisted numerous of our 160 member countries with the management of protected areas, particularly those in the developing regions of the world. While concern for protected areas has been demonstrated for many years, it is only more recently that a better understanding of the crucial association of agriculture, forestry and fisheries with protected areas has been more completely understood and accepted.

We find ourselves today in a dynamic world situation with a changing political and economic scene which affects the perspective for agriculture, forestry and fisheries as well as other sectors of society. We are witnessing a tendency away from ideological and political confrontation, and a world, we trust, that is inexorably moving towards improved conditions for peace, international cooperation and prosperity.

Nevertheless, prospects are still uncertain for global economic growth and grave economic and social problems affect much of the developing world. By the year 2025, the world will have to feed an additional 3.2 billion people who will add to the present population that has already

reached over 5.3 billion. Food for this population will have to come from a natural resources base that is already seriously threatened by unsustainable farming practices and other environmental pressures.

Agriculture and protected areas

Agriculture is the activity which is most essential to human survival and well being. It is also the economic sector which most affects and is most dependent on the natural environment. With the acceleration of demand, population growth and technological change, pressures to break the balance between agriculture and the environment have grown. Accelerated natural resource degradation, including deforestation, desertification and loss of biological diversity, and various forms of pollution and contamination have been a common result.

This alarming situation requires the most definite answer on the part of the world community with a view to overcoming present problems. During 1991, a World Conference on Agriculture and the Environment was organized by FAO and the Government of the Netherlands as a preparatory activity to the United Nations Conference on Environment and Development. It brought together a broad representation of experts, countries and interest groups to discuss the diverse and sometimes opposing requirements for sustainable agriculture and rural development.

The Conference aimed at improving our understanding of the implications of sustainable agriculture and a consensus on the actions required for this complex task.

The Conference concluded that efforts must be made to attain three essential goals in agriculture and rural development: food security; employment and income generation in rural areas; and natural resource conservation and environmental protection. The conservation of land, water, plant and animal genetic resources is an essential prerequisite for sustainable agricultural development and there is no question that protected areas have a major role to play in this regard.

An important conclusion of the Conference relating to the conservation of the remaining wildland areas, fragile ecosystems and biological diversity was the recognition that agriculture will have to meet future challenges mainly by increasing the production on land already in use, and by avoiding further encroachment on land that is only marginally suitable. It is gratifying to note the importance this Congress has given to the theme of rural development and the critical need to find solutions acceptable and beneficial to the agricultural communities. We have seen on numerous occasions that without the development of a harmonious and mutually beneficial relationship between protected areas and the contiguous agricultural areas there is little hope for the long-term maintenance of natural habitats.

Forests and protected areas

Forests, including those in protected areas, continue to be threatened by uncontrolled conversion to other types of land uses. Agricultural expansion, overharvesting, overgrazing, fires, airborne pollutants and unwise economic incentives are important factors. The impact of loss and degradation of forests includes destruction of watersheds, soil erosion, loss of biological diversity and damage to wildlife habitats.

Recent studies carried out by FAO estimate that more than 17 million hectares of tropical forests alone are lost annually mainly due to continuing people pressures on forest lands and demands from other sectors resulting in improper land use changes. Solutions to the problems facing forests and land use must be found through a multiple use approach to conservation and development and protected areas. This is particularly true with those categories of management whose objectives tolerate harvest of certain forest products. Forests in developing countries are still often mined for their economic value. Insufficient attention is given to promoting the non-market values and services of forests including the conservation of ecosystems and genetic resources, among others.

Concerted action is needed to increase peoples' perception of the values of forests and of the benefits they provide. Their survival and their continued contribution to human welfare depends more and more on success in the management of protected areas.

The Tropical Forestry Action Plan provides a framework for actions in forestry at national, regional and global levels. The establishment and management of protected areas is an essential component of conservation of forest ecosystems, one of the major pillars of the TFAP and an area that we believe must receive increasing attention in the future.

Fisheries and protected areas

In recent years fishing has far exceeded the regenerative capacity of the world's fish stock and many important fish populations have been highly threatened by uncontrolled fishing. As 90 percent of the world's fish catches come from the sea, proper management of the marine environment is critical.

Protected areas must play an increasingly important role in marine fisheries through the conservation of marine and coastal ecosystems, replenishment of fisheries stock and maintenance of genetic diversity. I am most pleased to see that this issue will receive due attention during the Congress.

Freshwater fish harvest, often of a subsistence nature, is an important source of protein for many communities. Maintenance of adequate water quality for inland fisheries and avoiding changes in the world's rivers by the construction of dams, channelling of river beds, and increased contamination are serious challenges. Policies directed toward integrated regional planning and watershed management in which strategically located protected areas are essential elements, are fundamental to maintaining the quality and quantity of water available for continental fisheries.

Genetic resources and protected areas

The preservation of genetic diversity is a basic requirement in sustaining and improving agricultural, forestry and fishery production. The genetic composition of traditional varieties of plants and animals and their counterparts in the wild are crucial in breeding programmes to increase yield, nutritional quality, resistance to pests and diseases and adaptability to different environmental conditions. It is essential to count on a reservoir of genetic variability to meet increasing demands, but genetic erosion and the extinction of flora and fauna species is occurring at an increasing pace due mainly to loss of natural ecosystems.

Traditional protected areas are very important but we must also search for new and imaginative kinds of protected areas that will be necessary to meet the pressing needs of conservation of biological diversity for cultivated plants and domesticated animals in the future. Provided basic genetic principles are applied, managed utilization of the resources is often compatible with the *in situ* conservation of genetic resources of priority species or species under pressure or threatened with extinction or genetic erosion in part or all of their range.

The Commission of Plant Genetic Resources, established by the FAO Conference, is an inter-

governmental global forum where countries that are donors or users of germplasm, funds and technology, can discuss and reach consensus on matters related to plant genetic resources. The Commission has stressed the importance of creating a global network of *in situ* conservation areas.

It will be essential to raise global awareness of the importance of the conservation of biological diversity to development and to ensure that countries that are poor in financial resources but rich in natural ones, are not left alone to bear the burden that wise resource management may bring about in the long term.

Conclusions

If protected areas are to provide a continued and expanding contribution to achieving sustainable agriculture, forestry and fisheries development, their planning and management must include the active involvement and participation of rural people. Increasingly, responsibility and decision-making in the use of land and natural resources will be made at the local level and collaboration between protected area specialists and farmers, foresters and fishermen will be the only means of assuring successful programmes.

It has been repeatedly shown that without the development of an harmonious and mutually beneficial relationship between agriculture and farmers, and between protected areas and neighbouring agricultural areas, there is not much

hope for the long-term conservation of natural habitats.

We must also realize that no amount of action at the global level for protection of the world's outstanding and critically important natural areas will be effective in the long term unless countries in which the resources occur are sincerely committed to their sound management and are aware of the options and opportunities as well as the restrictions this implies.

International and regional cooperation can provide a necessary framework to channel and exchange technical and financial cooperation. FAO through field projects and concrete technical assistance is assisting many countries in the developing world in their efforts to establish and manage protected areas and has initiated technical cooperation networks and other mechanisms in various regions that have demonstrated the benefits that can be derived from collaborative efforts among countries.

Finally, I want to express our appreciation to the Government of Venezuela for hosting this IVth World Congress on National Parks and Protected Areas and wish the participants every success in their work during this Congress. I also want to assure you that FAO will continue to provide every possible support and assistance to our member governments in the establishment and management of their national parks and protected areas.



Opening Ceremony

Challenges to the world park community in the 21st century

By
James Ridenour
Director, US National Park Service

Three decades ago, just before the first World Congress on National Parks, Yuri Gagarin, the world's first space traveller made a single orbit around the earth. From this vantage point, our perspective of the earth changed forever. The earth, which once seemed so vast, became a tiny globe that could be covered by a man's thumb against the quartz window of that space capsule. And our nations, which once seemed so clearly independent, were suddenly viewed as interconnected pieces of the "whole" planet.

We're now realizing just how truly connected we are and how one nation's actions affect other nations. For instance, when a nation dumps trash into the ocean, it doesn't just disappear. It's carried by ocean currents to other nations and pollutes their beaches. Air pollution generated by one nation is carried by atmospheric currents to others, damaging crops and forests. Even something as obscure as demands for aphrodisiacs in East Asia, made from bear gall bladders, encourages poaching thousands of kilometres away.

We need to understand that we can best solve many man-made and naturally occurring environmental problems by working together — taking advantage of our diverse skills, abilities, commitments and passions. The key to that cooperation lies in our national parks and protected areas; making the most of these valuable places — as research laboratories and educational institutions — is critical to the survival of not only our individual nations but also of this planet as a whole.

A U.S. National Academy of Sciences study described parks as "biological banks". As development changes our landscape, parks often represent the least disturbed sites in the world. Parks alert us to the serious effects of pollution and lead us to take effective action.

What kinds of partnerships can we create to address environmental problems that threaten us on a global scale, and what roles do protected areas play in our efforts? Parks, as relatively pristine places, offer a chance for us to monitor change as it occurs. Already, scientists from the international community are monitoring change and sharing their knowledge. Global change is a worldwide phenomenon warranting fullscale cooperation among our nations.

Another global phenomenon is the loss of biodiversity. As development progresses, protected areas in all nations are becoming especially valuable for protecting species that are highly sensitive to human activities.

One area where we now enjoy many successful international partnerships is in the protection of the many plants and animals that are commonly found throughout the world or migrate across international boundaries. The "Partners in Flight" neotropical migratory bird conservation programme involves cooperation between governmental, nongovernmental, and international groups. They all work together to monitor bird populations, research bird habitat needs and bird population declines, manage and conserve bird habitats, and expand interpretive efforts to help people learn more about these birds.

The global community must find ways to make human activity compatible with the environment's wellbeing. Many nations have successfully established biosphere reserves to achieve this. These reserves help scientists monitor the effects of human activity on the environment, detect problems, and develop solutions.

Through the World Heritage Convention programme, many nations are cooperating to protect areas of universal significance. The global community should redouble efforts to nominate qualified natural and cultural areas to the World Heritage list. Our nations must also work together to ensure that technical and financial resources are available to protect the sites already designated.

National parks and other protected areas are also valued worldwide for their ability to renew the human spirit. People are increasingly interested in their health, both physical and mental. People are hiking, cross-country skiing, and biking. People are also participating in nature programmes such as guided walks with park naturalists, and programmes that emphasize our history.

Often when we think of endangered protected areas, we think only in terms of natural resources. In the US national park system, however, almost 60 percent of the sites were established for cultural resource values. These special places help us understand who we are as a people and demonstrate what we think is significant about our culture. These areas also help our international visitors understand the United States in the same way that a visit to Copan helps visitors understand the Mayan civilization.

In all of these ways, parks are improving the lives of people. Even in large urban areas, a little strip of green with trees and wildlife can be a refuge for people who otherwise are surrounded by concrete and asphalt. The World Bank estimated that in 1990, 42 percent of the world's population lived in urban areas. By the year 2025, that figure is expected to reach 60 percent. Urban parks offer an ideal situation for encouraging people to learn about their natural and cultural heritage.

Obviously, we're interconnected not only because we share this planet, but also because the people of our nations share an interest in preserving and enjoying the world's natural and cultural treasures. As our resource managers look to the future, however, we must reach out to each other even more and work together to develop technologies that can strengthen our preservation efforts. Tourism is a particularly promising field for such collaboration.

Traditional tourism is frequently resource-based, but it may consume the resource. Visitor experiences in special and sometimes remote places can often increase public support for the preservation of critical resources.

The quality and sensitivity which we use to insert park facilities and roads into a natural and cultural setting reflects our concern for the environment as vividly as anything we do. We must consider the integrity and educational values of the visitor experience. Parks should act as showcases for demonstrating effective recycling programmes and for promoting the use of biodegradable products. Tourism and environmentally sensitive design techniques afford us this opportunity.

Tourism, as one of the fastest-growing businesses in the world, may be the best way to help governments understand that establishing protected areas will not jeopardize economic devel-

opment. It can ease employment problems, especially in developing countries. However, I urge caution in promoting tourism to aid economic growth, because if not handled with care, visitors can unknowingly damage the very resource they've come to enjoy. Proper planning and management of the resource can help resolve this problem.

The world is changing rapidly. We need to strengthen our purpose and increase our knowledge in the social as well as natural and cultural sciences. We also need to take definitive action and be able to adapt rapidly to changing needs and demands on the diverse resources of our park systems. We need to be able to evaluate trends, analyze current problems, develop strategies for dealing with these problems, and project alternatives for protecting, managing and using our resources.

Sofar, I've talked about research projects, trends, and planning for the 21st Century. Now, I challenge you. The people gathered at this Congress represent the most astute group in the international environmental arena.

We know that many of the urgent environmental issues threatening our planet need to be addressed from a global perspective. We also know that a new world order, where former enemies are becoming allies, is emerging and is offering us an opportunity to address global environmental issues through partnerships

based on friendship and cooperation. We, in this room, have direct access to the world's leaders and can use our influence to initiate change. We need to urge our leaders to support international "partnerships," so we can share our resources and our environmental research, knowledge and expertise.

We have the capability to form alliances against a common enemy — global environmental degradation, including loss of biodiversity, pollution of the earth's air and water, and destruction of archeological sites. We have a responsibility to work together to better protect this planet's fascinating plant and animal life, and its irreplaceable cultural treasures as well as to improve the lives of all our people.

Recall what Dr Carl Sagan, a world-renowned astronomer, said about our earth: "we live on a fragile planet, whose thoughtful preservation is essential if our children are to have a future. We are only custodians for a moment of a world that is itself no more than a mote of dust in a universe incomprehensibly vast and old. May we therefore learn to act, before all else, for the species and the planet."

As yet, space exploration has not advanced to the point where we can survive on another planet. We must work together to preserve the only home we have — a world we share as interconnected pieces woven into the wonderfully beautiful and fascinating tapestry of the earth's history.



Opening Ceremony

Politics and protected areas

By
Carlos Andrés Pérez
President
Republic of Venezuela

It is a great honour for Venezuela to be the host country on the occasion of this IVth World Congress on National Parks and Protected Areas, which gathers together outstanding experts and distinguished people from five continents and to whom I bid welcome.

I extend my greetings to the members of the Congress Organizing Committee as well as to the guests from the countries, international organizations and non-governmental organizations present here today.

We hope that the meeting in Caracas will be as fruitful as those held in Seattle, Yellowstone and Bali, and that the deliberations and agreements reached result in the strengthening of the planet's natural protected areas, as well as to the consolidation of a major universal alliance that can ensure the planet's preservation in perpetuity, for the benefit of all peoples and for a more productive international coexistence.

We believe that it is desirable and possible, since the countries are acknowledging more and

more the validity of the objectives of the *World Conservation Strategy*, put forward by the World Conservation Union and others, which emphasize the need to maintain the ecological processes and the essential life-support systems, to preserve biological diversity and to enable the sustainable use of the species and ecosystems.

These objectives, later reaffirmed in outstanding documents such as *Our Common Future* and *Our Own Agenda* published by the United Nations, and *Caring for the Earth* of IUCN have gained great significance in this last decade of the 20th Century, given the serious environmental problems that are taking a toll on the development of most of the planet, with unpredictable consequences for the biosphere and quality of life of mankind, and which threaten its very survival.

Being aware of these dreadful risks, and convinced of the usefulness of the natural protected areas for the reduction and prevention of these serious environmental imbalances, Venezuela has united its efforts in order to contribute, within its capacity and with its limited resources, to several of the multilateral initiatives of the world community and at a regional level.

An example of this is our support to the conclusion of treaties, agreements and protocols, such as those related to the protection of the ozone layer, transboundary movement of toxic waste, flora, fauna and strictly protected species of the Greater Caribbean Region, as well as the adherence to several declarations and action plans such as the ones of The Hague, Amazonia and Tlatelolco for environment and development, and the Environmental Action Plan for Latin America and the Caribbean.

In the different technical meetings preparing for the World Conference on Environment and Development which will be held next June in Brazil, Venezuela has defined its position with regard to the important issues that will be studied on that occasion, such as climatic changes, conservation of biodiversity, dangerous waste and toxic chemical products, the management of biotechnology and other items of the United Nation's agenda.

I should repeat here what we have already stated on many occasions: the meeting in Rio de Janeiro will not meet the expectations of the developing world, or even that of the developed countries, if the basic problems of development, poverty, malnutrition, substandard housing, health services and education are not approached with sincerity and with a constructive mind, considering them as the fundamental causes of the environmental degradation, even in the strictly protected natural areas.

Venezuela's development has been consistent with conservation ideals and we founded the

Henri Pittier National Park as early as 1937. This started the creation of national parks and other kinds of protected areas, which today cover more than 15 percent of the country's surface area. These include: 29 national parks, 17 natural monuments, 27 forest reserves and wooded sites, 9 wild and water fauna reserves and refuges, 9 wetlands reserves and 2 recently declared biosphere reserves, which together cover some ten million hectares.

In order to organize and improve our protected areas, the Government of Venezuela will soon submit to Parliament a new law for the National System of Natural Protected Areas, according to the most modern criteria in this field.

In spite of the fact that these legal entities of land use are significant in number and extension, they have not hindered so far the country's development and neither have they generated serious conflicts with the productive activities of the different sectors of the economy. It is appropriate to mention this because it highlights the compatibility that may and should exist between conservation of the environment and sustainable development. I must admit that there is still a lot to be done in order to mend the errors in the management of the protected areas, many of which have been damaged by an improper use.

The exhaustive collection of subjects of this Congress includes topics of special interest for Venezuela. The analysis and discussion of these during the workshops and plenaries will undoubtedly give rise to new proposals and recommendations, which we will study thoroughly in order to apply them with effectiveness.

The current and potential economic significance of national parks and other protected areas is one of the priority aspects to which we expect this Congress will contribute. Recreation and ecological tourism appear to be some of the ways to harness resources for the protection and research of the ecological potential they hold.

Our broad coastal and insular system requires urgent measures for zoning, sanitation and use regulations, especially on coasts, beaches, lagoons and deltas, all of them suffering the increasing pressures of a non-sustainable development. During the seventies, key decisions were made in order to protect the mangrove ecosystems and other coastal areas through establishing protected areas, national parks and wildlife sanctuaries.

However, we now have to intensify the preparation and implementation of management plans and the application of use regulations corresponding to vulnerable and unprotected parts of the country. From this year on, these spaces have a legal instrument: The Penal Code for the Environment. In this action, we hope to be granted international assistance and to make

good use of the experience from other countries of the world that have been successful in this field.

In spite of the fact that we have made progress with regard to the commercial exploitation of several species, we should consult so as to ensure the survival of some of our vulnerable and endangered species, whose populations have, in some cases, decreased at an alarming rate.

Important steps forward have been the reorganization and strengthening of the National Parks Institute and the founding of the Autonomous Service for Fauna from the Ministry of the Environment, as well as the establishment of the Alejandro de Humboldt Research Center in the Province of Amazonas and the National Center for the Conservation of the Phylogenetic Resources.

One of the most significant issues that this Congress will address is the financing mechanisms for the management of protected areas, a vital element for the success of protected areas in developing countries. Our position with regard to this is fully compatible with the approach of the above-mentioned *World Conservation Strategy*, and with the Latin American concepts presented in *Our Own Agenda*. In the latter case we insist on the need to make sure that the credits granted to countries by international financing organizations for conservation purposes will not be deducted from those allocated for development investments.

Similarly, the cost of technology transfer, should be in tune with the principles of equity that should form the foundation of good relations between the industrialized and developing nations. A non-commercially-based access to biotechnology by the developing countries is essential to guarantee the conservation of the biological diversity that we encourage.

It is with much interest that we keep track of the significant changes in the world order which have given birth to the openness and detente of East-West relations. However, it is worrying to see that the industrialized North behaves with the Third World countries in a non-reciprocal manner, and that while Latin America goes forward with patterns of commercial deregulation, it is suffering the consequences of protectionist and discriminatory measures. It is unquestionable that a gradual deterioration in the real terms of exchange between North and South will reduce our capacity to stimulate economic and social development programmes, as well as action for the defence of the environment and preservation of natural areas.

We are sure that the conclusions and recommendations of the IVth World Congress will be of vital importance for the progress of the environmental cause, and the strengthening of national parks and other types of protected areas. This cause is worth the struggle and it involves us all.

I would like to end by wishing you success in this important meeting and a pleasant stay in our country.

Symposium I

**How protected areas can
meet society's needs:
the social, economic and political issues**



**Symposium Chair: Walter Lusigi
Coordinators: Peter Kramer, Bing Lucas**



Workshop I.1

Social perceptions and protected areas: how to build greater political support

Chair: Hon. D. W. Marshall
 Vice-Chair: Shekhar Singh
 Organizer: IUCN (Jeff McNeely)
 Rapporteur: Bill Mansfield
 Resource Person: Janet Barber

Overview

The aim of the workshop was to discuss inadequacies in the level of political support for protected area systems and to make recommendations to increase that support.

About 20 people from a range of nations around the world attended. They included park managers, members of Parliament, politicians, scientists and representatives of NGOs and of governments. The workshop included presentations of case studies, as well as a general discussion.

The workshop addressed the following questions:

- What inhibits political support (from politicians, planners and administrators) for protected area systems? What measures can be taken to overcome this resistance?
- What are the optimum political and social conditions for taking the right decisions on the sustainable use of natural resources? How can conservationists work within less than optimum conditions? What options are available?
- What makes a government listen to environmentalists or park planners? Is it evidence of voter enthusiasm, economic return from parks, or peer pressure from other governments?
- How can transparency be achieved in the debate and decision-making process at the local, regional and national level? How can government hostility and secrecy be overcome?
- How important is it to have a participatory decision-making process? How can this be achieved in different political and social systems?
- What individual examples demonstrate that government support has been successful in strengthening parks and introducing

sustainable development as a principle of government? And where has a lack of government support led to destructive use of natural resources and degradation of protected areas?

Conclusions

Commonly, the lack of political support for protected area systems can be attributed to the following factors:

- A lack of awareness of the value and meaning of such a system as well as its scientific requirements.
- Seeming conflicts with economic growth and "development" objectives involving dams, power stations, roads, and the extraction of wood, biomass, minerals and water.
- Perceived conflicts with the interests of the local community involving access to natural resources and habitation, grazing and cultivation.

Means of surmounting the lack of political support are rooted in education, training and use of mass media for raising awareness. Other methods which were suggested are:

- Making conservation fashionable.
- Using international pressure through the use of international organizations, "flagship species", and strengthening the international NGO networks.
- Developing and implementing national plans for protected area networks.
- Supporting and strengthening national NGOs.
- Evolving alternate paths to development that are environmentally sustainable and better managing development activities in terms of the environment.
- Establishing the economic advantages of conservation, keeping in mind the difficulties and perhaps undesirability of evaluating species and ecosystems in purely financial

terms and the ethical rather than purely economic justifications for conservation.

- Exposing the fact that the conflict is not between development and the environment but between short-term economic growth and sustainable development; and not between the needs of local communities and conservation, but between the needs of local communities and the consumption patterns of the urban rich.
- Linking conservation issues with issues of poverty and injustice which are the main concern of the masses and developing local level justifications for protected areas through ecodevelopment and other such strategies that allow local communities to benefit from such areas.

Many governments are not doing enough to create conditions that would stimulate public debate on the future of protected areas. They are not providing sufficient relevant information to appropriate groups on the environmental significance of their protected area systems and the true environmental impacts of proposals for economic development within those areas. To this end, governments should ensure that access to information is a fundamental right of their people. Governments should also guarantee fundamental rights of freedom of expression to enable NGOs (and their networks) to be fully effective in strengthening and extending protected area systems.

The motivation of governments in respecting principles such as the maintenance of biological diversity and ecosystem health is poorly researched and understood. The correlation between different government styles and systems and receptivity to the environmental imperative is also inadequately understood. Unless these weaknesses in understanding are addressed, all those involved in the promotion of environmental issues will continue to be at a disadvantage.

The mechanisms for citizens to participate in decision-making on the future of protected areas are inadequate. Even where these mechanisms do exist, governments often do not reflect the results of such processes in their policies and activities. Governments should allow citizens to participate in all levels of environmental decision-making in relation to protected areas.

International environmental conventions contribute to building political support for protected areas and the new convention on biodiversity should be supported. A formal list of protected areas would be a useful part of such a convention.

Outputs and Follow-up Action

- IUCN members should resolve to understand the motivation of governments in their own countries. Which key groups — farmers, the industrial sector, environmentalists, for example — exert most pressure on government attitude? IUCN should seek better understanding of situations in which comment from other governments, the foreign media, or NGOs is beneficial or detrimental to a government's stance on environmental issues.
- IUCN should commission a survey to determine the extent to which these kinds of analysis have been undertaken, and whether they have been used by interest groups to enhance their approaches to government on environmental issues.
- IUCN should publish, in due course, papers on the subjects of "What motivates governments to respond to the environmental imperative" and "Government constitutions and governing styles in relation to environmental imperatives".

Papers Submitted

- BONIFAZ, A. Neptali. Los Conflictos Políticos y las Áreas Protegidas República del Ecuador.
- BUE, Alain D. Parcs Nationaux, Aires Protégées et Géopolitique.
- DAVIS, Bruce. Overcoming Political and Administrative Barriers to Effective Protected Areas Management.
- DORMAN, John C. The Role of the NGOs in the Creation of a Park System for the Hunter Valley, New South Wales, Australia.
- D'HUART, J.P. Conflicts d'Armes et d'Aires Protégées en Afrique Centrale.
- GABALDON, Arnoldo José. Percepciones Sociales y Áreas Protegidas: Cómo Inducir Mayor Apoyo Político?
- JANIS, Ramon and Retno SURATRI. Siberut: Conserving Biodiversity and Traditional Cultures.
- MacKINNON, Kathy and Wido S. RAMONO. Flagship Species to Attract Funding and Support for Indonesian Parks and Protected Areas.
- MANG, Johanna. Conservation Strategy for Austria: New challenges and the Need for Political Support.
- NOBBS, Amanda. Building Political Support for Protected Areas: The Wider Implications of the UK Experience.
- PARTIDAS ALZURU, Jorge. La Soberanía y la Ecología: El País Ambientalista.
- SERRANO, Francisco. Los Parques Nacionales y la Reforma Agraria en El Salvador.

SINGHAL, Rekha. Human Resource Mobilization for Conservation of Protected Areas.

TRESINARI BERNARDES, Angela. Protected Areas as Perceived by a Changing Society.

TRIWIOWO, T. and Henry SUBAGIADI. Building Public Support for Protected Areas: A Case Study in Meru Betiri National Park.

VERSCHEURE, Hernan. Minería en Áreas Silvestres Protegidas en Chile: Impacto, Legislación, Propuesta para una Acción Ciudadana de Protección Regional Coordinada.

ZUPANCIC-VICAR, Marija. The Influence of the Reprivatisation of Land on Nature Protection and Protected Areas.



Workshop 1.2

The economics of protected areas

Chair: Mohan Munasinghe
Vice Chairs: Mary Dyson, Jim Foley, Walter Lusigi
Organizer: World Bank and IUCN (Jeff McNeely)
Rapporteurs: Claudia Alderman, Robert Healey, Michael Wells

Overview

The aim of the workshop was to present the state of the art in assessing the economic contributions that protected areas make to society, and to address the policy and institutional changes that are required to enable protected areas to enhance their economic contribution to society (e.g. changes in ownership and land tenure).

The workshop covered both terrestrial and marine environments, and included efforts at different levels (i.e., local, regional, national and international). Approximately 125 people attended the workshop. Twenty-six papers and 9 short interventions were presented. Three smaller groups discussed economic analysis, multiple use strategies, and economics of tourism, respectively.

Conclusions

1. Economic Analysis: Techniques and Applications

Significant progress has been made in the application of economic analysis to protected areas, particularly in valuing some of the non-market costs and benefits. However, further work is required on the irreversibility of biodiversity loss, inter-generational effects and inequitable income distribution. In developing countries, where development has high priority and there are large numbers of poor persons, special emphasis must be placed both on

methods of economic analysis and on practical policy instruments that will simultaneously protect natural habitats and alleviate poverty.

Valuation of biodiversity itself has been limited by the availability of scientific information and knowledge of the relationships among species, ecosystems and the physical environment. It is important to recognize that economic analysis cannot estimate all of the costs and benefits relating to protected areas — and that existing techniques must be used cautiously. When monetary evaluation is not possible other methods such as multi-criteria analysis could be used to give appropriate weight to non-valued environmental impacts.

a. Micro-economic Analysis. Most theoretical and empirical work has concentrated at the micro level. It is recommended that this work now provide the basis for an expansion of case studies to demonstrate the practical feasibility of site-specific analysis, especially in developing countries. Specific micro-economic areas requiring further study include:

- The distribution of costs and benefits.
- Treatment of inter-generational effects.
- Financial viability of investments in protected areas.
- Maximizing rent capture through appropriate pricing (e.g., park entry fees).
- Use of incentives to mitigate local financial burdens.

b. Expanding the Analysis. It is recommended that site-specific economic analyses of protected areas be expanded beyond protected area boundaries to encompass land use and other decisions involving local communities and linkages with regional economic planning and development.

c. Macro-Economic Analysis. Greatly expanded attention should be given to linkages between the environment and economy wide processes and policies in macro policies (soil, exchange rate management, trade policies, etc.); and specific sectoral policies, such as energy pricing. In both cases, the emphasis should be on identifying and correcting market distortions and getting prices to reflect full economic costs, including environmental externalities.

The proposed biodiversity convention should be subject to appropriate economic analysis, particularly to identify effects on the distribution of costs and benefits of biodiversity conservation among countries, communities and individuals.

2. Multiple-Use Strategy and Impacts on Local Residents

Protected areas can meet the needs of society only if social analysis is fully integrated with economic and ecological/biological analyses in their application to protected areas. Areas will not be protected unless their management is acceptable to the local communities and they themselves are involved in, and benefitted by, their existence.

a. Compromises and solutions between conservation and development issues are site-specific and a site-specific approach is the best hope of a culturally appropriate solution. Socio-economic analysis should be the first step in evaluation of the potential sustainability of a protected area. Part of such analysis would entail establishing local use of a protected area and identifying local needs and preferences as a means of providing incentives towards positive acceptance of any burdens or limits put on local communities by others in the process of their land being "protected".

b. Education is the primary means of providing opportunities for development to all people, and it is usually recognized as such by subsistence-level and illiterate communities. Basic subsistence needs such as health and water would also be high priorities.

c. Extension work and new technologies to improve use of available land to reduce pressure on protected areas should be researched and promoted.

d. Land tenure needs to be secure, whether for communities or individuals. Perverse legal incentives which foster deforestation and infringement should be removed. Positive legal

status should be reinforced, rather than *de facto* ownership.

e. Economic distortions, such as water subsidies which promote abuse of water and ultimately affect catchment areas, should be abolished. People should be educated and motivated so that they will give up trading in endangered species or other forms of behaviour which threaten biodiversity.

f. Institutional mandates should not be self-contradictory and self-defeating, and institutions should not provide incentives for misuse of resources.

3. Managing Tourists and Tourism

It has been estimated that tourism to appreciate and enjoy nature accounts for 40 to 60% of all international tourism. The economic impact worldwide is in the range of hundreds of billions of dollars. But tourism is not just big business, it is an activity that can be harnessed as a tool for conservation. Like all forms of tourism, nature-based tourism should not degrade the resource and should contribute actively to sustainable development.

a. Understanding Tourism and Tourists. Nature-based tourism is difficult to define, because among other things, "ecotourists" are often also cultural tourists and because many parks are visited by both tourists and local recreationists. As IUCN becomes involved in nature-based tourism, it needs to define the term better, and examine its interactions with other types of tourism and recreation. Research is needed on the scale of tourism to protected areas, the motivation and satisfaction of the tourists and on the tourism life cycles of particular areas. The World Tourism Organization (WTO) and tourism researchers should be involved. In promoting tourism to protected areas, it should be realized that most tourists demand a high quality product. There is a limit to what they are willing to pay, particularly if the product is perceived to be of insufficient quality.

b. Involvement of Local People. Many parks which receive tourists are surrounded by poverty. At present the tourism business is in the hands of only a few wealthier people, while responsibility for care of resource is diffuse. Much of this responsibility lies with local communities which lack the funds for proper management. In order to compensate local people for the loss of use of nearby resources, and to obtain their collaboration in protecting parks, a larger proportion of tourism revenues should be recycled locally. More attention should be paid to developing national as well as multinational tour operators, and smaller scale enterprises, including community-controlled enterprises.

c. Education. Education is necessary for both the tourists and the local people. Tourism to protected areas may be considered a form of adult education, and sophisticated tourists are demanding a high level of knowledge on the part of tourist guides. Some areas are considering certification or licensing of guides so as to ensure a high quality of service. Local people need to be informed of the potential benefits of tourism. Exchange of information is needed among all those with a stake in tourism. Local people and tourists can be involved in projects, furthering mutual understanding. Tourism by nationals should be promoted since it is a powerful form of education and can build a constituency for protected area systems.

d. Appropriate Pricing. Ways must be found to extract revenues from tourism for the support of protected areas, without discouraging their use by nationals. Entrance fees which differentiate among classes of visitors offer considerable promise and are already used in many countries, including in the Galapagos Islands of Ecuador and St. Kitts.

e. Carrying Capacity. More information is needed on the carrying capacity of destinations, and that information should be put in the hands of local park managers. Carrying capacity information can be useful in zoning tourism areas and in setting visitation limits. The possibilities and the costs of replenishing or restoring areas degraded by unsustainable tourism also need to be better understood.

f. Access. Access to tourism opportunities should be widely available, including access for local people and for the handicapped. Access helps create a constituency for parks.

Outputs and Follow-up Action

A volume of selected papers from the workshop entitled *Economics and Protected Areas* will be published by the World Bank in cooperation with IUCN.

Papers Submitted

- ACOSTA ARIAS, Jorge. Elementos para una Valoración Económica de la Pérdida de Biodiversidad por Efecto de la Explotación Petrolera en la Reserva Faunística de Cuyabena en el Ecuador.
- ADDO, Florence A., Emmanuel O.A. ASIBEY, Kate B. QUIST and Mary B. DYSON. The Economic Contribution of Women and Protected Areas: Ghana and the Bushmeat Trade.
- ALDERMAN, Claudia L. The Economics and the Role of Privately Owned Lands used for Nature Tourism, Education and Conservation.

BARRIOS, Diomira. Opciones Administrativas para el Manejo de los Recursos Forestales: Un Caso de Estudio.

BICKMORE, Catherine J. Mersey Barrage Feasibility Study: A Practical Application of Environmental Economics.

BUTLER, James R., Glen T. HVENEGAARD and Doug K. KRYSTOFIAK. Economic Values of Bird Watching in Point Pelee National Park, Canada.

CACHA, Ma. Dulce M. Starting Resource Accounting for Protected Areas.

*L. CORNWELL and J. ESCHEVERRIA. Values and Technologies.

CRAIK, Wendy. The Economics of Managing Fisheries and Tourism in the Great Barrier Reef, Australia.

DE GROOT, Rudolf S. Functions and Values of Protected Areas: A Comprehensive Framework for Assessing the Benefits of Protected Areas to Human Society.

*DE LACEY, Terry. Using Contingent Valuation Methods to Measure the Conservation Value of Protected Landscapes in Australia.

DE LACEY, Terry. Estimating the Non-Market Values of Nature Conservation Resources in Australia.

FILION, Fern L., James FOLEY and André J. JACQUEMOT. The Economics of Global Ecotourism.

HEALY, Robert G. The Role of Tourism in Sustainable Development.

HEYMAN, Arthur M. Impact of a Marine Park on the Regional Economy: An OAS Case Study from Saint Lucia.

HUBER Jr, Richard M. Case Studies showing Cost/Benefit of Tourism and Protected Areas Development.

HYDE, William F., Keshav R. KANEL and Ernest D. MISOMALI. The Marginal Costs of Endangered Species Management.

JAFFE CARBONELL, Klaus. Tecnológicas Alternativas para el uso y Conservación de Bosques Tropicales.

KRAMER, Randall, Mohan MUNASINGHE, Narendra SHARMA, Evan MERCER and Priya SHYAMSUNDAR. Valuing a Protected Tropical Forest: A Case Study in Madagascar.

LUSIGI, Walter J. Socio-Economic and Ecological Prospects for Multiple Use of Protected Areas in Africa.

MUNASINGHE, Mohan. Economic and Policy Issues in Natural Habitats and Protected Areas.

NGOGNJE, Jean. La Valorisation des Parcs Nationaux par les Zones Cynégétiques Périphériques: l'Expérience Camerounaise dans la Province du Nord.

*OMOTOLA, J.A. Economics and Intellectual Property Rights.

*PARRIS, Dick. Economic Evaluation of the Greater St. Lucia Wetland Park, Natal, South Africa.

PELLEW, Robin. Global Biodiversity Status Report.

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Workshop I.3

People and protected areas

Chair:

Claude Martin

Organizers:

WWF and IUCN (Jeff McNeely)

Session chairs/

Rapporteurs:

Keith Brown, John Cordell, Gonzalo Oviedo, Hemendra Panwar, Vithal Rajan, Dermot Smyth, Sylvie Grizzle

Overview

It is widely recognized that protected areas cannot co-exist with communities that do not support the conservation purposes for which these areas have been established. A far greater effort must therefore be made to gain the understanding and active participation of local people in the establishment, management and monitoring of protected areas. This requires a better understanding of the cultural context of local communities and a greater responsiveness to their concerns, aspirations, and needs.

The workshop was organized to identify issues relevant to local communities and their interactions with protected areas and local environments, and to develop principles to meaningfully expand community involvement, including self-sustaining activities, employment, and income generation. Issues regarding the recognition of customary tenure systems, property rights in relation to conservation efforts, and gender concerns received special emphasis.

Not surprisingly, the cross-cutting theme of this workshop attracted a large number of Congress participants. The number of people attending the workshop fluctuated from roughly 220 at the opening session to around 150 after breaking into sub-groups. About 70 participants submit-

ted abstracts or full papers, which made it impractical as well as undesirable for participants to read their papers, with the exception of six overviews. The Chair and participants favoured making the workshop as interactive as possible and the sessions were structured accordingly after an opening discussion on the purpose and expected output of the workshop, as well the interrelations of workshops I.3, I.4 and I.5, all of which addressed specific people-related topics. Major issues identified were: changes in attitudes vis-a-vis people residing in and around protected areas; institutional mechanisms to better address "people participation" issues; guidelines for park managers to expand local participation; property rights and protected areas; and monitoring land-use sustainability.

The following sub-groups were formed to address these issues in more depth:

- People Living in Protected Areas: those who are part of the system, integrated or relocated?
- Where Does the Power Reside?: participatory processes and the role of social scientists.
- "Ecodevelopment" (integrated conservation/development approaches) and the question of aspirations, lifestyles, and cultures.

- Tenure and Sustainability of Protected Areas: land and marine tenure, indigenous property rights.
- Women, Men, and Community Development.

The sub-groups outlined a series of specific proposals and recommendations, collated and condensed below. The sub-group reports stimulated some lively, constructive debates. They also revealed the pressing need to change attitudes about the actual conditions and roles of local communities — starting with the conservation community itself.

Conclusions

a. IUCN, in cooperation with governments, should work to achieve better integration of protected area planning and management with sustainable development policy for local economies.

b. Governments should recognize the needs and aspirations of people living in or near protected areas, and not enact measures which subvert local cultural continuity and social values.

c. Biodiversity action plans based on protected area networks should become more people-centred, and overall, oriented towards ecologically sustainable development.

d. IUCN should urge protected area managers to acknowledge the conservation and resource management potential of customary and indigenous tenure and further assess the implications of local property systems for sustaining biodiversity. Accordingly, IUCN should develop a policy to support indigenous peoples' and other traditional communities' own tenure-based resource management strategies, and initiatives to integrate their rights and interests in protected area management.

e. IUCN should promote the recognition of local tradition, knowledge, and sustainable resource utilization, when zoning protected areas and allocating management categories. In this process, pre-existing, traditional land-use patterns should be recognized.

f. IUCN should alert protected area managers and planners to the fact that various traditional ownership and tenure customs also occur widely in marine and coastal ecosystems. Therefore, provisions should be developed for incorporating property rights of coastal and maritime communities in the design, siting, zoning, and management of marine and aquatic protected areas.

g. IUCN should encourage governments to respect and uphold indigenous and traditional rights and tenure where ancestral lands coincide with protected areas. This principle should be reflected in international legal instruments and conventions such as the Draft UN Declara-

tion on the Rights of Indigenous Peoples, and the proposed Biodiversity Convention.

h. When governments have insufficient means to maintain protected area systems, delegation of clearly defined management functions to local communities and non-governmental organizations should be considered. Governments should recognize the role local NGOs and village associations can play as interlocutors to local communities.

i. IUCN should promote the participation of local communities in long-range planning, monitoring and evaluation of the relationship between people and protected landscapes.

j. In order to promote innovative ways to increase participation of local communities in protected area management IUCN should help develop guidelines and appropriate means to relay them to specialists involved in the diverse phases of managing protected areas.

k. IUCN should promote the sharing of information through publication of guidelines and books on opportunities and experiences of local community and NGO participation in protected area management. IUCN should also promote educational curricula and training programmes for wildlife and national parks training institutions emphasising community development aspects and participatory processes. Existing institutions should be strengthened to fulfil these concerns.

Outputs and Follow-up Action

a. Participants envision a combination of activities to advance the aims of the workshop, consisting of publications targeting both specialist and non-specialist audiences, development of management guidelines for protected area authorities, and organization of a working group within CNPPA to oversee action-oriented research and meetings on key management and social issues.

b. IUCN should establish a task force within CNPPA to undertake a comprehensive evaluation of the significance and fundamental relationship between property rights, laws, and institutions, and the sustainability of protected areas. This task force should address particularly: the relevance and contemporary management applications of customary "communal" property systems, as recommended in *Caring for the Earth*; tenure-related problems in establishing and managing protected areas; territorial and legal conflicts; gender issues; tenure concerns of non-indigenous traditional societies as well as indigenous groups; problems of customary tenure in transfrontier situations; and opportunities to work cooperatively with other

Commissions, especially the newly formed inter-commission Task Force on Indigenous Peoples, and the Commission on Environmental Law. Initially, this working group would organize a series of regional meetings, bringing together representatives of protected area communities and management authorities to explore co-management options that might help resolve tenure problems in certain areas.

c. The organizers and participants of the sub-group on tenure concerns of traditional societies including indigenous groups plan to produce a practical handbook on this theme, directed primarily to protected area managers. This book would develop a cross-cultural perspective, based

on papers contributed to the workshop, but would also draw on findings from other cases and projects.

d. WWF and IUCN will publish a book entitled *People and Protected Areas* about experiences of local communities in the people-protected area equation, that would treat the concerns of the workshop as a whole (including I.4 and I.5), and be accessible to a wider audience.

Papers Submitted

Listed at the end of report on Workshop I.5



Workshop I.4

Community-based management of protected areas

Chair:	Yves Renard
Session Chairs:	Migdalia Alvarez-Ruiz, Leslie Hudson, Tony Press
Organizer:	Caribbean Natural Resources Institute (CANARI) and IUCN (Jeff McNeely)
Rapporteur:	Leslie Hudson

Overview

Human communities have important relationships with protected areas. These relationships have usually been ignored by, or seen as detrimental to, conservation initiatives. Protected areas can achieve significant social and economic objectives, and must be socially just and responsive. Protected area management must recognize and build on these relationships by incorporating community knowledge, resource use practices, decision-making mechanisms, and institutions, into a shared "co-management" responsibility between governments, non-governmental organizations, and concerned communities.

The aims of the workshop were to share the experiences of workshop participants in community-based management and to advance reflections on participatory planning and co-management, including institutional arrangements and other specific instruments.

The workshop was divided into three sessions. The chair began the first session with an overview of community-based management, a

clarification of the definition of **community** as "a group of people who consciously share a common functional or moral link, such as kinship, occupation, place of residence, religion, or values," and a discussion of the concept of co-management (in which management authority and responsibilities are shared by governments and communities) as well as the instruments required for its implementation. Seven case study presentations were followed by a general discussion on the goals and content of the workshop.

The second session began with seven additional presentations, then participants broke into three working groups to address specific topics: participatory planning (Spanish); participatory planning (English); and institutional arrangements for co-management. The third session began with two more presentations, then held an extensive discussion on the draft Congress recommendations (Section I.6) that specifically related to workshop I.4. It concluded with reports from the three subgroups, and a short discussion on suggested outputs from the workshop.

Conclusions

The rationale for co-management is based on the following premises:

- a. The prevailing model for protected areas is often inadequate.
- b. A community-based approach to protected area management is more effective than the prevailing model.
- c. Community knowledge and traditional management systems are relevant and valuable in protected area planning and management.
- d. Traditional community rights and practices relating to resource use should be respected and built upon.
- e. Legal recognition of customary law and subsequent endorsement through statutory law is necessary.
- f. Protected area management activities must be integrated into a broader socioeconomic context.
- g. Local communities should be formally, legally represented on management boards of protected areas.
- h. Park management should have a social conscience, with community empowerment being both a desirable developmental objective and a critical factor in the success of co-management.

The workshop recommended that the co-management approach be an essential part of park managers' training, with the case study materials proposed below providing a foundation.

The workshop reaffirmed the relevance and usefulness of co-management arrangements for protected areas. It noted that park management must be placed in its social and economic context, and that interdisciplinary approaches are needed. Much discussion focused on the question of the initiative of community-based management projects and programmes, and on the need to integrate popular management systems. It also stressed that different time frames and project implementation mechanisms are needed to permit genuine participation and power sharing.

Work with resident communities and user groups requires care and respect, based on a good knowledge of the community. A useful framework for community appraisal includes three components, which can be consecutive or concurrent:

- a. Training of those who are expected to participate in the process, namely the park personnel, the community leaders and the community organizations.
- b. A participation mechanism which involves:

- Strengthening or establishing community organizations, with the appropriate legal base.
- Offering viable economic alternatives.
- Offering financing options.
- Providing institutional support to the community process.
- c. The implementation of projects at the community level.

The following guidelines can bring about effective participatory planning:

- a. The setting must be conducive to participation and culturally appropriate. Small groups tend to elicit more participation. Foster an environment of humour and fun. Use problem-solving activities to build group cohesiveness and generate visible results.
- b. Start with a small, highly-motivated group, which is credible for its technical expertise or its commitment to the cause. Show the group what power it has, where other power lies, and how it can gain more power.
- c. Incorporation or use of traditional cultural practices can be an effective vehicle. Make use of community knowledge (from traditional peoples, resource users, commercial interests, recreationists, or whoever has intimate knowledge of the resource).
- d. Build and maintain trust among participants and between yourself and participants.
- e. Recognize and address people's most pressing needs first, and link conservation goals with these priorities whenever possible. Offer benefits to participants.
- f. Identify and engage all those who should be involved, even if they are not motivated to participate. Use of a liaison may be helpful. Seek input from everyone concerned, then try to arrive at a consensus or compromise position.
- g. Special efforts and arrangements may need to be made to involve women, who are often specifically excluded from participation in men's discussions, or at least hindered from sharing their views. These may include separate meetings or associations, or different formats for participation.
- h. No one technique for participatory planning works by itself. Use a combination of approaches, tailored to fit the specific local conditions and cultural setting.
- i. Know what resources are available, and how to tap others. A small infusion of outside assistance, such as legal or technical advice from an NGO or other concerned party, may provide the necessary impetus for participation.
- j. Provide local responsibility for protected area management.

Outputs and Follow-up Action

- a. A handbook on effective participatory planning and management tools and techniques should be prepared, to include case studies which bring to light examples of each of the guidelines and tools and techniques proposed. Ideally, the publication of such case studies should take place on a periodical basis.
- b. IUCN should convene a workshop for representatives from 20-25 co-management situations, to develop the studies and analyze the results and lessons. These case studies could provide the basis for a more thorough understanding of the methodology, problems faced, and institutional arrangements necessary, provide the foundation for materials prepared for dissemination to others in the field, and help to develop a network for those implementing this approach.
- c. IUCN should develop a documentation centre for co-management. There is currently little written record on this basic protected area management strategy.

Papers Submitted

Listed at the end of report on workshop I.5



Workshop I.5

Indigenous views of protected areas

Chair: Chief Bill Erasmus
Organizer: Dene Cultural Institute, IUCN (Jeffrey McNeely)
Rapporteur: Martha Johnson

Overview

The aim of this workshop was to demonstrate how the knowledge held by local people can be applied to management problems, and how the perceptions of indigenous people can be incorporated within protected area management.

The workshop drew some 300 participants from around the world, representing a broad range of professionals working for governments agencies, non-governmental organizations, and academic institutions. While a number of indigenous peoples from Venezuela attended the workshop, other countries were severely under-represented. Since a large number of papers tabled, presentations were limited to five minutes for each paper, followed by five minutes of discussion. After the presentations were completed at the end of the first day of the workshop, the Chair established four working groups to formulate recommendations to IUCN regarding the role of indigenous peoples in the management of protected areas.

Conclusions

Due to the wide range of agenda held by the many interest groups present at the workshop,

and the vastly different social and ecological situations they came from, it was difficult to reach a consensus on anything but very general issues that needed to be addressed by IUCN. Despite these limitations, the following common themes emerged from the recommendations that were put forward by the different working groups:

- a. IUCN should recognize indigenous territorial rights as a pre-condition for the management and establishment of protected areas which involve the home lands of indigenous peoples.
- b. IUCN should recognize indigenous environmental knowledge and traditional management systems as the principle basis for protected areas planning, management and use.
- c. IUCN should support the documentation and application of indigenous knowledge and traditional resource management methods.
- d. IUCN should recognize the important role of women's knowledge and participation in protected area planning, management and use.
- e. IUCN should recognize the intellectual property rights of indigenous peoples and promote appropriate compensation for the provision of services.

f. These recommendations and future IUCN activities involving indigenous peoples should be carried forward by an inter-commission Task Force on Indigenous Peoples.

Outputs and Follow-up Action

a. In view of the great interest in this topic, IUCN should publish a series of case studies on indigenous involvement in protected areas.

b. IUCN should also establish an inter-commission Task Force on Indigenous Peoples, and ensure that it receives sufficient funding to meet and draw up a detailed action plan for implementing the recommendations contained in this report, as called for at the IUCN General Assembly in December 1990. The full participation of institutions such as Indigenous Survival International should be ensured. The workshop recognized the need to consult more broadly with indigenous groups before a meaningful comprehensive mandate can be developed.

Papers Submitted

For workshops I.3, I.4 and I.5.

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- AMEND, Thora and Stephan AMEND. Parques Nacionales y Poblaciones Locales en América del Sur.
- ANDERSON, Jeremy L. Case Studies of Conservation Agency: Tribal Neighbour Agreements in South Africa.
- ARCHIBOLD V., Guillermo. Proyecto para el Manejo de Areas Silvestres de Kuna Yala, Panamá.
- ASAVA, Wilfred W. Local Fishing Communities and Marine National Parks and Protected Areas in Kenya.
- BACHRUDDIN, Memet A., Alan IRVING and Kathy MACKINNON. Local Industry Support for Kulai National Park, Indonesia.
- BENITEZ, Liliyan. Algunas Consideraciones sobre las Relaciones entre las ONG Ambientalistas y las Organizaciones de Pobladores en la Ejecución de Proyectos de Conservación.
- BIGURUBE, G.N. Selous Game Reserve and Village Communities Around it.
- BOSHE, John I. Social and Population Dynamics of Masai versus Conservation in the Ngorongoro Conservation Area, Tanzania.
- BRANT ROCHA, Sergio. Parque Nacional de Monte Pascoal, Brasil: Población Indígena y Unidades de Conservación.
- BROWN, Jessica L. and Hector BRENES. A Strategy to Build Community Support for Tortuguero National Park, Costa Rica: Some Recommendations.

- BROWN Jr., Keith S. and George G. BROWN. Habitat Alternation and Species Loss in Brazilian Forests: Economic, Social, Biological and Geological Determinants.
- CAMPREDON, Pierre, Luc HOFFMAN and Hadya KANE. Why Natural Resources Conservation Requires the Development of Fishermen's Communities.
- CAMPREDON, Pierre. Cooperation of a National Park with its Indigenous Inhabitants: The Imraguen Fishermen in the Parc National du Banc d'Arguin, Mauritania.
- CARABALLO PERICHI, Ciro. La Herencia Cultural y su Vigencia Ambiental - Resumen.
- CASAS DUPUY, Pablo. Comunidades Humanas y Areas Protegidas Naturales en Colombia.
- CASAS GRANDE, Jesus. La Gestión del Parque Nacional de Doñana, Sevilla-Huelva, Andalucía.
- CASTILLO, Victor, Pablo SALCEDO and Dario BRACIO. Las Experiencias de Bioma con las Comunidades Locales en sus Reservas Biológicas.
- CASTROVIEJO BOLIVAR, Miguel. Planificando con el Público Areas Protegidas Insulares. Un Nuevo Método a Aplicar en el Reino de España.
- CRAVEN, Ian, M. PURBA, P. Djoko SETONO, D. WOMSIWOR and S. THAMRIN. Community Involvement in Protected Area Establishment and Management in Irian Jaya, Indonesia.
- CZERWENKA, Jürgen. El Desarrollo de los Territorios Indígenas de Bolivia como una Estrategia de Conservación.
- DE ASSIS, Neusa M. Marcondes Viana and Vera L. Ramos BONONI. Parques Municipales en la Provincia de San Pablo, Brazil.
- DE LACY, Terry. The Evolution of a truly Australian National Park.
- DEARDEN, Philip and Surachet CHITTAMART. National Parks and Hilltribes in Northern Thailand: Interaction and Management Strategies.
- DIAZ-MARTIN, Diego, Alfredo MORALES and Nestor WINDEVORHEL. Hacia el Manejo Comunitario de un Refugio de Fauna: El Caso Cuare.
- DOWER, Michael. Working with People Living in Protected Areas.
- DRIJVER, Carel. Participatory Rural Appraisal: A Challenge for People and Protected Areas.
- DURBIN, Joanna. The Role of Local People in the Successful Maintenance of Protected Areas in Madagascar: Two Case Studies, Andohahelo and Soalala.
- EATON, Peter. Indigenous People and Protected Areas: New Guinea and Borneo.
- FERREIRA, Clara, Iokine RODRIGUEZ and Christopher J. SHARPE. Parque Nacional Península de Paria: Necesidades Locales vs. Estrategias Globales como Reconciliar los Conflictos?
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- HARMON, David. Indicators of the World's Cultural Diversity.
- JOHNSON, Martha. The Dene Cultural Institute: Traditional Environmental Knowledge Pilot Project.

- KERR, A.J. Parks and Protected Areas: Turning Problems into Progress.
- KULA, Guy R. Strategies for Establishing Terrestrial, Marine and Estuarine Protected Areas in Papua New Guinea.
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- LEES, Annette. Lessons from the Pacific: Linking Traditional Ownership, Development Needs and Protected Areas.
- LIZARRALDE, Roberto. La Población Indígena en los Parques Nacionales.
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- MACDONALD, Ted. Working with Indigenous People in Latin America: Towards Social Equity in the Conservation of Fragile Lands and Protected Areas.
- MARIDUEÑA, Leonardo S. Proyecto para el Desarrollo Sostenible dentro de Parque Nacional Machalilla, Ecuador.
- MARTIN, Carlos A. and Roberto LIZARRALDE. Los Aborígenes en los Parques Nacionales de Venezuela - Su Pasado y Presente.
- MARTIN RODRIGUEZ, Candido. Conservación de la Naturaleza y Población Local.
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- METCALFE, Simon C. Communities, Parks and Regional Planning for African Savanna. A Co-Management Strategy based on the Zimbabwean Experience.
- MILLER, Gregory A. and Stuart D. STRAHL. An Innovative Conservation Partnership for Parks and People: A Model for Ecuador.
- MKANDA, Francis X. The Potential of Kasungu National Park in Malawi to Increase Income and Food Security in Neighboring Communities.
- MOKANDLA, Rex B. Wildlife Clubs and Community Involvement in Development of Protected Areas in Botswana.
- NIETSCHMANN, Bernard and Rony PONT. Indigenous Peoples and Protected Areas: Creating Latin American's largest Coastal Protected Area, "Miskito Kupia", Eastern Nicaragua.
- OVEDO CARRILLO, Gonzalo. Areas Protegidas y Comunidades Locales.
- PANWAR, Hemandra. Ecodevelopment: An Integrated Approach to Sustainable Development for People and Protected Areas in India.

- PARYSKI, Paul. The University of Florida Macaya Biosphere Reserve Project: A Case Study in Conserving Biodiversity through Sustainable Development.
- PONT, Rony and Julian SMITH. Reservas Marinas de los Cayos Miskitos: Una Area Protegida Indígena en la Zona Noroeste Nicaragüense.
- POSEY, Darrell Addison. Ethnobiology and Ethnodelvelopment - Importance of Traditional Peoples in Conservation and Development.
- RAJAN, Vithal. The Third Path: A Search for Grass-roots Alternatives.
- RAJAN, Vithal. Indian Farmers Opt for Ecological Benefits.
- RAUSSEO, Aristides J. Problemática y Caracter Socio-Económico y Cultural de la Serranía del Turimiquire, Venezuela.
- RAVAL, Shishir R. Cultural Perception of Landscape Quality: People's Participation and Resource Management Implications in the Gir National Park, India.
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- ROBERGE, Charles. L'Implication des Populations Locales dans la Gestion des Aires Protégées.
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- SANKHALA, Kailash. Bisnoi - The Prosperous Desert Man.
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- SEALE, Ronald. Aboriginal Societies, Adventure Tourism, and Conservation - The Case of Canada's Northwest Territories.
- SHARMA, Uday R. and William W. SHAW. Nepal's Royal Chitwan National Park and its Human Neighbors: A New Direction in Policy Thinking.
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- STEVENS, Stanley F. and Mingma N. SHERPA. Indigenous Peoples and Protected Area Management: New Approaches to Conservation in Highland Nepal.
- STUTZIN, Miguel and Hernan VERSCHURE. Urgent Action Needed: Support to the Indigenous Pehuenche People from Quinquen, Chile.

THAPAR, Valmik. An Effort by Ranthambhore Foundation to Work with the People Living around Ranthambhore National Park in Rajasthan, India, in order to Protect it.

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WARDYOY, Wahyudi, Sukianto LUSLI and Erwin A. PERBATAKUSUMA. Parks and People Interactions in the Kerinci Enclave.

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Workshop 1.6

Protected areas and demographic change: planning for the future

Chair: Riga Adiwoso Suprpto
Session Chairs: H.W.O. Okoth-Ogendo, Ayub Qutub, Pietronella van den Oever
Organizer: IUCN Social Sciences Division
Rapporteur: Frances Dennis

Overview

The **most rapid reductions** in mortality and **least rapid reductions** in fertility, and therefore the **most rapid population growth**, have occurred in countries which are overwhelmingly dependent upon their natural resources for their livelihood. The potential for conflict between human populations and natural resources increases during the **demographic transition**. At the same time, **modern technology** and **overconsumption** in industrial societies have **unprecedented impacts upon natural resources**. A major dilemma, then, becomes how natural resources can be protected while demand and impact increase, and how persons involved in the planning and management of protected areas can safeguard these areas against over-exploitation while contributing to the betterment of the lives of the people whose livelihoods depend on the resources contained in the protected areas.

This workshop was designed to:

- identify the extent to which demographic changes, including growth, distribution, movement and age-sex structure, pose present and potential threats to the creation and maintenance of protected areas.
- Explore the possibilities for creating and maintaining a sustainable balance between

human populations, wildlife and natural resources.

- Suggest how protected area managers can assess the demographic and social characteristics of the populations in and around their areas; and how they can **incorporate measures which take people fully into their planning and implementation processes**, and ensure that any extraction of natural resources from protected areas to meet needs and aspirations of local people do not exceed the productive capacity of the area.

The workshop was conducted in four sessions:

- Parks and Protected Areas: exclusion or integration of human populations?
- Protected areas, ecological and administrative boundaries and population growth and movement.
- Human Populations, and Policies and Strategies for Planning and Maintenance of Protected Areas: an integrated approach.
- An Action Plan: how can our network concretely address the biological and human aspects of parks and protected areas?

Discussion sessions were incorporated into each session. Visual material was presented in the form of a computer simulation, slides and overhead projections. Simultaneous interpretation facilitated contributions from all participants.

The workshop was attended by 30-50 people, representing the main fields of IUCN interests, grass roots managers of protected areas activities in several countries, field investigators and a range of expertise from the population community.

Conclusions

As demographic configurations have changed, protected areas must incorporate the demographic scenarios and population-driven activities within and surrounding them. The first session of the workshop addressed these questions, presenting cases as empirical evidence that people are living within many protected areas while other people are dependent on the resources within the protected areas for livelihood. The cases also indicated the complex nature of the relationship between population characteristics and the protected areas.

The following key conclusions arose from the workshop:

a. Many protected areas and their surroundings are inhabited by people whose livelihood depends on the resources in the protected areas. The present conditions signal future problems of increased population and aspirations for better life that may take place unless an integrated approach to management planning is followed in which the population trends and characteristics of the area are taken into account.

b. Degradation of the physical landscape conditions, resulting from population growth and movement, increasing consumption, or both, will ultimately threaten human welfare. Comprehensive planning which takes into account the pattern of livelihood and consumption, tenure system of the people in the area and interaction between the social and physical landscape where the protected area is located, is urgently needed to sustain the people and the protected areas.

c. Participation of people living within and surrounding the protected areas can only be successful if the management system takes into account their socio-cultural values and traditions.

d. Population trends and characteristics, not only of the people within the protected areas but also of those located nearby and using the common resources (such as the upstream and downstream areas of rivers), need to be incorporated in the management planning as they directly impact on the physical landscape and the availability of resources in the protected areas.

e. The technology now available for conserving nature does not adequately reflect the need for integration of human/nature perspectives in policy-making. The practice of exclusive zoning adopted in many countries may not be sustainable or capable of handling the pressures

exerted by human population movements and settlements in those zones. Some participants even questioned whether strict nature reserves (IUCN category I) are sustainable, especially where they exclude human populations from recognized food sources located within them.

f. The protection imperative remains crucial to the survival of humans as well as other species. The two are inextricably inter-twined, so a regulatory framework for human/nature interactions is required. Indeed, the studies on the Gulf of Maine and Kuril Islands indicated that the era of social Darwinism is clearly over. If, therefore, domestic legislation or administrative regimes are not able to provide that framework, international intervention may be necessary.

g. Indigenous knowledge, information and techniques are clearly more relevant to the design of nature protection policies, plans and programmes than are the exogenous concepts and ideas that often characterize existing activities. Nature protection programmes that ignore this factor are unlikely to succeed as shown by the case studies from Cote d'Ivoire, Tanzania and the Dominican Republic. People's participation in nature policy formulation and management decision-making is therefore the key to sustainable programmes. This is especially the case if account is taken of the people's own culture, tenure relations, institutions, and management regimes.

h. Successful nature protection programmes are usually those that are cost effective, not only for nature but also for the human populations which may have to forego some of the benefits they receive from areas designated for protection. Any compensatory schemes must therefore be designed on a 'no net loss principle' basis.

i. The impacts of rapid growth of poor populations on protected areas are intense, but they are local compared to the impacts of overconsumption by affluent populations.

j. Programmes and projects for protected areas and buffer zones which are made and operated with the participation of local people have a greater chance of lasting success. Asset distribution, particularly land tenure systems, plays a major role in helping or hindering people in sustaining ecosystems in and around protected areas. Insofar as equity in access to natural resources and participation in development also influence the desired family size, there may be advantage in integrating population and environment programmes. For example, this could entail involving resource sector extension agents in disseminating the goals of improved family health, sanitation and family planning.

k. International and national economic, social and sector policies strongly affect the viability of programmes and projects for protected areas.

Yet the impacts being multiple and complex, with second- and third-order consequences, are seldom holistically addressed. Improved analysis of population-environment inter-linkages could help devise more sensible policies.

l. In the post-industrial era, the existence and non-consumptive use of natural resources are likely to become more important to a stable and aging population. Policy-makers often have a narrow and limited vision of a region's long-term economic interests in natural resource exploitation and maintenance, so education of policy-makers in changing population composition and their consumptive preferences will be important.

m. IUCN should inform donor agencies and other key players of the relationships between demographic trends and the conservation of biological diversity in protected areas, initiate concrete field experiments which are carefully monitored as test cases, and communicate the findings of these experiments to the appropriate audiences.

n. IUCN should build up a network of people who can advise the international community, as well as governments and regional and local organizations, on possibilities to safeguard natural resources in protected areas while using the resources from the parks in a sustainable way.

Outputs and Follow-up Action

a. The IUCN Social Sciences Division will work with CNPPA to establish guidelines for protected area managers on the full integration of population-related variables into protected areas management.

b. Follow-up activities will be designed to build alliances and partnerships at global, regional and local levels with organizations whose mandate it is to address population and related socio-economic issues, for instance with the UN Population Fund, the International Planned Parenthood Federation (IPPF), NGOs, and universities. These agencies must be provided with the arguments on why the survival of nature depends on slowing the rate of growth of world population and keeping consumption within sustainable limits. Strategies for interdis-

ciplinary cooperation must be developed at grassroots level, policy level and international negotiation level. These strategies must include actions which address both demographic and socio-economic issues pertaining to sustainable use of natural resources.

Papers Submitted

ALPER, Joseph. Land Use Policy, Economics, and Maintenance of Protected Areas.

BIUTYAN, Ali Akbar. Human Activities and Protected Areas, with an Emphasis on Agro-Forestry Programme in Bangladesh.

HERNANDEZ, Carlos, Paula DEL CID, Juventino GALVEZ and Vinicio MORALES. Proyecto Demostrativo Nakum-Yaaxja-Naranjo: Manejo Integrado de Patrimonios Cultural y Natural y Desarrollo Sostenible, Petén, Guatemala.

IUCN - The World Conservation Union. Gender Roles, Parks and Protected Areas: Exploring the Issues.

LÖCKE, Oscar. Planificación de Parques y Areas Protegidas en un Programa Regional de la UICN.

MACHADO, Melany. La Participación de la Mujer en la Conservación del Parque Montecristo.

MALIK, Mumtaz. Indus River Ecosystem - A Case Study.

MUNGO'MBA, W.D. Protected Areas, Ecological and Administrative Boundaries and Population Growth and Movement in Zambia.

RAJAN, Vithus. Local Women's Initiatives to Environmental Regeneration.

SHEVEIKO, Sergey. The Kuril Isles: Human Populations and Natural Resources.

STROM, Kenneth J. The Shared Need for Flowing Water: People and Wildlife on Nebraska's Platte River, USA.

SUPRAPTO, Riga Adiwoyo and Pietronella van den Oever. Human Demography and Natural Resources: Trends and Influences on Parks and Protected Areas.

THOMAS, Patricia. The Gender Variable in Social Analysis for Conservation and Sustainable Development: Key to Understanding and Catalyst for Change.

VAZQUEZ, Rosa I. Use of Land and Natural Resources by the Tlaxiote Cabeceros of La Amistad Biosphere Reserve in Costa Rica.

WAAK, Patricia. Sharing the Earth: Case Studies on Population, Wildlife, and the Environment.



Workshop I.7

Education about protected areas

Chair: Chris Geesteranus
Vice chair: Frits Hesselink
Organizer: IUCN (Wendy Goldstein)
Rapporteur: Allan Fox

Overview

The workshop aims were to:

- Reach consensus on the priorities relating to environmental education.
- Formulate guidelines for the implementation of environmental education in protected areas.
- Establish principles for collecting materials for publications.

Workshop attendance averaged 80 people from 40 countries half of whom came from Central and South America. Participants were from NGOs, protected area authorities, universities, teachers colleges, botanic gardens, natural resources departments and environmental consultancies.

Two plenaries where speakers made short presentations followed by discussion in small working groups were used to highlight issues in formal education and the education of local communities. The workshop gathered information on successful strategies for working in these areas and suggestions for improvement. The final session was used to produce an action plan for the future based on individual consideration of:

- A diagnosis of how success was achieved and what is needed to be more successful.
- Local Programmes in Action: describing use of development resources and output resources.
- Local Participation: describing how an atmosphere where autonomy and self-esteem may flourish can be created and how trust and confidence in participation for the local community can be developed.
- Where to Next: how to evaluate, monitor, and use this information and plan for sustainability.

Workshop discussions also produced suggestions on how to develop support in the community through the actions of NGOs and local institutions.

Conclusions

Education is often considered a means to solve environmental problems. When "education" is mentioned, it is often thought of as the prerogative and responsibility of formal education institutions, ignoring the fact that about half the world's people are outside of this system. Clearly, non-formal environmental education for all the community is important and involves all organizations, not just ministries of education or institutes of formal education.

While environmental education is gaining acceptance in many parts of the world, there is wide disparity between countries in terms of official adoption of environmental education policies and practices. Formal education systems are hard to influence, being large centralized bureaucracies with an inertia to continue in the same traditional ways. Even when policies support environmental education, teaching expertise, confidence, commitment, programming flexibility and support materials are insufficient. Nonetheless, activity on this front must continue with NGOs playing a significant role by preparing materials for use in schools, training teachers and linking together to form credible organizations capable of influencing government policy on education.

The workshop emphasised that all have a responsibility to educate, both in the way in which our organizations operate and the programmes they provide as well as in the example of our personal lifestyle. Changing people's behaviour toward is slow and labour-intensive and a commitment of funding is needed to support staff and to operate these programmes.

Education about protected areas was seen in the broad context of environmental education as defined in the nine principles of "Caring for the Earth". An essential part of developing support for protected areas is to implement environmental education for all the community, based on these principles. Environmental education is more than the study of ecosystems, more than developing understanding of the social, economic and cultural influences that affect how

these ecosystems are used and managed. It is also about understanding human dependence and impact upon the earth's resources and on the lives of others; and in developing an environmental ethic and the skills to enable people to participate in informed environmental decision making and management.

Protected areas provide valuable outdoor learning experience: as places where an ethic for nature conservation can be fostered; as sites where the benefits of nature for humans can be experienced and studied; and as models of environmental management against which human impact on other systems can be compared. Indigenous cultures, their knowledge and lifestyles, provide a rich resource for education, particularly in developing an understanding of the concepts of sustainable living.

A major problem to counteract is the threat to sustainable use of resources by the strong promotion of consumerism in society. The use of cultural heroes to promote environmental issues and lifestyles in the media was discussed as an effective way to begin to address consumerism. The conservation movement needs to unite to implement media strategies that promote participation in the environment and to utilise the same marketing strategies used by the commercial world.

The essential role of environmental education should be recognized and further strengthened through development of appropriate organizational infrastructure. Specifically:

- Governments, especially at the national level, should initiate, develop and implement policies on environmental education as follows by training teachers in environmental education; funding support for initiatives to assist NGOs to develop their environmental education programmes; and giving special attention to the environmental education of local communities and communities within protected areas.
- All governments, conservation organizations and development agencies should set a target of 10 percent of available budget for environmental education.
- Governments, protected area agencies, educational institutions and NGOs should work together to plan and implement education programmes for protected areas, thereby improving their effectiveness and efficiency.
- Protected area agencies should accept their responsibility to educate the community both inside and outside protected areas with the commitment of funds and staff to raise public awareness of the benefit and values of protected areas in enhancing the quality of life of city as well as rural dwellers. These agencies should combine measures to promote visitor enjoyment with education and information about the values of protected areas and their role in demon-

strating the interrelationships between people and resources, so as to build public understanding and support for conservation and, specifically, for protected areas.

To support the adoption and implementation of environmental education throughout the world and particularly in view of the support that will be given to environmental education at UNCED, the workshop recommended that:

- IUCN should facilitate the interchange of education materials on environmental education between people and organizations by developing a network for this purpose and by organizing small workshops in countries or within regions.
- IUCN should support NGOs and strengthen their capacity to educate the community and prepare materials for environmental education.
- IUCN should support environmental education in the regions, both by encouraging the work of the Commission on Education with funds, and by the appointment of a regional Environmental Education Coordinator. Regional education staff should be appointed to South American regional and country offices to provide a catalyst for environmental education.
- IUCN should support the coordination of environmental education programmes between international agencies and influence governments to continuously review their activities.
- IUCN should support the development of training programmes for the World Bank and the IMF so as to increase the understanding of sustainable development among Bank staff and to stress the importance of including environmental education programmes and environmental impact assessments in association with all projects.

Outputs and Follow-up Action

The Commission on Education and Communication (CEC) and IUCN will establish working groups to support the planning and implementation of the following outputs:

- Material presented at the workshop will form the basis for a publication entitled, "Environmental Education for Nature" for use by schools, teachers and protected area managers.
- A publication targeted to government and non-government organizations titled "National Environmental Education Strategies". Contents would describe setting up the process of public participation for preparing an environmental education strategy and provide examples of national strategies in various phases of development from around the world.
- A publication for protected area managers on education/interpretation planning and

programme implementation for key target groups. This will include material from workshop IV.9 on interpretation in protected areas as well as material from workshops on conflict resolution, people and protected areas, and tourism.

- The development of training programmes to advance all educational activity in association with protected areas. Funding proposals for these workshops will be prepared and key people to hold the training programme identified.

Papers Submitted

- DIÁZ, Felix E. Las Artes del Fénix - Una Herramienta para Educar y Concientizar. (El Septum del Fénix).
 HULYER, Doug and Jane CLARICOATES. Achieving Formal Education, Public Awareness and Action about Wetlands through the Use of Wetland Learning Centres, National Curricula, and Public Education and Awareness Programmes.
 HUNTER, Wilson. Interpreting Sacred Resources.
 JENKINS, Catherine. De l'Education a la Nature au Tourisme de Nature.
 LEAL FILHO, Walter D. S. An Analysis of Education in and about Protected Areas in the Brazilian National Curriculum.



Workshop I.8

Building the capacity of NGOs to contribute to protected areas

Chair: Maria Teresa Jorge-Padua
 Co-Chair: Ibsen Gusmao Camara and Carlos F. Ponce
 Organizer: IUCN (Héctor Ceballos-Lascuráin)
 Rapporteur: Karen Fletcher

Overview

The aim of the workshop was to discuss ways of strengthening the capacity of NGOs to support protected areas. 30 people attended, but only half stayed to the end. Participants made individual presentations of about 10 minutes each, followed by a final discussion at the end of the second session.

Conclusions

To enhance the capability of NGOs to effectively contribute to protected areas, it is necessary that they have more legal and financial support

LOCASCIULLI, Osvaldo and Vittoria ROSSETTI. Education as a means for Supporting the Establishment of the Aspromonte National Park in southern Italy.

MARTY, Rebecca. Developing and Implementing a School-Curriculum-Based Environmental Education Program about Parks and Protected Areas with almost No Funding.

NOMDEDEU MORENO, Xaro. Espacios Naturales Protegidos: Un Enfoque Constructivista de la Educación Ambiental.

PENAFIEL, Samuel and Maritess B. VISTE. Building Public Support for Protected Areas.

RAJAFETRA, Veloson A. Programme Malgache d'Education en Matière d'Aires Protégées dans les Ecoles.

ROMERO DIAS, Aldemaro and Ana MAYAYO. Conocimiento del Venezolano sobre el Ambiente y Areas Protegidas.

ROMERO, Carlos E. Manual de Educación Ambiental para la Región Andino Patagónica.

SAGI, Yoav. SPNI Field Study Centers integration of Nature Study, Conservation and Research.

TOCH, Susan L. Integrating Resource and Community Issues: An Implementation Strategy for Protected Areas.

VAN BOHEMEN, Ilein. Conservation Education and Southern Ocean/Subantarctic Islands; Principles Guidelines and Actions.

at all levels national and international, and that they improve their interactions and the flow of information between themselves, particularly by regions.

The workshop recommended that:

- National governments should support and work more closely with NGOs to better manage the national parks and protected areas, using the flexibility of the NGOs to achieve that important goal.
- NGOs should enhance their technical capacities by improving the flow of information between them and the scientific community.

c. An organization, such as IUCN, should guide NGOs in identifying legal mechanisms by which they can influence decision-makers.

d. IUCN should create a registry of NGOs which support protected areas, to encourage cooperative networking efforts between NGOs.

e. IUCN should promote regional meetings for NGOs to determine specific plans of action, and to evaluate results (the regions being defined biogeographically).

f. IUCN should encourage northern NGOs to allocate more funds to southern NGOs to help the latter develop their institutions and programmes so as to achieve self-sufficiency.

g. IUCN should recommend mechanisms by which NGOs which are not already part of local communities can develop their participation with those communities.

Outputs and Follow-up Action

a. It was apparent from this workshop that very considerable work is required to build the capacity of NGOs, especially in developing countries, to support protected area activities. IUCN, in particular, should be providing greater support, particularly in the form of technical advice, to its NGO members.

b. An important output is to develop support for the network and to seek funds for training programmes for NGOs in areas where training is requested. A practical publication on "NGOs for Nature," describing the organization, administration, financial management and education activities of an NGO would be useful, but would require a major new initiative by IUCN.

Papers Submitted

CASTILLO MALDONADO, Angeles, Jesus MOLINA VASQUEZ and Francisco J. ORTIZ BOTELLA. Organizaciones no Gubernamentales (ONG) y Cooperación para el Medio Ambiente.

IVANOV-SMOLENSKI, Andrei and S. ZABELIN. The Role of NGO's to Contribute to Protected Areas in Russia.

JORGE PADUA, Maria Teresa. Overview paper on NGOs and Development Agencies.

LIM, Weng Hee. The Role of the Malayan Nature Society in the Establishment of two Nature Parks in Peninsular Malaysia.

METCALFE, Simon C. An Analysis of the Policy of Wildlife Management in Zimbabwe's Communal Lands.

MILANO, Miguel S. and Maria de L. NÚÑES. Acción Empresarial en la Conservación en el Brasil: Un Año de Actividades de la Fundación o Boticario de Protección de la Naturaleza.

MURSIDIN and Sudrajat WIRIADINATA. The Role and Participation of NGOs in Supporting Conservation Programmes.

NAVARRO Q, Juan Carlos. El Papel del Sector Privado y las ONGs en la Protección y Manejo de Parques Nacionales y Areas Silvestres Protegidas.

NORRIS, Ruth and Laura CAMPOBASSO. Parks and the Private Sector: Building NGO Relationships.

PRAMONO, A. Hadi. The Role of NGOs in Ecotourism and Protected Areas.

RAINES, Peter S., Jonathan M. RIDLEY and Denise McCORRY. The Role of Coral Cay Conservation in Marine Resource Management in Belize.

SMOLENSKY, A.I. The Role of NGO's to Contribute to Protected Areas Russia.

SNELSON, Deborah. Protected Areas: Neighbour as Partners - The African Wildlife Foundation's Community Conservation Programme.

STUTZIN S., Miguel. Contribución de las ONG al Establecimiento, Fortalecimiento y Defensa de las Areas Silvestres Protegidas.

TAMURA, Kunio. Management of National Parks in Japan: The Issues and Countermeasures in the Future.

WAYBURN, Edgar. The Role of Non-Governmental Conservation Organization in Protected Areas.

WHITNEY, Steven. Advocacy Planning for Yosemite: Non-governmental Initiative to Resolve Conflict and Stimulate Governmental Action on Alternative Transit.



Workshop I.9

Resolving conflicts about protected areas

Chair:
Organizer:
Rapporteur:

Connie Lewis
Keystone Centre and IUCN (Jeff McNeely)
Kevin McNamee

Overview

The aims of the workshop were to:

- Familiarize participants with the basic concepts of conflict resolution.
- Exchange information and ideas about what does and does not work.
- Identify principles and model approaches.
- Develop an outline and work plan for a conflict resolution handbook.
- Provide opportunities to network.
- Have FUN.
- And provide opportunities to brainstorm approaches to particular conflicts.

Approximately 60 people attended the workshop. They included academics, conflict resolution professionals and representatives of government and of conservation groups.

The workshop consisted of participatory activities, panels, a plenary discussion, small group discussions and working groups. The three panel topics were:

- Assessing and understanding conflicts.
- Designing a conflict management approach.
- Anticipating, avoiding and managing conflicts over the long term.

Each panel was comprised of 6-8 authors of papers. Panellists were limited to presentations of only five minutes each, with the remaining time devoted to questions and discussion. The small group discussions focused on key issues and principles raised by the panels. The results of the small group discussions were later reported to the full group. The work groups focused on the drafted recommendations and made plans for the handbook.

Conclusions

Conflict is not necessarily a bad thing; it sometimes provides an opportunity to draw a range of parties together to resolve an issue, share information and come to understand each other's hopes and aspirations.

Compromises produced by conflict resolution may be better for the environment than forced

decisions that nobody respects. It is critical in conflict resolution to get the aggrieved and interested parties together in a consultative process, and to try to get them talking to each other so that they learn to appreciate each others' perspectives.

A thorough assessment of the conflict is a necessary precursor to designing an effective conflict management approach. The assessment should include an evaluation of who the stakeholders are, the historical context, and other relevant scientific, socio-political and economic issues.

Outputs and Follow-up Action

a. A compendium of the papers that were written for the workshop will be published.

b. A handbook on conflict management for park managers and others interested in resolving and managing park conflicts will be prepared. A committee chaired by Connie Lewis from the Keystone Centre met later during the Congress and developed a specific proposal for the handbook, including a detailed work plan and budget. (The members of the Committee were Sandra Fowkes, Andres Rojas, Hilda Aravjo, Ashaq Ahmad and Craig MacFarland). The proposal was reviewed by other interested participants in the workshop before it was finalized. A list of potential contributors and reviewers has been collected and those people will be contacted for their assistance once the project has started. The workshop focused considerable attention on the purpose of the handbook and what should be included (principles, models and case studies), and who the audience might be. All of that input will be reviewed by the authors and incorporated into the book.

Papers Submitted

AHMAD, Ashiq. The Feasibility of Different Management Options to Resolve the Problems of Khunjerab National Park (Northern Areas), Pakistan.

BERKMULLER, Klaus. Problem Analysis as a Prerequisite to Solving Conflict between Local People and Protected Areas.

BONIFAZ, Neptali. Los Conflictos Políticos y las Áreas Protegidas, República del Ecuador.

CALDECOTT, Julian O. Designing Protected Areas Projects to Reduce Conflicts with Local People.

CASTELLANO, E. Hercilio. The Survival of Baris and Yuspas - A Participatory Project.

CRAVEN, Ian, Wahduji WARDOJO and B. KANIT. Conflicts between Integrating Traditional Peoples into Protected Areas Management Systems and Park Zoning. Case Examples from Irian Jaya, Indonesia.

DRIJVER, Carel. Participatory Rural Appraisal: A Challenge for People and Protected Areas.

ENRIQUEZ, Marco Tulio. Las Áreas Protegidas y las Comunidades Nativas: El Caso del Parque Nacional Yasuni y el Pueblo Huacoraní en el Ecuador.

FRANCIS, Kahembwe. Sustainable Development and Forest Conservation: A Case Study on the Mt. Elgon Forest Reserve, Eastern Uganda.

KRUMPE, Ed E. and Lynn MCCOY. Techniques to Resolve Conflict in Natural Resource Management in Parks and Protected Areas.

LEBONETSE, Goitseone. Resolving Conflicts about Protected Areas: The Case of Botswana.

LEWIS, Connie. Parks and People in Conflict: A Framework for Analysis and Action.

LOTSCH, Bernd. The Battle over the Danube Wetlands - Austria's "Mini-Amazon".

McNAMEE, Kevin. Wood Buffalo National Park: Threats and Possible Solutions for a World Heritage Site.

NJIFORTI, H. and M. TCHAMBA. Human-Park Conflict: the Case of the Benoue, Faro and Bouban-Njida National Parks of North Cameroon.

PENAFIEL, Samuel. Case Studies on Resolving Conflicts Between Protected Area Conservation and Resource Utilization.

ROBINSON, G.A. The Richtersveld Saga.

RODRIGUEZ, Francisco M. La Resolución de Conflictos en las Áreas Protegidas.

ROLLEY, Evan R. and Michael J. BROWN. Forest Allocation and Conservation in Tasmania can both win?

ROWNTREE, Matthew. Parks and Local Communities: Some Guidelines for Integration - A Student's Perspective.

SNEED, Paul G. Conservation and Cooperation: Reconceptualizing Cooperative Management for the Preservation of Biological Diversity.

SPONSEL, Leslie E. The Environmental History of Amazonia: Natural and Human Disturbances and the Ecological Transition.

SPONSEL, Leslie E. and Rebecca HOLMES. History, Conservation, and Human Rights: The Case of the Yanomami in the Amazon of Brazil and Venezuela.

STOIBER, Hans H. Problems with the Establishment of National Parks in the Austrian (Central-) Alps.

WEST, Len. Protected Areas Management and Human-Related Conflicts in Latin America.



Workshop I.10

Protected areas, war and civil strife

Chair: Wil Verwey
Organizer: IUCN (Jeff McNeely)
Rapporteur: Wil Verwey

Overview

The aim of the workshop was to examine major issues on protected areas, war, and civil strife; and to recommend ways to improve the relationship between the military and protected area managers. The following issues were addressed in a workshop format, with about 25 people from all parts of the world in attendance:

- Positive and negative impacts of military activities on protected areas in times of peace.
- Negative impacts of military activities on protected areas in times of armed conflict, both international and internal.

- Rules of international law conducive to environmental protection in times of armed conflict.
- Environmental impact of narcotics production and trafficking around protected areas.

Conclusions

The workshop catalogued the following major negative impacts of military activities on protected areas in times of peace:

- Allocation of scarce natural resources for military purposes.
- Disruption of protected areas due to military activities such as training exercises,

weapons testing, waste disposal and other polluting activities.

- Construction of military facilities within or too close to protected areas.
- Illegal logging and harvesting of other forest products, poaching and illegal fishing (including dynamite fishing and other destructive fishing techniques) by poorly supported units of regular armed forces or insurgent forces in protected areas;

Examples were given of each of these impacts. These were balanced by potentially positive impacts, which were seen to include:

- Assistance in the prevention of poaching and other activities harming the environment in protected areas.
- Assistance in eradicating exotic species within protected areas.
- Cooperation with relevant institutions and promotion of environmental awareness among local communities.
- Environmental support such as re-forestation and erosion control.
- Assistance in environmentally relevant scientific research and monitoring.
- Habitat maintenance or restoration in military areas.
- Availability of demilitarized zones as "wild-life corridors".

The workshop considered ways to convert these potential benefits into real ones, especially through improved awareness of military leaders and greater public support for such efforts.

The workshop then turned to a matter that was given particular poignancy following the burning of Kuwait's oil fields during the 1991 war: the very significant negative impacts of military activities during times of armed conflict, both international and internal. These impacts, which were illustrated by recent examples from various parts of the world, include:

- Employment of means and methods of armed conflict directed against the environment as an object.
- Employment of technologies to manipulate the environment for hostile purposes.
- Collateral environmental impact of certain weapons, such as nuclear, chemical and biological, incendiary, and blast effect weapons.
- Military activities not justified by reference to military necessity, aimed at harming the adversary's economy and potential for post-war recovery (such as setting oil wells on fire).
- Increased depletion of scarce natural resources.

- Terrestrial, atmospheric, aquatic, and marine pollution in the course of fighting.
- Flora and fauna destroyed in the course of fighting.
- Economic consequences with a severe environmental impact of armed conflict in terms of, e.g., collapse of tourism as an important foreign exchange earner.
- Increased availability of sophisticated weaponry for unauthorized use, both during and after armed conflict.

The workshop concluded that improved international agreements are required to promote environmental protection — including to protected areas — in times of armed conflict. Such agreements should include the following elements:

- The international community of states should unconditionally re-confirm its recognition of the environment itself as an object of legal protection in times of armed conflict, both international and internal.
- Improved legal protection of the environment during armed conflict.
- Recognition that the accepted limits to the right of belligerent to choose means and methods of armed conflict must be interpreted to include the protection of the environment for present and future generations.

The workshop participants generally supported the recommendations submitted by the IUCN Commission on Environmental Law (Munich Consultation, Dec. 1991).

The workshop addressed a very specific example of a security-related topic which is of great concern in several parts of the world: the environmental impact of the production of narcotic substances, especially cocaine, opium, and marijuana, in and around protected areas. It is widely recognized that the production and consumption of drugs is one of the most serious problems facing humanity today. Furthermore, both the production of narcotics and current measures to eradicate these crops both have severe negative impacts on the environment in and around protected areas.

While policies of consumer countries, which create part of the drugs problem, are beyond the control of producer countries, considerable improvements are still possible. For example, economic incentives could be provided to local communities to produce legal crops.

On the basis of discussions held during the workshop, it was recommended that IUCN support studies on:

- a. The role of military establishments in environmental protection and re-generation.

- b. The relationship between narcotics production, consumption, and traffic, and the consequences of these practices for the environment, with emphasis on protected areas.
- c. The interaction between armed conflict and the environment.
- d. Identifying means of strengthening the current international legal system concerning environmental protection during times of armed conflict, both international and internal.

It was further recommended that:

- a. IUCN should urge governments that are not already parties to relevant international legal instruments to ratify these instruments.
- b. IUCN should approach governments with a proposal to convene diplomatic conferences, at both regional and global levels, for the purpose of reinforcing supplementing legal regimes for environmental protection in times of armed conflict, both international and internal.
- c. Governments should:
 - Distribute information on protected areas, with (initial) emphasis on World Heritage sites, to their military forces.
 - Revise military manuals and instructional programmes so as to include environmental protection measures.
 - Approach the United Nations with a proposal to establish a mechanism for coordinating rapid international response to environmental emergencies arising from armed conflict.
 - Make maximum use of the large pool of trained servicemen, both serving and retired, that, as experience has shown, can be readily mobilized to help protect and regenerate the environment.

Outputs and Follow-up Action

- a. This workshop will lead to an IUCN policy paper on the military and protected areas which will seek to build support among the army, navy, and air forces for environmental issues. IUCN should also promote an international fund to restore protected areas damaged by armed conflicts.
- b. IUCN should convene a task force to develop its policy on narcotic problems in protected areas, including appropriate attention to the environmental impact of measures to control such crops.

Papers Submitted

- ALSDIRAWI, Fozia. The Negative Impact of the Iraqi Invasion on Kuwait's Protected Areas.
- D'HUART, J.P. Armed Conflict and Protected Areas in Central Africa.
- GEBRE-MICHAEL, Tadesse, Tesfaye IIUNDESSA and Jesse C. HILLMAN. The Effect of War on Wildlife Conservation Areas in Ethiopia.
- GUARDIA NACIONAL DE VENEZUELA. La Guardia Nacional de Venezuela Presente en los Parques Nacionales y Areas Protegidas y en la Defensa de la Calidad de Vida del Venezolano.
- McGAHEY, Stan. Conversion of the Korean Demilitarized Zone (DMZ) into a Peace Park.
- PIDO, Michael D. Exploratory Notes on the Role of the Military and Police Forces in Protected Area Management with Emphasis on some Coastal Parks in the Philippines.
- STEVENS, Richard L. Nature, Man and War.
- VERWEY, Wil. The Real World is not Always Peaceful: Building Protected Areas to Withstand Civil Strife.
- WESTING, Arthur H. Protected Natural Areas and the Military.



Workshop I.11

International legal instruments in protected area management

Chair: Daniel Navid
 Organizer: IUCN Commission on Environmental Law/ Ramsar Bureau
 Rapporteur: Tim Jones

Overview

The aim of the workshop was to produce recommendations on international cooperation on protected areas through international legal instruments.

30 people attended the workshop, including participants from Argentina, Australia, Bahamas, Canada, Ecuador, Finland, France, Germany, Italy, Jamaica, Pakistan, Philippines, Russia, Switzerland, UK, USA, US Virgin Islands and Venezuela. Many of the participants were legal experts, although other backgrounds and interests were also represented.

The workshop was divided into three parts, each covering the topics outlined below in 1-3. Each of the three sessions included the presentation of a number of short background papers and case studies, followed by open debate of the issues raised. After the workshop, a sub-group reviewed the conclusions, amended the drafts of Congress Recommendations 3 and 4, and prepared material for the Caracas Action Plan.

Conclusions

1. Existing treaties relevant to protected areas

Treaties require supportive machinery if they are to be implemented effectively, in particular:

- A sound financial base
- Regular meetings of the Parties
- A secretariat.

Parties to international treaties do not always have the national administrative structures or legislation required for meeting their international responsibilities. NGOs have a key role to play in assisting Parties to implement international treaties and in promoting greater public awareness of the treaties.

Closer cooperation is also needed between existing treaties.

The significant gaps in the geographical coverage and subject matter of existing treaties need to be filled by new treaties.

2. Antarctica and areas outside national jurisdiction

The Protocol on Environmental Protection adopted by Parties to the Antarctic Treaty should be ratified as soon as possible. Once the Protocol has been ratified, the whole of Antarctica will be a protected area. The Parties should undertake to observe the Protocol on a voluntary basis until ratification.

The Parties to the Antarctic Treaty should agree on an Annex to the Environmental Protection Protocol on liability for damage arising from activities in the Treaty area.

Steps should be taken to ensure that the Convention on the Conservation of Antarctic Marine Living Resources (CCAMLR) is implemented effectively.

Protective regimes should be established under the International Maritime Organization's regime for the regulation of shipping in environmentally sensitive areas.

3. Proposed treaties

The workshop expressed the fullest possible support for the steps being taken to establish new global environmental treaties. However, it was decided that it would not be appropriate to make detailed observations concerning the Biodiversity Convention, in view of current negotiations in Kenya. A report on these negotiations was presented to workshop III.6, on legal strategies.

4. Action for IUCN

The workshop recommended that IUCN should:

- a. Continue monitoring progress on the development of the Biodiversity Convention and, when adopted, promote its rapid implementation.
- b. Continue promoting the implementation of the newly-adopted instrument for Antarctica.
- c. Give priority in its Law Programme to the legal aspects of the implementation of existing treaties such as the Ramsar and World Heritage conventions.

d. Support progress and new development in international conservation law, in particular by continuing its efforts towards the elaboration of a blueprint for a Global Covenant on environmental conservation.

Outputs and Follow-up Action

An immediate output of the workshop will be its proceedings, to be issued jointly with those of workshop III. 6 on national legal strategies.

Papers Submitted

ANDREN, Lei. The Designation of Special Areas and Particularly Sensitive Areas under IMO's Regulatory Regime for Shipping.

CASTANO URIBE, Carlos. La Red Latinoamericana de Cooperación Técnica en Parques Nacionales, otras Areas Protegidas, Flora y Fauna Silvestre y su Apoyo a la Gestión de Unidades de Conservación de la Cuenca Amazónica.

DE KLEMM, Cyrille. Area-Based Conservation and the Law.

DIAZ, Ernesto and Carmen VELASQUEZ. Cooperación Internacional y Areas Protegidas: Las Areas Naturales Protegidas en la Gestión de las Areas Costeras Venezolanas.

ENEMARK, Jens A. The Trilateral Dutch, German and Danish Cooperation on the Protection of the Wadden Sea.

LLEWELLYN, Othman A. Conservation in Islamic Law.

NAVID, Dan. International Legal Instruments in Protected Area Management.

PHILLIPS, Cassandra. Antarctica - The Supreme Example of International Cooperation.



Workshop I.12

The role of tourism in expanding support for protected areas

Chair: Megan Epler Wood (The Ecotourism Society)
Co-Chair: Augusto Huéscar (WTO)
Organizer: IUCN (Héctor Ceballos-Lascuráin)
Rapporteurs: Karin Fletcher, Carla Garrison

Overview

The workshop was designed to discuss how tourism can bring greater support to protected areas around the world. However, the emphasis of most of the papers was on the proper use of tourism as a conservation tool. The workshop was based on seven panel discussions:

- Case studies in launching ecotourism programmes in protected areas
- Community involvement and benefits
- Education, training and interpretation
- Economic and government policy
- Private sector role
- Model projects
- Summary papers

Many of the presentations and discussions dealt with planning and management strategies for tourism activities, especially in the broader context of national and regional issues. The need for active and balanced inter-sectoral involvement was stressed, in which park managers, conservationists, tourism operators, local

communities, planners, NGOs, development agencies, and the tourists themselves may all participate in decision-taking and in the potential benefits offered by tourism.

The dangers and risks of mass tourism related to protected areas was one of the chief concerns of the workshop, which stressed the need for adequate balance between visitor enjoyment and conservation needs.

The workshop was attended by about 150 people. Representation was broad, with about 40 percent from Latin America, 35 percent from North America, 10 percent from Africa, 5 percent from Asia, and 10 percent from Australia and Pacific.

Conclusions

Under proper management, tourism could potentially contribute to the conservation of a site. Ecotourism was suggested as the appropriate term to describe this preferred type of tourism in protected areas, and was defined as "responsible travel to natural areas that sustains the

well-being of local people and conserves the environment". It was also recognized that the term has been and will inevitably be abused. The vital importance of evolving a new value system for the nature-based travel industry which is guided by conservation principles was emphasized. A few of the dangers of tourism identified were: inadequate local benefits; lack of management and planning leading to resource damage; insufficient funds being channelled into protection of the resource; little availability of training for local guides and managers; lack of international institutional support when compared to other assistance programmes; and lack of standardized, widely-applied evaluation procedures. On the other hand, the potential benefits that tourism can produce, if handled correctly, were also reviewed: contributing to conservation goals; stimulating employment and socioeconomic development; and promoting training, research and education in environmental matters.

Workshop results did not fully endorse the IUCN proposal to launch model projects as a first step towards further quantifying ecotourism's role as a conservation tool, but rather indicated that more site-specific research must be carried out in order to draw a clear diagnosis, before embarking upon demonstration projects.

Resources should be allocated to investigate existing ecotourism projects in different parts of the world, from the economic, social and ecological viewpoints. In particular, economic benefits to local people must be quantified; recent studies indicate these benefits can be under 10 percent of tourism earnings. Long-term environmental impact studies of tourism activities are also urgently needed.

Policy initiatives will be critical and funds from tourism should be earmarked for use in protected area management. Where appropriate, high-level policy delegations by IUCN and other global agencies could help convince government decision-makers to make protected area budgeting independent of the central treasury, for example by establishing parastatal (quasi-governmental) agencies that direct funds from tourism and tourism concessions to protected area management. Other self-financing mechanisms that may be provided by tourism should be explored and encouraged by park managers.

The workshop recommended that:

- IUCN should work to strengthen linkages between tourism authorities, operators, and institutions (including the World Tourism Organization) and natural resource agencies to further tourism planning, and direct funds to education and training programmes for guides and local tourism concession management. Local workshops on the development of visitor man-

agement plans should be held regionally and made accessible to local protected area managers.

b. IUCN should continue to develop, with the collaboration of other parties, a systematic methodology for the design and implementation of appropriate tourism projects in protected areas at both national and regional levels. This methodology should serve as a useful instrument for park authorities, conservation agencies and local communities, as well as institutions and enterprises linked with the tourism industry.

c. In coordination with local parties, IUCN should participate in long-term monitoring and assessment of specific tourism projects related to protected areas, and widely publishing the results.

d. Since natural and cultural heritage features frequently occur together in protected areas, IUCN should collaborate with the appropriate institutions in preparing guidelines for appropriate tourism addressing both natural and cultural heritage, particularly in World Heritage sites.

e. IUCN should participate in the establishment and promote the implementation of a code of ethics for all tourism activities, including tourism related to protected areas, so that minimal impact (both environmental and cultural) may be facilitated.

Outputs and Follow-up Action

A book, published by IUCN, on Ecotourism as a Tool for Conservation and Sustainable Development should result from editing the valuable material that emerged from workshops I.12, IV.7, and a relevant portion of I.2. The production of this book might require additional material drawn from other sources and experiences.

Paper Presented

AGUILERA ORIHUEL, Lorenzo. Los Parques y el Turismo.

AVELING, Rosalind and Roger WILSON. Tourism in the Habitat of the Great Apes - Costs and Benefits.

BLANGY, Sylvie and Megan EPLER WOOD. Developing and Implementing Ecotourism Guidelines for Wild Lands and Neighboring Communities.

BOO, Liz. Ecotourism Diagnostic and Planning Guidelines for Protected Areas Managers.

BUTLER, James R. Ecotourism: Its Changing face and Evolving Philosophy.

BUTLER, James R., Glen T. HVENEGAARD and Doug K. KRYSTOFIAK. Economic Values of Bird Watching at Point Pelee National Park, Canada.

- BUTLER, James R. and Elaine BUTLER. Fostering the Spiritual and Affective (Emotional) Values of Protected Areas.
- BUTLER, James R. and Gregory D. FENTON. Bird Watchers of Point Pelee National Park, Canada: Their Characteristics and Activities, with Special Consideration to their Social and Resource Impacts.
- CEBALLOS-LASCURAIN, Héctor. Tourism, Ecotourism and Protected Areas.
- CORTES G.L., Maite. Ecoturismo: Una Opción para el Corredor Turístico Costalegre?
- DENMAN, Richard. Fostering Ecotourism Enterprises in Local Communities.
- EAGLES, Paul, Jennifer L. BALLANTINE and David A. FENNELL. Marketing to the Ecotourist: Case Studies from Kenya and Costa Rica.
- EPLER WOOD, Megan. The Role of Tourism in Expanding Support for Protected Areas.
- FOWKES, John and Sandra FOWKES. Appropriate Roles for the Private Sector in Ecotourism Development in Protected Areas in Less Developed Countries.
- GAKAIIU, C.G. Visitor Dispersal Strategies in Ecotourism Management.
- GIANNACCINI, Joan. Parks and Tourists, an Evolving Partnership.
- HAWKINS, Donald E. Ecotourism: Making the Most of the Caribbean's Most Precious Asset.
- HEALY, Robert G. Property Rights and Tourism Resources: Tourism Resources as Common Pools and Common Property.
- HEALY, Robert G. The Role of Tourism in Sustainable Development.
- HEATH, Robin. Wildlife Based Tourism in a Developing Country: The Economic Implications.
- HEATH, Robin. The Growth in Wildlife Based Tourism in Zimbabwe.
- ITUESCAR, Augusto. The Role of WTO in the Ecotourism Development in the World.
- KLEINSCHMIDT, Rudolf and David E. LAOW. Tourism's Role in Creating and Sustaining Protected Areas.
- KUSAKABE, Kotaro. National Vacation Village System in Japan.

- LAURENT, Alain. Les Aires Protégées: Outil de Politique Environnementale et Approche nouvelle pour la République de Djibouti.
- LAWRENCE, Kathryn. Sustainable Tourism Development.
- LINGHAM, Datuk W. Tourism, Ecotourism and Protected Areas.
- MACHLIS, Gary and Maria E. BACCI. Is Ecotourism Ideologically-Biased, Elitist, Short-Sighted, Anti-Democratic and Unsustainable?
- RAZQUIN DE BAYA, Maria E. Argentine Republic: The Three Big Lake Area - Province of Santa Cruz - Protected Natural Areas, Interdisciplinary Planification and Community Participation as Different Ways of Supporting Development of Favorable Areas for the Ecotourism.
- RICHEZ, Gérard. Le Tourisme dans les Parcs Nationaux en Europe.
- SHORES, John N. The Challenge of Ecotourism: A Call for Higher Standards.
- SWANSON, Marilyn A. Ecotourism: Embracing the new Environmental Paradigm.
- TORREJON, Antonio. Las Areas Naturales y el Turismo en la Patagonia Argentina.
- URBANEK, Tomas. Ecoturismo en el Parque Nacional Natural Tayrona, Colombia.
- VILLA, Antonio. El Ecoturismo como un Modelo Alternativo para la Protección de la Naturaleza en los Parques Nacionales Naturales, Venezuela.
- WALLACE, George N. Real Ecotourism: Assisting Protected Area Managers and getting benefits to Local People.
- WHINNEY, Christophe and Eliane REGGIORI. Tourism: An Alternative Way Forward.
- WOO, Bo-Myeong and Seong-II KIM. Status and Prospects of Recreation Area Protection in the Nature Park in Korea.
- YOSHIDA, Masahito. Japan's Experience in Ecotourism.
- YOUNG, Marguerite. People and Parks - Factors for the Success of Community Based Ecotourism in the Conservation of Tropical Rainforest.
- ZELAYA LOPEZ, Carlos Ramon. Turismo Social y su Relación con Areas Naturales en El Salvador.



Workshop I.13

Funding mechanisms for protected areas

Chair: Geoffrey S. Barnard
Organizer: The Nature Conservancy
Rapporteur: Randall K. Curtis

Overview

The aims of the workshop were to:

- Present practical, up-to-date information on funding mechanisms for protected areas by experienced practitioners.
- Provide participants with an opportunity to talk to experienced practitioners and to each other about the subject.
- Involve participants in discussing and recommending a model strategy for funding protected areas.

The workshop was attended by an estimated 250 people, although the room could hold only just over 70 people at any one time. Participants came from the full range of backgrounds represented at the Congress.

Presentations were made to the full workshop and discussions were held in small working groups, the size of which ranged from five to 20 people. Approximately 35 papers were received and made available to participants. Eight of these papers appeared in an edition of *Ecologica*, a Colombian environmental magazine, which was made available, in Spanish and English, to the entire Congress.

In the fourth session of the workshop, four working groups developed recommendations and conclusions on several aspects of funding for protected areas.

Conclusions

1. National public sources of funding

National public funds for protected areas should be allocated from the national tax base, following the concept that the "beneficiary pays"; i.e. the environmental goods and services provided by protected areas are national assets which should be included in national accounting systems. Furthermore, government agencies such as hydrologic services, public works divisions, land reform agencies and planning agencies, as well as universities and private investors (concessionaires), are important co-investors in

protected areas. However, national public funds are more available for the establishment of protected areas (e.g., construction work) than for their long-term operation and maintenance, in particular for training, research, interpretation and education.

Funding needs for protected areas should be determined based on both direct and indirect analysis of the goods and services which these areas provide. In particular, environmental analysis at the planning stage of developing a protected area needs to consider benefits more than costs. The budgetary process for protected areas should include research into direct and indirect revenue analysis. Countries should promote research which will develop plans for national park systems which then form the basis for establishing an investment prospectus.

Dedicated funds based on user fees should contain mechanisms for channelling funds into parks. People are more willing to pay if they know the money is reinvested in the protected areas system. Countries should consider imposing a tax on inbound tourists, the proceeds from which should go into a fund dedicated exclusively for conservation of biodiversity. User fees should be set up to create a "win-win" situation in which both the national system and the local park where the fee is collected are able to benefit from sharing income from fees on a percentage basis.

Capital investment should produce attractions for tourists which do not have negative impacts on the protected area. Better design and concentration of facilities can enhance conservation and increase capacity to derive income from tourism.

2. Private sources of funding

Funding available from private sources depends on the management structure of the protected area concerned. **Private funds** are more available for privately owned reserves than for national parks. The amount of funding available from a private source depends on how closely the activities for which funds are sought relate to the activities which the funder prefers to

fund. Private funders tend to view their contributions as business ventures; they expect their investment in protected areas to finance long-term, sustainable items. It is reasonable to expect that private sources can account for approximately 25% of the funding needs for a protected area. Yet the availability of private funds for general operation of protected areas is almost non-existent except for special cases like planning and start-up, establishment of trust funds, or collaboration with NGOs.

It is also reasonable to expect an organization — an NGO or a protected area agency — to raise funds from private sources at the rate of \$25,000 to \$50,000 per year from individuals and at the rate of \$100,000 to \$250,000 per year from corporations.

Operational management costs (as opposed to capital costs) are the responsibility of the government; they should not be the focus of private fundraising. The kinds of protected area investments which private funders find attractive include:

- Land acquisition
- Environmental education
- Research
- Special infrastructure, like visitor centres
- Species-specific management
- Community outreach
- Interpretive/promotional materials and campaigns
- Training
- Restoration

IUCN and The Nature Conservancy should obtain more information about the experience of other groups in raising funds from private sources. IUCN should support a continuous process of information-sharing among its member organizations on their experiences in securing funds for protected areas. IUCN should not compete against its member organizations in the search for funds within the members' own regions.

3. International sources of funding

Environmental planning and priorities should be established from the bottom up, not from the top down.

For the foreseeable future, environmental funding should take the form of grants, not loans.

Economically sound countries can finance their own environmental and conservation projects. However, large gaps are severely limiting the availability of funds for conservation in many developing countries. Aid and capital flows from poor countries to rich countries must be reversed through debt forgiveness, more grants, etc. All governments should take immediate action to reverse the current negative aid flow of US\$ 50 billion per annum. This negative flow undermines the capacity of developing country

governments to fund projects for conservation and sustainable development.

Northern countries should immediately commit an increased amount of funds for conservation, including development projects that directly support sustainable uses of biological resources in and around areas.

Major cost-benefit studies, financed by grants, are needed to determine the full economic value of protected areas. The costs of all environmental consequences of all development projects should be determined, and once identified, should be mitigated without diluting special funds like the Global Environmental Facility (GEF) and others.

Financing agencies should monitor the implementation of all their projects (grants and loans) better.

4. Trust Funds

All aid donors should support the creation of long-term funding mechanisms for conservation projects. Trust funds should be established to support developing countries' own commitments to conservation projects.

Currently existing sources of funds for trust funds include:

- The GEF
- USAID (but solely in situations involving debt-for-nature exchanges)
- The Enterprise for Americas Initiative (USAID and its PL-480 programme)
- Other bilaterals, e. g. Paris club (through debt swaps)

Bilaterals need to formulate policy guidelines on funding trusts. Multilaterals should make funds available for trust funds. Private corporations could provide trust funds, for example as part of a carbon offset programme. Excise taxes, for example on energy, on other natural resource investments or on tourism, could provide funds for trust funds.

Items which trust funds could finance include:

- Park rangers
- Vehicle depreciation and maintenance
- Fuel
- Infrastructure maintenance
- Road maintenance
- Uniforms
- Brochures/publications/public awareness materials
- Discretionary funds for community development projects
- Administrative expenses

Items which should be financed as direct expenses include:

- Management plans
- Land acquisition
- Construction

- Road building
- Technical assistance
- Up-front training
- Equipment

At the planning stage, all of the financing should come from other sources of funds and none from trust funds. At the capital investment and infrastructure development stage, 90 to 95% of financing should come from other sources of funds and only 5-10% from trust funds. At the long-term operations stage, 10-20% of financing should come from other sources of funds and 80-90% from trust funds.

Outputs and Follow-up Action

The Nature Conservancy and IUCN will collaborate on publication of a manual on funding mechanisms for conservation, drawing substantially on material presented at this workshop.

Papers Submitted

- ABRAMOVITZ, Janet N. Investing in Biological Diversity: U.S. Research and Conservation Efforts in Developing Countries. (Selected Tables and Figures)
- ACNAT. Council Regulation (EEC) No. 3907/91 of 19 December 1991 on action by the Community relating to Nature Conservation.
- ALDERMAN, Claudia and Charles T. MUNN. In Search of Resources: The Peruvian Experience.
- ARAUJO, Miguel Eduardo. Acción Ambiental en un Período de Post-Guerra: El Caso de El Salvador.
- AZZAM, Nancy C. Local Efforts to Provide International Funding.
- BARBUT, Monique. Le Financement du Développement durable par le Ministère de la Coopération et du Développement: Application dans sa Stratégie de Conversion.
- BARRIOS, Diomira. Opciones Administrativas para el Manejo de los Recursos Forestales: Un Caso de Estudio.
- BOUCHET, Michel II. La Restructuration de la Dette Officielle Bilatérale au Benefice du Développement Durable.
- CURTISS, Randall and Francisco A. TOURRELLES. Nature Collects its Debts.
- DOGSE, Peter. Debt-for-Nature Swaps for Protected Area Management Financing.
- DOUROJEANNI, Marc J. Buen Diseño de Proyecto de Conservación de Recursos Naturales.
- FOSTER, Sherrard. Status of the Designation Process for the Proposed Stellwagen Bank National Marine Sanctuary.
- GALLEGOS, Ines. The National Parks Foundation's Experience with Debt-for-Nature Swaps in Costa Rica.

GEOGHEGAN, Tighe. Financing Wildland Systems in the Insular Caribbean.

GEOGHEGAN, Tighe. Funding Mechanisms for Protected Areas in the Insular Caribbean.

GIBSON, J. Eugene. Less Debt, Better Environment.

GOODLAND, Robert and Herman DALY. Ten Reasons why Northern Income Growth is not the Solution to Southern Poverty.

GREVE, Albert M. Donor Coordination in National Environmental Action Plans: Lessons from the Madagascar Experience.

HARSONO and Mariyanti HENDRO. Development Aid: How to Channel Donor Assistance to Best Advantage - The Indonesian Situation.

HENDERSON, Carrol L. Nongame Wildlife Checkoffs - The Minnesota Experience.

HEYMAN, Arthur M. Economic Considerations in the Development of Marine National Parks: Experiences in Jamaica, St. Lucia, St. Vincent, and the Grenadines.

HOFFMANN, Luc and Pierre CAMPREDON. The International Foundation of the Banc d'Arguin.

HOUSEAL, Brian. The Financial Cycles of Protected Areas Management: The Cost of Conserving.

JACQZ, Jane. Global Environmental Facility (GEF) Small Grants Programme.

LECLERC, Antoine. User Fees in Natural Parks: Issues and Management.

McCAFFREY, Dennis. Formulating a Strategy for Funding Protected Areas.

McCALLA, Winston and Gina GREEN. The Jamaican Experience with the Enterprise for America's Initiative.

METCALFE, Simon C. Making Investment (AID) Work to Develop Institutionally Sustainable Programmes.

THE NATURE CONSERVANCY. Foundation Fundraising.

ORJUELA, Jorge Garcia. El Fondo para la Protección y Recuperación del Medio Ambiente — FPRMA.

PARRIS, Dick. The Natal Parks Board's Funding Mechanisms: A three-pronged Approach.

PEREZ M., Carlos Isaac. Regional Strategy for External Debt Exchange to Benefit Conservation and Sustainable Development in Central America.

PEREZ M., Carlos Isaac. Financiamiento de Sistemas de Zonas Silvestres en América Central y El Caribe.

QUINTELA, Carlos E. The Birth of a Fund: Bolivia's National Fund for the Environment.

RESOR, Jamie and Barry SPERGER. Conservation Trust Funds: Examples from Guatemala, Bhutan and the Philippines.

UGALDE, Alvaro F. and Maria Luisa ALFARO. Financiamiento de la Conservación en los Parques Nacionales y Reservas Biológicas de Costa Rica.

WELLS, Michael P. A Summary of the Benefits, Costs and Risks of using Environmental Trust Funds for Biodiversity Conservation.

YOUNGMAN, David K. How can a Society pay for its Protected Areas? A Look at Some Private Fundraising Techniques with a Special Emphasis on Innovative Approaches.



Workshop I.14

Communication with the funders: developing an investment portfolio for supporting protected areas

Chair: Ralph Cobham
Organizer: IUCN (Mark Halle)
Rapporteur: Byron Swift

Overview

There is growing awareness that the tasks of maintaining, sustaining and expanding protected areas at global, regional, national and site levels are of very large proportions. The tasks span protection of the 'core' protected areas and restoration of degraded areas. Most importantly, they centre on both improving the management of multiple use areas within and around protected areas and expanding the network.

Appreciation of the benefits associated with diverse biological, cultural and visual 'products' is of rapidly growing importance. Closely related to this is the fact that the intensity of management required for many protected areas has increased into an entirely new league. As a result, funding of 'unmet needs' on an unprecedented scale is required.

Successful procurement of such funds by nation states calls for the preparation of investment portfolios. These need to be founded on programme and project inventories, as well as related budgets and schedules of the estimated benefits.

The workshop aimed to identify the methodology for developing investment portfolios for conservation of protected areas at international, regional and national levels. Attention was given to developing methodologies and providing specific numbers where possible. About 60 people attended, including senior aid agency officials and persons from a variety of regions who are experienced in regional and national park system planning. The workshop consisted of plenaries and smaller working groups.

Conclusions

The workshop concluded that investment portfolios for protected area conservation actions should be prepared at national level as quickly and effectively as possible, and then combined at regional and global levels to present to donor agencies. Specific recommendations included:

a. The goal of an investment portfolio should be to set in motion a process that results in

improved management of a nation's or region's highest priority protected areas.

b. The definition of priorities should be achieved through a participatory process that involves the major protected area constituents, including institutions, communities, special interest groups, and concerned individuals, taking into account the cultural, economic and social context.

c. The process should be built around the definition of, and building of consensus on, current status and trends, major issues, alternatives for action, priorities, and delivery mechanisms.

d. Special care must be taken to design delivery mechanisms that establish an environment in which inputs from a variety of governmental, non-governmental, and private sources are valued, encouraged, and harmonized for effective action.

e. Central to the success of any protected area investment portfolio is the development of programmes and mechanisms that assure the availability of trained personnel and the generation of adequate and stable revenue sources.

f. Implementation of the process should be based on strengthening the management framework, through networking, monitoring and evaluation, institutional development, and funding mechanisms.

g. While the framework applies generally, the specific mechanisms and structures must be elaborated in accordance with national and/or regional needs. Implementation can only succeed if the national and/or regional agencies assume full responsibility for the project.

h. The World Conservation Monitoring Centre (WCMC) should provide an overview of existing data on conservation investments by country and by objective, and the database initiated by WCMC on this topic should be completed as comprehensively as is possible.

i. Increased funding should be provided to investigate the economic and other benefits of existing and potential protected areas, specifically to assist the preparation of investment portfolios.

j. Bilateral and multilateral agencies should create small grant funding mechanisms to respond quickly to international, regional and especially national needs to build capacity in conservation organizations, both governmental and non-governmental.

k. IUCN/CNPPA should be strengthened at regional and headquarters level to prepare guidelines and to provide technical assistance which may be requested by countries in developing Investment Portfolios.

Outputs and Follow-up Action

IUCN will develop a global overview of the financial needs for the conservation of protected areas, with the qualification that current institutional capacity may be less than required to spend that amount, and that such capacity should be increased as a first priority.

Papers Submitted

AFRICAN ELEPHANT CONSERVATION COORDINATING GROUP. The African Elephant Conservation Review.

BAHAMAS NATIONAL TRUST. The Heritage Fund - Planned use of Funds Received.

CANARI and CNPPA. Proposal for an Action Program - Parks and Protected Areas of the Insular Caribbean.

CEBALLOS-LASCURAIN, Héctor. Tourism, Ecotourism and Protected Areas.

CEBALLOS-LASCURAIN, Héctor. Ecotourism as an Instrument for Conservation and Sustainable Development - A Project Proposal.

COBIAM, Ralph. Communication with the Funders: Developing an Investment Portfolio.

DAVIES DE FREITAS, Maria de L. Financing Brazil's Conservation Units: The National Environmental Project and the Global Environment Facility.

De GROOT, Rudolf S. Functions and Values of Protected Areas: A Comprehensive Framework for Assessing the Benefits of Protected Areas to Human Society.

FERNANDO, Vitus. A Regional Program to Support Protected Area Management in Tropical Asia - Draft Project Proposal.

GREVE, Albert M. Donor Coordination in National Environmental Action Plans: Lessons from the Madagascar Experience.

IARSONO and Mariyanti HENDRO. Development Aid - How to Channel Donor Assistance to Best Advantage - The Indonesian Situation.

IUCN. CNPPA Regional Reviews for the IVth World Congress on National Parks and Protected Areas.

IUCN. Biodiversity Projects Fund - Project Proposal.

IUCN and World Resources Institute (WRI). World Network of Protected Areas - Project Proposal: To define the Action and Investment Requirements to Strengthen or Establish the key Protected Areas for Conserving Biodiversity.

JORGE PADUA, Maria Teresa. Overview paper on NGOs and Development Agencies.

McCAFFREY, Dennis. Formulating a Strategy for Funding Protected Areas.

McNEELY, Jeffrey. Global Environment Facility: Corruption or Kiss of Death.

METCALFE, Simon. Making Investment (Aid) Work to Develop Institutionally Sustainable Programmes.

MUNASINGHE, Mohan. Economic and Policy Issues in Natural Habitats and Protected Areas.

PELLEW, Robin. National Budgets for Biodiversity Conservation.

PUTNEY, Allan. Investment Opportunities for Protected Areas in the Caribbean.

PUTNEY, Allan, Christina PARDO and John WAUGH. Strategic Plan for CNPPA.

REES, Colin. Asia Region Biodiversity Portfolio.

RIVERO BLANCO, Carlos. Una Metodología para Evaluar Requerimientos y Prioridades en la Asignación de Recursos en los Parques Nacionales.

SALE, John B. Priorities for Support for Protected Area Systems in Developing Countries.

SHORES, John. Protected Areas Fund.

STUART, Simon. Strengthening the SSC Network in South America to Promote the Conservation of Biological Diversity - A Project Proposal.

TISDELL, Clem. Environmental Economic Guidelines - Valuing and Presenting Requests for Financial Support for Protected Areas: The Role for Environmental Economics and Commonsense.

TISDELL, Clem. Environmental Economic Guidelines - Inter-country and Inter-regional Requests for Financial Support for Protected Areas: What Factors, especially Economic Factors, might be important in ranking these.

WORLD CONSERVATION MONITORING CENTRE. Sample Statistics on Protected Areas.

WORLD CONSERVATION MONITORING CENTRE. Draft Summary Tables of Protected Area System Budgets.



Workshop I.15

The World Heritage Convention

Chair: Hemanta Mishra
Organizer: The World Heritage Secretariat, UNESCO (Jane Robertson),
IUCN (Jim Thorsell)
Rapporteur: N. Ishwaran

Overview

Focusing on natural World Heritage sites, the workshop objectives were to:

- Review the overall implementation of the World Heritage Convention during 1972-91.
- Discuss strengths and weaknesses in selected aspects of the implementation of the Convention.
- Provide inputs to the evaluation of the implementation of the Convention and the elaboration of a future strategy.

The workshop was organized on the basis of short presentations; a panel on tourism development in World Heritage sites; and group discussions on natural heritage criteria, monitoring, management, international assistance, and cultural landscapes. Each topic was introduced by one or two speakers and was open to discussion over a period of 30 to 45 minutes. At the end of discussions on each topic the introductory speaker summarized conclusions and recommendations.

Forty invited participants from 18 States Parties to the Convention formed the core group for the workshop. Additional participants joined the workshop for presentations and discussions on selected topics. More than 100 persons attended.

Conclusions

1. Natural heritage criteria

Natural heritage criteria are not sufficiently precise to enable a rigorous evaluation of nominated sites. Reference to man's interaction with nature (criterion ii) and exceptional combinations of natural and cultural elements (criterion iii) are inconsistent with the legal definition of natural heritage in Article 2 of the Convention.

Geological and geomorphological features (landforms) and processes (structural, erosional and depositional) could have scientific (palaeontological, fossil record, etc.) and con-

servation (scenic values of sites) importance, and hence could be relevant to criteria i, ii, and iii.

The notion of biological diversity is not explicitly reflected in the definitions of existing criteria and is particularly overshadowed by emphasis on threatened species in criterion iv.

The Operational Guidelines do not adequately explain the meaning of criteria and how they are used to evaluate sites nominated by States Parties.

In order to retain continuity with past practice, no attempt should be made to elaborate new criteria but existing criteria should be revised to:

- Remove reference to man's interaction with nature in criterion ii, and exceptional combinations of cultural and natural elements in criterion iii.
- Establish one criterion for geological phenomenon incorporating relevant geological and geomorphological features.
- Make the criterion on aesthetic dimensions as precise as possible by linking it to geomorphological features, such as landforms and processes associated with their formation.
- Make explicit reference to the notion of biological diversity in criteria referring to biological/ecological processes (criterion ii) and threatened species (criterion iv).

The conditions of integrity for evaluating nominations should be modified to conform with revised criteria, and additional text should be included in the Operational Guidelines to explain the meaning of criteria, citing examples of sites that have already been found to meet them, and the application of criteria in evaluating nominated sites.

2. Monitoring

Monitoring the state of conservation of sites inscribed on the World Heritage List includes the gathering of information on a systematic

basis to up-date files on sites and identifying and responding to specific threats to sites by taking emergency measures. Current procedures used by IUCN and WCMC (World Conservation Monitoring Centre), in cooperation with the World Heritage Secretariat, have been effective in building systematic data bases and for making interventions to avert specific threats.

Voluntary monitoring reports from States Parties are welcome but may not always fully reflect the threats facing World Heritage sites. Questionnaires are not effective tools to obtain information on the state of conservation of World Heritage sites from States Parties. Information obtained through secondary sources, e.g., communications from States Parties regarding conservation measures taken or from NGOs or other interest groups on ascertained or potential dangers to sites, require verification at the field level.

Monitoring the state of conservation of sites is operationally linked to other aspects of implementation of the Convention, such as identification and nomination of sites, provision of international assistance, etc. In respect of the maintenance of an up-to-date database which could contribute to effective monitoring:

- a. The Secretariat, WCMC and IUCN, together with other secretariats for international conventions such as the Ramsar Convention, should work together to develop a reporting format to be used by States Parties.
- b. States Parties should inform the Secretariat of any changes in legal status and boundaries of World Heritage Sites.
- c. States Parties should provide copies of new information and publications on World Heritage sites to the Secretariat.
- d. WCMC should continue to review information on World Heritage Sites and initiate, in cooperation with the Secretariat, IUCN and States Parties, a three-year cycle for up-dating site descriptions.
- e. WCMC and the Secretariat should review availability of information on World Heritage sites and make recommendations for future management of information.
- f. IUCN, in cooperation with the Secretariat, should continue to implement its monitoring procedure and report threats to World Heritage sites.
- g. The cooperation of national/local organizations, such as NGOs, research and/or academic institutions, should be sought in monitoring the state of conservation of World Heritage sites.
- h. Field visits should be undertaken to verify information on the state of conservation of sites obtained through letters, written reports and other secondary sources of information.

- i. The Committee should consider revising the guidelines by introducing a "sunset" clause which would require that a site's World Heritage values will be re-evaluated after a certain number of years (the time period suggested by workshop participants ranged between 10 and 20 years).

- j. The Committee should use its authority to include sites in the Danger List, even in the absence of a request from the State(s) Party(ies) concerned, and call for support of international and national communities to remove the threats facing a given site.

3. Management

The long-term maintenance of outstanding universal values which distinguish World Heritage sites from other protected areas require special considerations in the elaboration of management plans. All World Heritage sites should have management plans that indicate how World Heritage site values will be preserved over the long term. Availability of a management plan at the time of inscription is desirable, but where it is not available including the area on the World Heritage List is a tool for generating the necessary resources for developing a management plan.

In developing a management plan, States Parties should consider bringing together all stakeholders to develop a vision which demonstrates that each of them understand their responsibilities to maintain World Heritage site values and how they will meet them over the short- and long-term.

States Parties should consider developing annual operational plans to complement long-term visions defined in management plans. Operational plans should specify administrative and staff requirements and describe ways and means of meeting those requirements. Development and implementation of operational plans should be monitored as indicators of effective management of World Heritage site values.

Development pressures in a much wider area than those within and along the borders of the World Heritage site itself need to be the concerns of managers. States Parties, in developing management plans, should define a "World Heritage site management area" that transcends the site's boundaries, and use the biosphere reserve approach in the management of the overall area.

4. International assistance

The World Heritage Fund is extremely small for the immense variety of tasks in which it is expected to assist States Parties. The Fund has mainly a pre-investment and/or catalytic function and is best used in a manner emphasizing long-term benefits. International assistance

projects supported by the Fund have in several cases had multiplier effects and brought about noticeable improvements to the state of conservation of World Heritage sites. To expand international assistance:

- a. The World Heritage Committee and UNESCO should appeal to all countries, particularly the developed countries, to increase their contributions to the Fund.
- b. The Fund's management and administrative procedures should be designed in such a manner as to fully exploit their pre-investment and/or catalytic function.
- c. International assistance, wherever possible, should be used to support actions which will have long-term benefits, such as institution-building and linking conservation of World Heritage site values with benefits to local people.
- d. Provision of international assistance should take into account absorptive capacity of recipient countries and have mechanisms for measuring quality of output.
- e. Successful international assistance projects already implemented should be used to launch campaigns to raise funds.
- f. International inter-governmental (GEF, UNDP) and non-governmental (WWF) conservation funding agencies should cooperate with the operations of the World Heritage Fund to substantially increase the financial resources available for the conservation of World Heritage sites.

5. Cultural landscapes

Several areas, described as cultural and/or rural landscapes, may have the potential to meet World Heritage criteria. The conservation of such landscapes is important and will benefit by being considered as part of the implementation of the World Heritage convention. Although some felt that a separate criteria for landscapes was not needed, other participants were of the view that criteria and evaluation guidelines for landscapes need to be developed.

The workshop recommended that landscapes should be included within the cultural heritage section of the World Heritage Convention. The criteria, and conditions of authenticity for cultural landscapes proposed by the World Heritage Secretariat at the 15th session of the World Heritage Committee, held in Carthage, Tunisia, during 9-13 December 1991,

should be established as a working model for further refinement and adoption by the World Heritage Committee. ICOMOS should be primarily responsible for evaluating cultural landscapes but a working group involving ICOMOS, IUCN and other relevant technical agencies, such as IFLA, should be established to develop a procedure for evaluation.

Outputs and Follow-up Action

- a. The World Heritage Secretariat of UNESCO will incorporate the conclusions and recommendations in this report into the processes of the evaluation of the Convention and the elaboration of a future strategy. The World Heritage Committee at its 16th session scheduled to be held in Santa Fe, New Mexico, USA, during 6-14 December 1992, will review final drafts on the evaluation of the Convention and the future strategy, for adoption and implementation.
- b. During the Congress, as many as 50 case study presentations on World Heritage sites were made as part of several of the workshops which were convened. IUCN and the natural part of the World Heritage Secretariat at UNESCO are working together to compile a volume based on products from this workshop, with a view to presenting this to the World Heritage Committee at its 16th session.

Papers Submitted

- GEBRE-MICHAEL, Tadesse, Tesfaye HUNDESSA and Jesse C. HILLMAN. The Effect of War on Wildlife Conservation Areas in Ethiopia.
- GUIDON, Niede and V. LIMBERGER. Parque Nacional Serra da Capivara, Brazil.
- LUCAS, P.H.C. (Bing) and Michael BERESFORD. The World Heritage Convention and Protected Landscapes (IUCN Category V): A Discussion Paper.
- McNAMEE, Kevin. Wood buffalo National Park: Threats and Possible Solutions for a World Heritage Site.
- ROY, Deb. MANAS - A World Heritage Site.
- THORSELL, James. From Strength to Strength: World Heritage in its 20th Year.
- WATSON, Bruce. Tourism Development and World Heritage Sites: The South Westland Area of the South West New Zealand, Te Wahipounamu, World Heritage Site.

Symposium II

Protected areas in a changing world: the scientific issues



Symposium Chair: Martin W. Holdgate
Coordinators: Tundi Agardy, Peter Bridgewater



Workshop II.1

Monitoring in protected areas

Chair: Francisco Dallmeier
Organizer: IUCN (Jeff McNeely)
Rapporteur: Francisco Dallmeier

Overview

The workshop was aimed at producing guidelines for monitoring in protected areas. Short presentations of papers was followed by a period of discussion and a brainstorming section. Over 100 people attended on Friday and around 20 participated in the brainstorming section on Monday.

Conclusions

To permit the effective conservation of world ecosystems including protected areas, better understanding of key ecological elements, processes, interactions and stresses is critically needed. Comprehensive coordinated research and monitoring programmes are essential and urgently required.

It is also vital to carry out research on the socio-economic structure of the human community, including analysis of gender roles, resource use, labour utilization, age structure and economic status.

Managers and scientists should evaluate research and monitoring effectiveness, and optimize utility of the information collected. Predictive ability must be enhanced and public education strengthened.

The workshop recommended that:

- The role of WCMC should be strengthened as a scientific coordination and data analysis agency.
- WCMC should further develop inventory, research and monitoring objectives and priorities to address world ecosystem protection requirements generally and locally as appropriate.
- WCMC should further encourage and support relevant research and monitoring initiatives by helping secure funding assistance, expediting interchange of information and expertise, and encouraging development of standardized data management systems to ensure conformity with international scientific standards.
- WCMC should augment its educational capability, for example by publishing

methodology manuals for managers conducting symposia.

e. National governments should strengthen their research and monitoring agency infrastructures to fulfil their own protected area needs for effective management and to contribute to understanding of global ecological processes, and management of environmental stresses.

f. Governments, conservation agencies, other resource users and planning sectors should collaborate to ensure that infrastructure for research and monitoring systems is effectively developed at the community level. Qualified field scientists, technical staff, educators, students, and volunteers should be used to optimize scientific continuity and public awareness, while expanding information utility and access for all prospective users.

Outputs and Follow-up Action

The most critical need is to provide a series of publications (manuals) on monitoring in protected areas for each particular topic, for example forest vegetation, small mammals, water quality, etc. These should provide a baseline of what, how and where to monitor. These publications can be the result of symposia where a group of experts prepare each package.

Papers Submitted

- BROCKELMAN, Warren Y. How many Species are there? Monitoring Biodiversity for Protected Area Management.
- CASTROVIEJO, Javier, Javier JUSTE and Ramon CASTELO. *Áreas Protegidas de la República de Guinea Ecuatorial: Su Creación y Desarrollo.*
- DALLMEIER, Francisco. Long-Term Monitoring of Biological Diversity in Protected Forest Areas.
- DAVIS, Gary E. Monitoring Natural Resources in Protected Areas: Design Considerations.
- FLORA, Mark D. and Sam KUNKLE. Water Quality as an Indicator of Resource Condition in National Parks and Protected Areas of Tropical Latin America.

- LERAT, Francois. *Inventaire du Patrimoine Naturel et Réseau d'Espaces Protégés.*
- MATHUR, V.B. and S.K. MUKHERJEE. Habitat Monitoring in Protected Areas in India.
- MONEDERO, Carlos. Empleo de Cuadratos Contiguos en el Análisis de la Biodiversidad del Hábitat en Selvas Tropicales.
- ORTECOP, Jacques and Louis REDAUD. Le Parc National de Guadeloupe.

- TAKAHASHI, Susumu. National Survey on the Natural Environment in Japan.
- WOODLEY, Simon. Monitoring Environmental Impacts of Tourism in the Great Barrier Reef Marine Park.
- ZHANG, Ping. On Establishing the Monitoring Centre of Protected Areas in China.
- ZHIAO, Shidong and Yonghua ZHAI. Strategy of Conserving Biodiversity in Changbai Mountain Biosphere Reserve.



Workshop II.2

Research in protected areas

Chair: Sarath Kotagama
Vice Chair: Milton Cabrera
Organizer: The George Wright Society (Melody Webb, David Harmon) and IUCN (Jeff McNeely)
Rapporteurs: David Harmon, Milton Cabrera, John Cooper

Overview

Effective action must be based on accurate information, and the more widely shared the information, the more likely it is that individuals and institutions will agree on the definition of problems and solutions. Developing and using information is therefore an essential part of conservation at all levels, from the local community to the global community, particularly to prescribe management action and to assess changes over time; biological, economic, social, and managerial parameters all need to be considered. UNESCO has been deeply involved in this field, and many biosphere reserves have excellent research facilities. Yet in most parts of the world, the application of research findings has lagged far behind the capacity of scientists to generate the data. The workshop addressed the following questions:

- What needs to be done to facilitate the greater application of science to management and by managers?
- What can researchers do to promote the management application of their findings?

The workshop was attended by some 30 people, from Latin America, Africa, Asia, Europe, Australia, and North America. Following a number of short presentations and discussions, the participants divided into two groups, one English-speaking and the other Spanish-speaking, to

discuss the management-research interface. The discussions addressed five issues:

- Making sure research is a priority in funding.
- Ensuring that sufficient facilities and information resources are available for research
- Making research available to other researchers, managers, and the public in forms each group can understand and use.
- Facilitating research exchanges.
- Recognizing and promoting protected areas as sites for research.

Conclusions

Well-planned research, combining natural and social science, is a vital part of the management of protected areas. Protected areas are natural laboratories; in some countries, they are the last such places available to serve as "baselines" for the surrounding landscape. Universities, governments, and other bodies concerned with research need to explicitly recognize (within policies and regulations) the function of protected areas as research sites.

Research that is valuable from a purely scientific viewpoint is not necessarily useful to protected area managers. To be truly worthwhile, research needs to be presented in three formats: for peers in science; for park managers and their agencies; and for the general public.

Researchers have many needs that are not being met: protected area authorities often have no policies to guide use of their areas as research sites; political support for long-term research is lacking; and the lack of investment in research produces a shortage of facilities, directories, and training opportunities.

A special problem related to research in the developing world is the lack of trained nationals to carry out research. Some countries are suffering "brain drains" of their best researchers, leaving a situation in which expatriates control the research in a given country's protected areas. In many countries, basic information about their protected areas is not widely available to local universities, and often is unavailable in the local language(s). Ultimately developing world researchers should receive their higher degrees in their own regions rather than having to study in developed countries.

A related problem is the practice of visiting researchers from developed countries taking with them upon the completion of their work all of the data collected, without supplying copies to the host country. This seems to be a widespread problem even when the lodgement of data and reports before departure is a condition of the entry permit.

Facilities are a great attractant to researchers, but they need not be elaborate: housing, a dry place to work, and so on. A high correlation exists between the presence of such facilities and the amount of research that is done in a protected area.

Extra efforts must be taken to integrate socio-economic factors into protected area research. This is hindered by the widespread view that social sciences are somehow not rigorous fields of enquiry and therefore should not be accorded the same status as natural science. Yet the key factors shaping the ecosystems of protected areas are in many cases socio-economic.

This leads to a corollary conclusion: the participation of local people is just as important to the success of protected area research as it is to protected area management. Local people have little interest in supporting a "natural laboratory" unless the research being done there has some relevance to their lives.

Attention needs to be paid within the research community to building alliances with institutions having similar objectives. If individual research projects can be coordinated and fit into a network among institutions, the studies will be complementary rather than duplicating each other. In this respect, the Latin American protected areas network (coordinated by FAO) needs to be strengthened, and similar networks formed in other regions. Networks involving individual institutions in the developed and developing worlds should be fostered.

Outputs and Follow-up Action

a. Protected area authorities should survey their protected areas, evaluate each one's potential as a research facility (by gathering basic biological and socio-economic information, listing the facilities available for researchers, and compiling bibliographies of past research), and make this potential known to all institutions of higher learning, government agencies, and NGOs that have an interest in research.

b. The major product from this workshop will be published guidelines on making research useful to and usable by protected area managers.

c. A likely product will be a project proposal to IUCN to prepare a list of protected areas that are in need of research, for circulation to academic institutions and other research bodies. The list would be indexed according to the type of research needed and cross-referenced to the sorts of facilities available in each protected area.

d. Other possible products: a project proposal funnelled through IUCN to establish a programme to twin parks in the developed world with those in developing countries for exchanges of information, personnel, and possibly financial support; project proposal to donors to fund the set-up of basic research facilities in protected areas that have none; and a project proposal to fund the development and maintenance of central repositories of park-related information in developing countries.

Papers Submitted

BARNAUD, Geneviève and François LERAT. La Recherche dans les Espaces Protégés Français.

CANO CORREA, Marcela. Estado Actual y Perspectivas de la Investigación Científica en las Áreas del Sistema de Parques Nacionales de Colombia.

COMANOR, Peter L. and William P. GREGG, Jr. Role of U.S. National Parks in Global Change Research.

COOPER, John and Peter G. RYAN. Benign Research on a South Atlantic Jewel: Towards a Management Plan for Gough Island.

DE LISIO, Antonio, Erich TREVISIOL and Giovanni CAMPEOL. Proyecto Diagnóstico Ambiental del Alto Orinoco.

DRIJVER, Carl. Participatory Rural Appraisal: A Challenge for People and Protected Areas.

DUFFUS, David A. and Philip DEARDEN. Whales, Science and Protected Area Management in British Columbia, Canada.

ERGUETA, Patricia, Werner HANAGARTH and Monica MORAES. Situación Actual y Perspectivas de la Investigación Biológica en las Áreas Protegidas de Bolivia.

FERNANDEZBADILLO, Alberto and Richar VISBAL. Estación Biológica de Rancho Grande - 40 Años de Investigación Científica en el Parque Nacional Henri Pittier, Venezuela.

KGATHI, Dorothy K. The Impacts of Environmental Change on Protected Areas: A Study of the Impact of Drought on Animal Utilization of the Makgadikgadi Pans Game Preserve, Botswana.

KOTAGAMA, Sarath W. How Ecosystems Function, and what can be done about it: The Role of Research in Protected Areas.

LEIGH Jr., Egbert Giles and Georgina de ALBA. Barro Colorado Island, Panamá, Basic Research and Conservation.

LETOURNEUX, F. La Recherche dans les Aires Protégées Organisation des Parcs Nationaux Français.

LOPEZ LILLO, Antonio. Un Centro de Investigación de Espacios Naturales Protegidos.

OKOLOW, Czesław. Białowieża National Park and Science.

PETERS, Hubertus. Investigación en Áreas Silvestres Protegidas en América Latina y El Caribe.

ROCA, Roberto. Ecology of Oilbirds in Venezuela: Implications for Protected Areas.

RODRIGUEZ R., Jose L. and Dolores I. GONZALES A. Estudio Ambiental de la Cuenca del Río Unare y de las Lagunas de Unare y Piritu y sus Áreas de Influencia.

RUGGIERO, M., T. STOHLGREN and G. WAGONER. A Strategy to Inventory the Biological Resources of the National Park System of the USA.

SARMIENTO RODRIGUEZ, Fausto O. Research in Tropicandean Protected Areas of Ecuadorian Landscapes.

SHELTON, N. Removing Bottlenecks in the Transfer of Park Research Information.

VEIRS Jr., Stephen D. Management and Change in Natural Areas.

WEBB, Melody. The Value of Social Science Research for Protected Areas.

WOODLEY, Simon and Peter OTTESEN. Large Marine Ecosystems and Marine Protected Areas - Information for Managing the Great Barrier Reef Marine Park.



Workshop II.3

How restoration ecology can contribute to protected areas

Chair: David Lamb
Organizer: IUCN (Elaine Dickinson)
Rapporteurs: Christine Samuel, Jill Blockhus

Overview

Many parts of the world, especially the more arid areas, contain large amounts of degraded land. In other areas, marginal land which is no longer useful for agriculture is declining in productivity. In a few areas, land is being reclaimed from its former uses (e.g., polders in the Netherlands). Many such areas can be brought back to a state of ecological health to make important contributions to conservation; they can become recreation areas, support species of conservation importance, or provide important commodities to local communities. The aim of this workshop was to define the role the protected area concept can play in restoring degraded landscapes. The workshop focused on methods of restoration for conservation, including practical results from experience.

The workshop was attended by 20 to 30 participants, coming from a wide range of backgrounds,

including ecologists and protected area managers. On the first day, nine presentations were given, with some discussion. On the second day, two more presentations were given and the participants divided into groups to discuss future research needs, recommendations, the Caracas Action Plan and policy statements.

Conclusions

Restoration ecology has a valuable role to play in protected area development and management. This role has considerable potential to expand in reaction to the increasing strains placed on protected areas by population increase and climate change.

True restoration (meaning to restore the original ecosystem) is a preferred objective, but may not be possible in many situations for a variety of reasons. In such situations, rehabilitation programmes that create self-sustaining stable communities containing many of the species native to an area are a useful and desirable alternative.

More examples of restoration are needed throughout the world (in developed and less developed countries) in a variety of biogeographic situations, to act as examples of what is possible. More research is needed into the autecology of native species to enable them to be used in restoration in preference to native species.

No standard methodology exists. Different approaches will be needed in different situations. In all cases the re-establishment of an optimal biological diversity in the landscape is a valid objective. Other objectives include:

- Restoration to a known or hypothetical endpoint.
- Recreation of cultural landscapes created by long-term human use.
- Rehabilitation involving native species together with exotic species having some ecological or economic benefit.

Socio-economic factors are often more important than ecological factors in the restoration process. Restoration must be associated with sustainable development in the degraded area.

Management and monitoring of restoration projects requires that there be a reference area or condition against which "success" is measured. However, climate change and the dynamics of ecosystems are likely to mean that all such target conditions will change.

Climate change may, in fact, mean that there is a new role for restoration ecology. That role may be to facilitate the protection of species and habitats threatened by the climate changes. This may be carried out by such mechanisms as developing linkages and corridors for isolated, fragmented reserves, by creating new habitats on the boundaries of existing reserves, or by creating new synthetic, self-sustaining ecosystems within which some species may be able to persist.

Degraded lands should not be thought of as having no conservation value; techniques are available to at least partially restore many of them. It is better to act early to restore degraded lands. If action is delayed, the scale of the problem can be drastically increased. Restored areas should be managed and monitored to ensure that objectives are being achieved.

Outputs and Follow-up Action

- a. The intention is to produce a synthesis from this workshop and from workshop II.4., provisionally entitled "Reintroduction of extirpated

species to protected areas" and including guidelines for future action. This will bring together restoration at the species, habitat and landscape levels.

- b. IUCN should identify the location of successful (or potentially successful) restoration projects throughout the world that could be used as demonstration areas. These should fit certain criteria (e.g., be beyond a certain minimum age, have as one of their objectives the improvement of biodiversity, have a well-documented history, etc.). These criteria need further development. In the first instance this might be achieved through the IUCN network and not require much funding.

- c. The development of an educational role for these projects and the establishment of new projects where none currently exist will, however, require funding. These projects could possibly be undertaken by the Commission of Ecology. UNESCO/MAB has some interests in this area and IUCN should seek ways to collaborate with them in this endeavour.

Papers Submitted

BICKMORE, Catherine J. Habitat Reconstruction and Enhancement Associated with Major Civil Engineering Schemes.

DE QUEIROZ, Sandra M. and Robert DILGER. Evaluación de los Impactos Ambientales en Países en Desarrollo: Una Estrategia para Financiar y Realizar metas Conservacionistas?

GIRO, Francesco. Restoration Parks: A New Category? (Parques de Restauración. Una Nueva Figura?)

IHERMOSO, Freddy and Adelaida MALDONADO. Restauración y Conservación de Cuencas Altas en Venezuela.

LAMB, David. Restoration for Nature Conservation: When to do it, How to do it, and What are our Chances of Success?

MADGWICK, Jane and Aitken CLARK. The Broads: The Process of Restoration.

MOON, Robert L. Evolution of the Centre for Arid Lands Restoration.

SALIFOU, Mamadou. Experience Nigerienne dans le Cas du Projet de Conservation et de Gestion des Ressources Naturelles dans l'Air et le Tenere.

SISWOMARTONO, Dwiarmo. Rehabilitation of Critical Land in Indonesia.

STURSA, Jan. Management and Restoration of the Biodiversity of Disturbed Ecosystems in the Hercynian Mountains.

VERA, Frans. Developing New Habitats for Conservation.



Workshop II.4

Reintroduction of extirpated species and problems with introduced species in protected areas

Chair:

Mike Maunder

Organizer:

IUCN Species Survival Commission (Simon Stuart)

Rapporteurs:

Michael Usher, Ibsen De Gusmao Camara

Overview

The reintroduction of extirpated species to their original range is becoming an increasingly used tool in species conservation. In contrast, many protected area managers are facing serious problems resulting from colonisation by invasive organisms. Given the close linkages between these two topics, workshop II.5 on introduced species, was combined with II.4.

The aims of the combined workshop were to:

- Review draft proposals for reintroduction procedures.
- Examine the relationship between species reintroduction and habitat restoration.
- Determine information requirements for the protected area manager on reintroductions and invasive organisms.
- Review the scale and importance of invasive organism problems and propose future actions.

The workshop was divided into two sessions; that on reintroductions was attended by 28 people; the session on introduced species by 37 people. Both sessions were attended by a wide range of professional groups, including protected area managers, research scientists and practitioners of *ex situ* conservation. In the first session, 5 papers were presented, followed by group discussion on information requirements and actions needed. In the second session, 9 papers were given, followed by discussion in 4 groups to examine particular topics.

Conclusions

1. Reintroduction of extirpated species

Ecological restoration, operating at the habitat, landscape and species level, has a valuable role to play in protected area development and management. Considerable potential exists to expand this role in reaction to the increasing pressures placed upon protected areas by population increase and climate change.

With the increasing fragmentation of landscapes and habitats, species loss is likely to accelerate, resulting in an increasing need to reintroduce species. Priority should be given to key or keystone species that are responsible for organizing ecological functioning of protected areas in a self-sustaining manner. Thus, greater attention will be given to reintroducing critical species to at least parts of their former ranges, thereby enhancing the survival chances of both the species and the habitat.

Small and isolated populations may need to be supplemented to mitigate against the deleterious effects of small population size.

The workshop recommended the following policies:

- a. Reintroduction should only take place with the full permission and involvement of the governmental agencies of both the recipient and donor countries. Private landowners and indigenous groups should be consulted to obtain full collaboration.
- b. Each reintroduction should be fully integrated with the local land use policies, and supported by local populations, except where the security of the reintroduced species is at risk.
- c. Reintroductions should, as far as possible, only take place where the original causes of extinction have been identified and either eliminated or controlled.
- d. Reintroductions should only take place when the habitat and landscape requirements of the species are satisfied, and likely to be sustained in the foreseeable future.
- e. Reintroduction programmes should follow a recognized protocol — involving an initial feasibility study, a reintroduction phase and subsequent monitoring — for example as drafted by the Reintroductions Specialist Group of the SSC, and need to be supported by long term funding and the training of local personnel.
- f. Reintroductions of critically endangered species should be undertaken by agencies with a proven ability to plan, undertake and follow up the reintroduction programme.

Priority research needs on species reintroduction include:

- a. Expansion of conservation biology research to encompass less researched groups such as reptiles/amphibians, fish, plants and invertebrates.
- b. Research into the potential for pathogen transfer between *ex situ* collections and *in situ* areas through reintroduction including methods to reduce such risks.
- c. The establishment of a series of restoration ecology projects, in a variety of geographical zones, to illustrate the value of links between restoration at the levels of species, habitat and landscape.
- d. The identification of key species, followed by ways and means of reintroducing them, and establishing the whole of the community on which they depend.

2. Problems with introduced species in protected areas

Invasive organisms are increasingly recognized as one of the most serious threats to indigenous biodiversity. Increased degradation of protected areas has profoundly changed the biotas of protected areas. The invasion of protected areas by introduced species will not only accelerate extinction rates of native and/or endemic species, but will commit the reserve management to large and continued expenditure. These effects will be made worse by climate change. In some areas such as oceanic islands, invasive species are recognized as the single greatest threat to biodiversity. The importance and management of invasive species has been given inadequate attention.

The workshop considered that invasive organisms are the responsibility of governments in whose territory the invasive species occur. It is urgent, therefore, to establish legislation (e.g. on quarantine) to reduce the impacts of invasive species. Furthermore, managers of protected areas require further practical guidance on recognising and managing introduced species.

The participants recommended that IUCN allocate clear responsibility for the issue of invasive organisms to an appropriate area of its structure, possibly through its Species Survival Commission. This source of reference should provide authoritative advice and information on matters pertaining to invasive organisms and their potential spread, management and conservation implications. This work should build upon expertise developed through the SCOPE programme on "Ecology of Biological Invasions" and subsequent programmes.

Information on introduced and invasive species is widely scattered. IUCN should find a means of collating and developing existing and new information into management support systems.

Priority research needs on invasive organisms include:

- a. The effects of climate change on the invasive potential of introduced species and genetically modified organisms.
- b. Potential control methods especially by biological agents.
- c. The role of international trade in transporting potentially invasive organisms.
- d. The effectiveness of legislative mechanisms, e.g. quarantine, in preventing the introduction and establishment of invasive species.

Outputs and Follow-up Action

- a. The draft guidelines on reintroduction procedure produced by the Reintroductions Specialist Group of the SSC be revised. It is intended that this be adopted by IUCN and published.
- b. The production of a manual on restoration ecology examining habitat restoration and species reintroduction, aimed at protected area managers in the tropics and sub-tropics.
- c. The production of a manual on the management of invasive organisms, in the same format as above.
- d. The formation of a SSC Specialist Group with responsibility for invasive organisms.

Papers Submitted

- ANDERSON, Jeremy L. Further Principles in the Reintroduction of Wildlife Principles.
- BAULU, Jean. The Control and the Management of an Introduced Agricultural Pest in Barbados and its Role as a Renewable Natural Research Resource.
- BEL HADJ KACEM, Salaheddine. La Reintroduction d'Especies Disparues en Tunisie.
- IIOLLOWAY, John S. The Impact of Introduced Animals on Conservation: progress in New Zealand since 1982.
- IZURIETA VALERY, Arturo. Especies Introducidas en las Islas Galápagos.
- MAUNDER, Michael. Reintroductions: Species Conservation and Restoration.
- MUNGROO, Yousef, E. DULLOO, W. STRAIRM, C. JONES and G. MIDDLETON. Mauritius: In the Shadow of the Dodo - Invasive Introduced Species Challenge Declining Endemics.
- RAMILO, Emilio. Monitoreo de la Reintroducción de una Población de Pudu (Pudu pudu) Criada en Cautiverio.
- USHER, Michael B. Invasive Species: Do they Threaten Protected Areas?
- WILLIAMSON, Douglas T. What is the "Right" Sub-species for Reintroduction?
- WILLIAMSON, Douglas T., Abdul R. KHOJA and J. FLAMAND. Oryx and Gazelles: What Next?



Workshop II.6

The role of species research in ecosystem conservation in tropical protected areas

Chair: Alejandro Grajal
 Organizer: Wildlife Conservation International
 New York Zoological Society
 Rapporteur: Alejandro Grajal

Overview

Successful conservation depends on linkages between research and management. Species research contributes to understanding of the natural world, and therefore enables evaluation of the impact of different management strategies. Species research, if rigorously and scientifically developed, can provide essential inputs to management by:

- Monitoring species populations and overall biological diversity as they are affected by human use, and by climatic, habitat and other changes.
- Establishing species requirements so as to allow endangered species management, re-introduction, and restoration programmes; to monitor habitat status; and to design protected areas.
- Evaluating species roles in biological communities so as to understand ecological processes, to identify keystone species, and to control invasive species.

This workshop was designed to assess the role of species-level studies as an integrated tool for the conservation of ecological processes in protected areas and their surroundings; and to evaluate human resources and resource needs for species level research in tropical protected areas. The workshop was structured around morning presentations followed by three working groups and a wrap-up session. Some 65 people attended from 25 countries. They included biologists, veterinarians, educators, managers and students.

Conclusions

Species research forms a basis for our understanding of natural system processes. However, knowledge on wild species and their role in natural systems is inadequate. Insufficient qualified and trained personnel is available to undertake research on wild species, and resources to support research on wild species are unsatisfactory. Therefore, the workshop concluded that appropriate resources need to be

allocated to species research, to train human resources, and to develop institutions and mechanisms to support species research while at the same time recognizing that local techniques used for monitoring and studying species populations may already exist.

The workshop recommended that:

- a. IUCN, in collaboration with the scientific community, and other international conservation groups, develop scientifically-based techniques for species research and monitoring in specific areas that can be realistically applied to solving management issues in tropical countries, considering the complexity of tropical ecosystems and the availability of human resources.
- b. International and national funding agencies allocate ample resources to orient, train and educate all persons related to protected areas, and to participate in the process of continued evaluation and monitoring of species and ecological processes.
- c. Research institutes establish formal programmatic linkages with protected areas. A good model would be a three-way linkage between tropical protected areas, local universities and international research institutes. Goals would be to promote greater involvement of nationals in management-related research, to build appropriate research institutions in tropical countries, to strengthen protected area management, and to focus the work of international researchers on tropical conservation priorities.
- d. Non-governmental organizations be more willing to support appropriate species research and make better use of research findings in their allocation of resources.
- e. Researchers be aware of management problems. Research outputs should be in forms that are useable by managers who should be receptive to the implications of research findings and make full use of the scientific community to enhance the conservation of protected areas.
- f. Researchers assist in training, education and interpretation in protected areas of developing countries.

Research priorities should include:

- a. Investigate the impact of different human uses and different management regimes on characteristics of wild species (density, demography, population stability).
- b. Investigate the ecological functions of wild species which are used by human groups.
- c. Examine the patterns of wild species use by human groups (value, intensity of use, extent of use).
- d. Identify species or groups of species requiring studies to understand specific conservation programmes and establish research priorities.
- e. Evaluate the effectiveness of particular species as indicators of key ecological processes within protected areas.
- f. Identify which species or groups of species participate in key ecological processes (phenology, dispersion, migration) between protected areas and areas around them.
- g. Identify present and future needs of human resources for monitoring and research and develop training and education programmes accordingly.

Outputs and Follow-up Action

The papers from this workshop will contribute to a publication on "Species Management for Protected Area Managers" which will be based on workshops on species research, inventories, genetic resources management, introduced species, reintroductions, and managing small populations, and will be prepared in collaboration with SSC.

Other activities seen as essential follow-up are:

- a. A new journal, the Journal of Biodiversity Management, should be established to meet the

need for a medium that provides a link between biological research and conservation practice.

- b. A workshop on techniques and possibilities of using indicator species in conservation management should be convened by IUCN with a view to establishing practical methodologies for researchers and guidelines for managers.
- c. A workshop of scientists and managers should be convened by IUCN to plan a network of tropical biodiversity institutes and to produce a manual giving advice to countries on how to develop biodiversity institutes. The institutes would focus on training and research aimed at applying biological science to practical conservation.

Papers Submitted

- *BJORK, Robin, POWELL, George and Maria de LOURDES AVILA. Altitudinal Migration of the Resplendent Quetzal and its Relevance to the Protection of the Tropical Biodiversity.
- BROCKELMAN, Warren Y. Gibbons, Hornbills and Pittas: Focal Species in Asian Tropical Forest Conservation.
- *BROWN, Keith S. Butterflies as Indicators for Planning, Managing and Monitoring Protected Areas in the Neotropics.
- *DOBSON, Andrew. Extinction, Fragmentation and Conservation of Species within Protected Areas at Different Geographical Scales.
- *GRAJAL, Alejandro and Stuart STRAHL. Species and Ecosystem Conservation: The Need for an Integrated Approach in Developing Nations.
- *PEARSON, David L. Tiger Beetles (Coleoptera: Cicindelidae) as Indicators for Biodiversity and Habitat Degradation.
- *ROBINSON, John G. The Use of Wildlife Species as an Approach to Protected Area Conservation.
- SILVA, Jose L. and Stuart D. STRAHL. Casa de la Fauna Silvestre en Nueve Parques Nacionales del Norte de Venezuela.
- * Papers not on file at IUCN-Gland.



Workshop II.7

Managing small populations of wildlife in protected areas

Chair: Ulysses S. Seal
Organizer: IUCN Species Survival Commission (Simon N. Stuart)
Rapporteur: Simon Stuart

Overview

The aims of the workshop were to:

- Assess the role of small population biology science (in particular population viability analysis - PVA) as an aid to the management of threatened species in protected areas.
- Demonstrate how to undertake a PVA in a workshop setting, and how to use the computer programme VORTEX for evaluating: i) the risk of extinction of a species or population; ii) the effects of management scenarios on extinction risk; and iii) the use of sensitivity analysis to detect important factors affecting the survival of the species.
- Discuss factors important in endangered species management in the various countries participating.

Eighty people attended from 32 countries, with backgrounds as protected area managers, administrators, ecologists, zoo professionals, educationists, marine biologists and primatologists.

On the first day, the principles of PVA were presented and discussed. The computer programme VORTEX was demonstrated, and the underlying science was discussed extensively. A demonstration PVA was conducted for the cotton-top tamarin. On the second day, the PVA results were discussed, and then applied to different problems in the various countries participating. Working groups were formed to prepare recommendations, which were then refined and agreed by the full workshop.

Conclusions

The current existence of species in protected areas does not guarantee the continued survival of these populations. Many processes can destabilize and threaten isolated populations. The study of the biology of small populations has been developing an understanding of the factors that affect population viability.

PVA is an essential tool for the scientific management of threatened species in protected areas. All species identified as being threatened

should be evaluated with a PVA and based on this information an adaptive management plan should be prepared and implemented.

In protected areas, a PVA should be used as a matter of course to assess risks to small populations of threatened species and to guide the adoption of management policies that minimize those risks.

To assist in the above process, the computer programme VORTEX should be made widely and freely available, and manuals (in appropriate languages) should be prepared on both the use of VORTEX and on how to undertake PVA workshops. Training should be provided to enable more people to use VORTEX and lead PVA workshops, and the application of VORTEX and PVA should be expanded to include plants and invertebrates.

Authorities with responsibility for designating protected areas and for developing policies for protected area management, and managers charged with implementing such policies, should make use of the principles, findings, and tools of population and community biology as a basis for the design of protected areas intended to conserve species; and species management within protected areas and surrounding lands.

Governments and NGOs should support the scientific study of population and community biology with the purpose of providing better information and tools for the management of species populations. Such information and tools should be disseminated for wide consideration, evaluation and use.

IUCN should develop guidelines for including biological considerations in the design of protected areas. Such guidelines should highlight the need for, and assist with, the integration of conservation biology with social, political and economic considerations to maximize the probability of species and population survival within protected areas.

Because of a widespread lack of the information needed for planning and managing small populations and habitats, it is recommended that priority should be given to:

- Classifying and mapping habitats, and making inventories of species (starting with key groups such as flowering plants and vertebrates) and mapping their distributions.
- Monitoring habitats and the size and trends of populations of species selected according to criteria such as rarity, endemism, socioeconomic value or ecological importance.
- Developing new and standardized methodologies to optimise the use of resources and to facilitate comparability of data.

A distributed global computer network should be developed that would allow for standardized entry, easy transfer and rapid dissemination of biological information relevant to wildlife and habitat management by creating:

- A distributed system that feeds into a central database allowing access and storage of species and habitat data at the local level, centralized storage of these data, and retrieval of subsets of these data necessary for managing small populations and restricted habitats.
- Means for easily and rapidly disseminating biological tools such as survey, monitoring and population viability analyses techniques.
- Methods for sorting species and habitat data that will allow for assessment of short and long term trends.

Active participation in species and habitat conservation at the local, national and international levels is essential in order to develop the information base necessary to identify and manage small populations and to enable the implementation of management strategies resulting from analyses of this information. Fostering this participation will require:

- Identifying the local knowledge base and utilizing local expertise in developing management strategies.
- Developing public education programmes that create conservation awareness at the local and national levels.
- Providing, at the local level, training that will encourage participation in the collection of scientific information and in the implementation of management plans.

- Developing interdisciplinary teams that will foster the political will and create the economic incentives necessary to ensure continued support for conservation efforts.

Outputs and Follow-up Action

The VORTEX software was distributed to 25 participants. A workshop briefing book (600 pages) was given to 40 participants; manuals on VORTEX and PVA workshops will be made available later to participants. Published proceedings of the workshop are not planned.

Papers Submitted

FAN, Zhiyong and Yanling SONG. On the Importance of Nature Reserves in Natural Conservation in China and Giant Panda Protection.

HERRERA, Anne-Marie. The Spectacled Bear in the Sierra Nevada National Park of Venezuela.

JOHNSINGH, A.J.T. Conserving Rajaji-Corbett National Parks - Elephant the Flagship Species.

LEO LUNA, Diana Mariella. Protección y Manejo del Parque Nacional Río Abiseo como Hábitat del Mono Choro de Cola Amarilla (*Lagothrix flavicauda*).

MANSFIELD, Bill. Management of Endangered Birds in New Zealand's Protected Areas.

McCORMACK, Gerald. Kakerori-Rarotonga's Endangered Flycatcher.

RAMONO, Widodo S., SUDARMADJI and Charles SANTIAPILLAI. Managing Endangered Species in Protected Areas: The Javan Rhino (*Rhinoceros sondaicus*) in Ujung Kulon National Park, Indonesia.

RUIZ DEL PORTAL, Alberto. Directrices para la Elaboración de Planes de Manejo de Especies de Fauna en Peligro de Desaparición en Espacios Naturales Protegidos.

SEAL, U.S., N.R. FLESNESS and T. FOOSE. Endangered Species: Anachronism or Essential Element in Protected Areas Management?

SUPRIADI, Dody, Ubus W. MASKER, M. NOERDDJITO and B. Van BALEN. The Bali Starling.

SZEPLAKI, Eduardo. Estudio Preliminar sobre la Utilización de Tortugas de Agua Dulce con Miras a su Conservación, en el Alto Orinoco, con Énfasis en la Reserva de Biosfera Alto Orinoco-Casiquiare, Territorio Federal Amazonas, Venezuela.



Workshop II.8

The impacts of climatic change on protected areas

Chair:	Hans Lundberg
Vice-Chair (marine):	Bob Buddemeier
Vice-Chair (terrestrial):	Rik Leemans
Organizer:	IUCN (Danny Elder/Elaine Dickinson)
Rapporteur:	John Pernetta

Overview

The aim of the workshop was to provide information on the implications of current scenarios of climatic change for protected area management and planning.

The workshop was attended by 39 people from 18 countries covering a wide diversity of disciplines ranging from climate modelling and impact assessment on the one hand, through protected areas management and conservation, to economics on the other.

The workshop was divided into two sections. The first session centred around 15 commissioned review papers presented and discussed over the course of a day and a half; the second half day session was organized as two parallel discussion groups followed by a plenary consideration of their recommendations and conclusions. The discussion groups were charged with:

- Evaluating the implications of scenarios of climatic change for terrestrial and marine protected areas.
- Preparing appropriate recommendations and guidelines to facilitate the incorporation of climatic change scenarios into protected area planning and management.

No policy statements were prepared although both the recommendations and the proposed guidelines (see below) contain policy elements emphasising the urgency of the problem and the need for development of an appropriate scientific basis for future protected area planning and management to address the implications of climatic change and sea-level rise.

Conclusions

The workshop recognized the urgent need for appropriate guidelines to be developed for the future planning and management of protected areas in the context of climatic and other sources of environmental change. Developing comprehensive guidelines appropriate for use by all

sectors of society involved in protected area management will require a concerted effort on the part of the international conservation community. The workshop drew up the following list of issues which need to be considered in preparing these guidelines.

- Protected areas should be large enough to allow natural adaptation of ecosystems and changes in the range and distribution of the species present.
- The management of protected areas should be based on the management of processes and not of individual species.
- The global distribution of existing protected areas is inadequate to ensure the survival of present ecosystems and species in the context of changing climates.
- Other sources of stress on natural systems, including increasing human resource use, pollution, waste disposal, and the attendant problems of poverty, urbanisation and poor land-use planning, are seriously reducing the capacity of natural systems to respond to environmental changes.
- Present knowledge concerning ecosystem and species responses to environmental forcing is inadequate as a basis on which to develop management strategies to reduce or mitigate the impacts of climatic change.
- The implications of climatic change and sea-level rise for protected areas can only be addressed in an integrated manner, which takes account of changing land-use regimes and human interventions which will themselves change, under changing climates.
- It would be useful to monitor the impacts of climatic change on natural systems in protected areas where the long-term security of the area provides some guarantee that the monitoring will continue in the long term.
- Protected areas provide opportunities for assessment and monitoring designed to: identify climatic change impacts and the responses of natural systems; develop appropriate models

of responses with predictive capability; and provide the basis for developing management strategies in the context of climatic change.

i. The scale and geographic extent of potential climatic change impacts requires a better integration of actions at all levels of society and in all regions. Due to the present uncertainties about the impacts of climatic change, strong links need to be established between the international research community, protected area managers, and policy and decision-makers concerned with land-use and development.

j. Existing scientific tools can be utilised now to commence local scale analysis of potential eco-climatic shifts, species sensitivity to change, and the implications of land-use.

k. Communication of research results to managers of protected areas should be enhanced through the more extensive and widespread use of spatial analogues of temporal change — remote sensing and GIS systems — and through the development of appropriate institutional arrangements for managing and exchanging data.

l. The international conservation community, international agencies and governments should recognize that by extending protection to natural areas and systems the rate of carbon dioxide fixation may be enhanced, thereby slowing its rate of accumulation in the atmosphere and associated climatic effects.

At the conclusion of the workshop a representative of the National Ecological Movement of Venezuela drew the attention of the group to the problems of climate changes due to the destruction of the Amazon Forest. The workshop agreed to endorse the statement in principle and to communicate this endorsement to the plenary session.

Outputs and Follow-up Action

- a. The urgency of the climate change threat to protected areas needs to be reflected in the Caracas Declaration and drawn to the attention of UNCED in Rio de Janeiro in June 1992.
- b. IUCN should establish an inter-commissional Task Force charged with preparing guidelines for managing protected areas in the context of climatic and other environmental changes.

Papers Submitted

- BRIDGEWATER, Peter. Impacts of Climate Change on Protected Area Management.
- BUDDEMEIER, Robert W. Potential Impacts of Rapid Climate Change on Coral Reefs: Implications for Marine Parks.
- CHEUNG, Catherine. Climate Change in Xishuangbanna, South China, and its Implications.
- CONDIT, Richard, Stephen P. HUBBELL, and Robin B. FOSTER. Monitoring Effects of Climate Variation on Tropical Forest: Use of the 50 Hectare Plot on Barro Colorado Island, Panama.
- ELLISON, Joanna C. Potential Impacts of Rapid Climate Change on Mangroves: Implications for Marine Parks.
- KGATHI, Dorothy K. A Study of the Impact of Drought on Animal Utilization of Makgadikgadi Pans Game Reserve (MPGR) in Botswana.
- KINSEY, D.W. Water Quality and its Effects on Reef Ecology.
- LUNDBERG, Hans. Impact of Climate Change in Protected Areas.
- SUTHERST, Robert W. The Potential Advance of Pests in Natural Ecosystems under Climate Change: Implications for Protected Area Planning and Management.
- TAYLOR, David and Alan HAMILTON. Impact of Climatic Change on Tropical Forests in Africa: Implications for Protected Area Planning and Management.



Workshop II.9

The impacts of pollution on protected areas: implications for planning and management

Chair: Paul Driver
Organizer: IUCN (Paul Driver)
Rapporteur: Paul Driver

Overview

The main aim of the workshop was to elaborate new methods of combatting the increasing incidence of protected area degradation caused by pollution. However, given the all-pervading nature of many types of pollution, the workshop ended up by trying to optimise the relationship between protected areas and polluting industries, to their mutual benefit.

This was a small workshop, with an average complement of 15 people drawn from industry, academia and conservation authorities. The workshop papers indicated that protected areas are currently suffering from three categories of pollution:

1. Global regional pollution

This refers to cases where protected areas happen to lie within areas of widespread pollution, which may be caused by one or several sources. Examples are:

- Protected areas which lie within the 'Sulphur Triangle' of eastern Europe (Krkonose).
- Protected areas which are affected by industrial contamination of water in major river basins (Dnieper).
- Marine protected areas affected by contamination of coastal waters due to mining (Torres Strait/Gt Barrier Reef).

2. Local pollution

Many protected areas are directly affected by pollution caused by their immediate 'neighbours'. Examples include:

- Drift from the spraying of pesticides
- Discharges from wastewater treatment plants
- Lead-shot from shooting.

3. In-park pollution

Despite their protected status, many protected areas are host to extractive industries. These may range from large-scale commercial operations to subsistence activities. They may be

either illegal, legal or given consent on a one-off basis. Examples include:

- Oil production
- Metalliferous mining
- Quarrying

The papers were, therefore, grouped and presented according to the above categories, with the first two being presented in Session 1 and the last being presented in Session 2. The papers were presented without individual discussion in order that the majority of Session 2 could be devoted to discussion and the preparation of recommendations.

Conclusions

The relatively small size of the workshop enabled the participants to have a very productive roundtable discussion of the topic. The discussion had three central themes, namely:

a. In relation to global and regional pollution, the protection of protected areas from pollution can be no different from other areas. However, the fact that protected areas are being affected by wide-scale pollution emphasises the urgent need to take action at global and regional level to reduce pollution using the best environmental management practices. The reduction of sulphur emissions, the phasing out of persistent chemicals and the thorough testing of all new compounds were noted as important elements of such management.

b. In relation to regional and local pollution, it was emphasised that protected areas have no physical boundaries. In order to provide adequate protection of protected areas, it is, therefore, necessary to apply pollution controls to the whole of the system within which the area is located, e.g., the whole water catchment. In managing the areas surrounding a protected area, account must be taken of both the movement of pollutants into the protected area and the movement of protected animals out into potentially polluted areas. In the circumstances, the concept of a physically defined buffer zone is not very useful. Rather, the functioning of the ecosystem should define the area in which careful environmental management is required.

c. In relation to in-park pollution, it was stressed that no extractive industry should be allowed unless it was essential to the national interest, and was managed to the highest possible standard of environmental protection, which standard should be international i.e., the same in all countries.

If protected areas are to be viable, it is necessary to provide them with protection from pollution as well as the more traditional protection measures. This requires action in both environmental planning and environmental management. The required approach will be different for each of the above categories of pollution.

1. Regional pollution

Pollution of a regional nature cannot be tackled by action within protected areas it requires action to control the sources of pollution outside the protected areas. This can only be done by a combination of development control planning, the establishment of quality standards for discharges and the ambient environment, and their strict enforcement. However, the fact that protected areas are being affected by pollution can provide added strength to the argument for new or improved environmental protection measures within the region.

Protected areas can also provide an excellent baseline of environmental quality, unaffected by other forms of development, against which to measure the nature and rate of environmental degradation due to regional pollution. The establishment of monitoring programmes within protected areas is, therefore, a very important step in environmental management of a region. Such monitoring programmes need to record both physico-chemical factors (quality of water, air and soil) and biological factors (biodiversity, species distribution, growth rates).

2. Local pollution

In most respects, the pollution of protected areas due to **existing** activities in neighbouring areas needs to be tackled in the same way as regional pollution. However, the proximity of the source of pollution provides the opportunity for a community/participatory approach. This requires dialogue between the protected area managers and the authors of the pollution. The relationship can usefully proceed through a sequence of four phases:

- 'Breaking down the barriers', so that the protected area is not seen as an isolated bastion, but an integral part of the local landscape and community life.
- Development of an understanding of the local benefits of the protected area, so that the local community adopts the protected area as its own.

c. Discussion of the possible methods of avoiding or reducing existing pollution, some of which may simply require changes to operational procedures and which may not require additional expenditure.

d. Discussion of opportunities for contribution to the management of the protected area by industry and other polluters. This may involve the contribution of land, scientific skills or funds.

Such investment by industry will further reinforce their feeling of ownership and, therefore, stewardship of the protected area.

Where new, potentially polluting activities are proposed in the catchment or general vicinity of a protected area, the same kind of dialogue is required. However, in addition, the opportunity is available for proper environmental planning from the outset. This will include:

- Environmental impact assessment prior to the development (EIA).
- The requirement of adequate treatment of any wastes or discharges.
- Environmental management plan to reduce the likelihood of impact on the protected area (EMP).
- The application of contingency planning to cope with emergency or upset conditions.
- Monitoring of the project and its effect on the environment.
- Control of the operation.

3. In-park pollution

Pollution arising from commercial or industrial activities **within** protected areas is a very different problem. The answer to illegal activity in protected areas is strict control **plus** the encouragement of meaningful employment opportunities outside the protected area. The question then arises as to whether any polluting development should be legally allowable within protected areas. The answer is that this depends upon the category of the protected area concerned. However, one rapidly proceeds to the question of resources of great economic value (e.g. oil or gold) within national parks, the development of which would contravene the internationally-accepted definition of a national park. The reality is that, in much of the developing world (and the developed world), if oil, for example, is found it is going to be developed even if that leads to the degazetting of the relevant area. This is inevitably a decision which can only be taken by the government. However, if development is allowed to proceed, it is vital that resultant pollution should be avoided or minimised. This can be achieved by an integrated and comprehensive programme of environmental planning and management, as outlined above in relation to local pollution sources.

The international scientific community can play a very valuable part in assisting with these tasks. The involvement of the international community also gives greater credence to the environmental protection measures developed, with a greater likelihood that they will be observed.

Outputs and Follow-up Action

It is proposed that the proceedings of the workshop should be prepared for publication.

Papers Submitted

COLE, C. Andrew, John P. KUMER, David A. MANSKI and Daniel V. RICHARDS. Annual Report of National Park Marine Debris Monitoring Program: 1989 Marine Debris Survey.

CORRIE, Carlos. Plan Nacional de Contingencia contra Derramos Masivos de Hidrocarburos en Aguas de Petroleos de Venezuela y sus Empresas Filiales.

CRAIK, Wendy. Combating an Oil Spill in the Great Barrier Reef.

DRIVER, Paul. Environmental Review - Oil Production in Reserva de Producción Faunística Cuyabeno Amazonia Ecuatoriana.

DRIVER, Paul and Eldad TUKAHIRWA. Preliminary Environmental Impact Assessment of Lake Katwe Salt Plant, Western Uganda.

DRIVER, Paul and Eldad TUKAHIRWA. Preliminary Environmental Impact Assessment of Kasese Cobalt Plant and Stockpiles, Western Uganda.

ENEMARK, Jens A. and Folkert DE JONG. Pollution of the Wadden Sea.

RAMADE, François. Non Point Source Pollutions, a Growing Threat to Protected Areas.

SVENSON, Torbjörn. Acidification and Liming in Swedish National Parks.



Workshop II.10

Protected areas and the hydrological cycle

Chair: Edward Maltby
Organizer: IUCN Wetlands Programme (Patrick Dugan)
Rapporteurs: Susan Toch and Antonio dos Santos

Overview

The aims of the workshop were to:

- Review the current and potential contribution of protected areas in managing the world's freshwaters, including both their role in regulating land use in watersheds and in providing the basis for sustainable resource use in floodplains, estuaries and component ecosystems downstream which are dependent upon freshwater.
- Identify mechanisms through which to build new institutions and the required cross-sectoral linkages among interest groups including protected area managers, water resource planners and hydraulic engineers.
- Draw up future actions at national and international level which will enhance substantially the role played by protected areas in managing natural ecosystems as an integral component of freshwater resource management.

- To determine the priorities for a new scientific base on which policy and management is to be built.

A total of 45 people attended the workshop over two days, from 18 nations and from a wide range of professional backgrounds, including water engineering and hydrology (both public and private), environmental science, conservation (government and NGO), development assistance and project management.

Progress in integrated management requires close cooperation among diverse disciplines and interest groups. So far, however, collaboration among protected area authorities, water resource planners and hydraulic engineers has been minimal. To assist in building such cross-sectoral linkages, participants of the workshop examined the critical inter-relationships between freshwater management and the conservation of natural ecosystems. A series of case studies were reviewed which highlighted the roles played by protected areas in managing watersheds and the impact of changes in

quantity and quality of freshwater on the diversity and productivity of natural ecosystems. The workshop concluded by giving guidance for future action to enhance the contribution made by protected areas in managing the world's freshwaters.

Conclusions

Sustainable use of the world's water resources requires urgent action, with the highest priority to be given to the implementation of integrated management of whole watersheds. Within this framework, high priority needs to be given to the establishment and management of protected areas with appropriate new criteria for their designation. These should be based upon the functional roles of natural ecosystems in protecting hydrological processes.

Protected area authorities should encourage the establishment of, and participate in, appropriate institutional structures to resolve conflicts over competing water and land uses within the watershed, in particular those which have been traditionally polarized between economic and conservation needs.

The economic contribution of natural ecosystems through protecting hydrological processes should be recognized explicitly by governments and development agencies, and the costs of securing appropriate protected areas included in watershed management budgets, and other appropriate regional development plans.

The workshop identified the following as the highest priority actions:

- Build awareness among key decision-makers, senior civil servants, administrators, technicians, development assistance agencies, and the media, of the role played by protected areas in improving management of the water that sustains human life and environmental quality. This action will build upon an improved information base which quantifies the full ecological, social and economic values of the protected areas. It will be achieved through the production of appropriate awareness materials, seminars and site visits through which the target audience is taken to see the problems and solutions in the field.
- Strengthen the capacity of protected area authorities to increase substantially the investment made in establishing and managing natural areas for protection of the hydrological cycle and enhancing the benefits to be obtained from natural ecosystems which are dependent upon particular freshwater regimes. Full use should be made of existing mechanisms for strengthening international cooperation in this field, notably through the Ramsar Convention.
- Enhance understanding of the interactions between the bio-physical and socio-economic

factors upon which protected areas are established and managed. Improved information is needed that demonstrates the role of the hydrological cycle in the maintenance of environmental integrity, stressing the importance of effective management and protection of critical habitats and ecosystems as integral to the hydrologic balance. The detailed analyses of the hydrological impact and associated environmental, social, and economic costs of ecosystem degradation and loss, as well as improved methods of assessing effects of resource manipulation (such as water diversion and retention by dams and other works upstream) should be included.

- Evaluate the success of these actions at least once every five years in order to identify weaknesses and specify areas where substantial further investment is required.

Outputs and Follow-up Action

- Two written products will be prepared: a proceedings volume to make the written papers available to a wider audience; and a synthesis volume which will draw upon the material presented in the workshop, together with other published work, and will analyze the role of protected areas in sustaining the hydrological cycle. The latter volume will also build upon the case studies to develop guidelines for protected area authorities, water resource managers, and other concerned professionals. It is intended that this synthesis serve as the basis for a subsequent programme of training activities for a multidisciplinary audience. It will provide a comprehensive policy and planning overview on protected areas and water management.
- In support of this work, IUCN is encouraged to give greatly increased emphasis to the designation of protected areas for the benefit of hydrological management. An IUCN Working Group on Protected Areas and Water should be established in order to review the findings of the workshop and develop a more detailed action programme. The Group should be given a budget for meetings, documentation and publication. The Working Group should liaise with other IUCN programmes and those of other organizations.

Papers Submitted

BARNAUD, Genevieve and Rene ROSOUX. Gestion Hydro-Agricole d'une Zone Humide dans un Parc Naturel Régional: L'Exemple du Marais Poitevin, France.

DOBIAS, Robert J. The Arun III Road and Hydropower Project: Access to an uncertain Future.

DUGAN, Patrick and Edward MALTBY. Managing the Hydrological Cycle: The Role of Protected Areas in Addressing the World's Freshwater Crisis.

HAMILTON, Lawrence S. National Parks, Watersheds, and Development.

KHAN, I.S.A. Nather. Protection of Peat Swamp Forest for Sustainable Water Resources Management for Agriculture: A Case Study in Malaysia.

MEYNELL, Peter-John and M. Tahir QURESHI. Protected Areas and the Hydrological Cycle: Case Study - The Indus River System.

SAAVEDRA ROMAN, Jesus E. Los Espacios Naturales Protegidos en el Ambito del Proyecto Yacambu-Quibor, Venezuela.

TCHAMBA, Martin, C.A. DRIJVER and H. NJIFORTI. The Impact of Flood Reduction on the Waza Logone Region and Especially the Waza National Park, Cameroon.

TOCH, Susan L. Water or Wisdom: Looking Through the California Drought.

VINKE, P.P. and I. THIAW. Les Aires Protégées et les Barrages: Le Cas du Delta du Fleuve Senegal.



Workshop II.11

The science of management in the coastal zone

Chair: Tundi Agardy
Organizer: IUCN Coastal and Marine Programme (Danny Elder)
Rapporteurs: Wendy Craik, Paul Holthus

Overview

The aims of this workshop were to:

- identify the kinds of science important to the design, planning, implementation and long-term monitoring of effective multiple-use marine protected areas.
- Begin to translate that scientific information into a language both understandable and useful for planners and managers.
- Generate clear, concise but specific statements on how to create and maintain better marine and coastal protected areas.

Workshop II.11 was the first in a succession of four Congress workshops on how to conceive and implement better marine protected areas and use them to practice more effective marine conservation on ever larger scales. The four workshops, in general terms, covered science, planning (III.2), operational management (IV.5), and lessons to be learned from specific examples (a session held in the Caracas Forum).

Approximately 70 participants attended the day-long science workshop. Of these, nearly 70% were applied or theoretical natural scientists, 5% social scientists, and 10% academics. An estimated 85% had played a direct role in the formation or management of at least one marine protected area.

The science workshop was designed to allow participants to hear presentations from six scientists representing divergent fields of interest and geographical focus. In the afternoon, participants heard about special projects in the Mediterranean and in Australia. Discussions following all of these presentations were animated and constructive, and participants spent most of the afternoon suggesting statements for the report and Caracas Action Plan.

Conclusions

Marine protected areas exist as discretely defined focal points for conservation and cultural preservation in a larger, less-managed mosaic of landscapes and seascapes. As our planning and management improves and becomes more science-based, managers are able to look beyond the boundaries of marine protected areas to the ocean and coastal systems at large. The role of science in both planning and managing marine protected areas and in developing larger scale ecologically sustainable ocean conservation is complex. Science has its entry points into more holistic marine protected area management in many places, some of which are enumerated below.

Ecologically important marine areas deserving the strictest possible protection may be identified for one or more of the following reasons:

- To protect especially important areas for production that support a targeted set of species in an ecosystem; these areas might include feeding sites, breeding areas, sources of recruitment, and nursery areas.
- To protect species-rich or particularly sensitive marine areas.
- To protect important gene pools or specific "seed banks" of organisms.
- To preserve populations of organisms at levels greater than theoretical minimum viable population sizes (MVPs).
- To provide control and testing areas for experimental research or for long-term monitoring to test the effects of management.
- To provide sites for assessing regional or global change.

Protection of these ecologically essential areas means focusing conservation and management on critical processes. This requires a physiological or functional, rather than a structural, view of marine conservation.

The basic steps by which these process-oriented marine protected areas should be planned are given below. They can be grouped into six categories, of which the first five are roughly in chronological order.

1. Defining the area of interest for conservation

Identifying the geographic area of concern, recognizing the linkages between marine and terrestrial habitats. This must be done with clearly defined management goals in mind, whether biological, sociological, economic or political. These goals must be specific to the region where the protected area is being planned. The following guidelines are suggested:

- Natural regions (i.e., large marine ecosystems) should be defined, based on the biophysical characteristics of the system targeted for conservation.
- Marine environments should be managed comprehensively through integrated management planning; a range of methodologies should be employed for zoning of management.
- The scientific community needs to apply the knowledge and theories of ecology, genetics, oceanography, hydrography and conservation biology to define discrete management units. The boundaries of these units can then be modified according to socio-economic and cultural factors to define objectives of sustainable use or biodiversity conservation.
- In order to identify a marine or coastal area needing management attention, we must ask ourselves what we are trying to protect, and from what? Every marine protected area should have a well-defined operational objective or set

of objectives, such as protecting a resource, a value, or system. Operational objectives might be broadly classified in three categories: protecting biological diversity; demonstrating sustainable use; and monitoring environmental change.

e. The science conducted in support of the establishment of marine protected areas, boundary setting and monitoring needs to include social and economic sciences.

f. The social sciences, especially anthropology and socio-geography, should be used to identify important areas to preserve. CNPPA should thus undertake a study on the ways traditional populations identify such focal areas and how they manage their impacts on them.

g. In identifying sites for marine protected areas, scientific investigation and feasibility analysis should proceed in parallel, not sequentially. This site identification should seek out and document traditional and other local knowledge.

h. Special attention should be given to those species that traverse, or are affected by factors that traverse, national boundaries (in terms of both science and management).

i. New developments in the theory of size and shape of protected areas should be carefully monitored for their applicability to marine protected area design.

j. Given the nature of marine and coastal systems and the enormous threats they are under, multiple use, multi-objective protected areas should be as large as possible. Such scaling up does not necessarily imply that strictly protected sub-areas within the greater management regimes (see below) need also be large.

2. Identifying foci for management (i.e. critical or core areas)

How to identify the ecologically important areas that would conserve critical processes and how to ensure that management of the protected area will be sustainable. Delimiting these critical areas must involve the use of all forms of information available from physical and chemical oceanography, population dynamics, genetics and ecology. Some of this information may be conceptual and derived from state-of-the-art models, others may be specific to the region or locality. The following guidelines are suggested:

- As full and diverse a range of methods as possible should be used to identify critical processes and to find where (and when) such critical processes occur. Such methods include physical and chemical oceanographic studies, biophysical modelling, remote sensing and GIS mapping, ecological studies, population genetics and dynamics analyses, and traditional knowledge. The main objective of all these tools, preferably

used together, is to define critical or focal areas within management units.

b. The size, shape and location of harvest refugia (small areas where harvesting is prohibited), core areas, or critical areas should be determined experimentally — starting with best guesses based on available data, scientific theory and local knowledge.

c. In designing core areas in shallow waters of the tropics, special consideration should be made to protect reefs that act as sources for recruits. Analogous, though less well-defined, conditions exist in other marine systems as well.

d. Problems of scaling and dynamics in identifying core areas or zones must be considered, keeping in mind that delineation of seasonal or moving cores is at least theoretically, and in some cases practically, possible.

e. A substantial scientific effort should be devoted to develop and test tools for identifying critical processes and core areas — tools that could easily be used in developing countries lacking sufficient resources to devote to science and for which existing time series data on marine areas are scant.

f. IUCN should coordinate the preparation of a manual describing low-cost, low-tech methods for designing, implementing and monitoring marine protected areas.

3. Delineating such core areas for management

The practical process of delineating these areas and making their boundaries recognizable to all users requires several approaches:

- Techniques of landscape and seascape ecology for identifying core attributes and buffer processes should be used in all physical design and operational planning for marine protected areas.
- More case studies should be prepared of successes in identifying critical processes or areas and in delineating those areas for management purposes.

4. Managing areas to safeguard against adverse damage to critical ecological processes

Although management exercise is based equally on science, economics and sociology, the science is vital to determine what processes are critical and what processes can be conserved through management.

The ecological requirements of target species and the physiology of target ecosystems must form the basis for management. To this end, management must seek to control those direct and indirect human activities that most adversely impact population replenishment or impair ecosystem function.

Not all detrimental human impacts can be managed. Thus, scientists must work with planners to discuss the feasibility of regulation, given not only human and financial constraints but also system constraints due to the open nature of the ecosystems and the geographically large linkages between habitats and processes.

In many marine systems, a core/buffer approach to management is important and should be used. However, the successful conservation of the core area will depend on the assurance that propagules for living components of the system will be able to reach and live in these strictly protected areas.

For those areas where large-scale commercial fishing (or even intense artisanal fishing) occurs, the management plan for the marine protected area may have to include aggressive control of fishing, specific to site and season.

Scientific information and approaches should be used not only in the design but in the long-term management of marine protected areas. Effective management will use a multi-disciplinary approach at all stages of decision-making. Such involvement will improve the necessary feedback between disciplines and will provide additional motivation for scientists to become "conservation scientists".

5. Monitoring to assess management and to contribute to studies of global or regional change

How to monitor progress to evaluate whether the original objectives are being met, to assess whether changes in the landscape or seascape are moving in the right direction, and to contribute to a network of protected areas utilizing marine and coastal reference points to evaluate regional and global phenomena.

Long-term scientific monitoring of marine protected areas and their surroundings is vital to successful conservation and management. Governments and intergovernmental bodies should provide the resources necessary to allow long-term monitoring of:

- Biota and processes in protected areas
- The efficiency and course of management
- Stresses on the protected system
- The status and trends in the regional and global environment
- The socio-economic effect the protected area has on local and regional economies.

The data collected from monitoring should be made freely available to all who have an interest in them, including government agencies, NGOs, industry, local communities and conservationists in general. These data should be presented in a clear and understandable form. The monitoring data should be standardized to allow for



Workshop III.1

The new regional planning: how it can protect biodiversity

Chair: Richard E. Saunier
Organizer: IUCN Commission on Environmental Strategy and Planning / Organization of American States
Rapporteur: Richard A. Meganck

Overview

The general aims of the workshop were to examine some new concepts in regional planning and their application. Regional planning seeks answers to the three questions which guide economic development:

- What resources are available to improve the quality of life?
- How are they to be exploited?
- For whom?

The "New Regional Planning" asks a fourth question: Who is to decide?

In answering this question, all interests to be affected by a development activity — including those supporting biodiversity conservation become involved in the process. As a result, conflicts are minimized and political support is garnered.

The specific aims of the workshop were to:

- Outline the common principles in landscape, ecosystem and regional planning.
- State the purpose and methods of socio-economic development.
- Present the rationale for use of regional economics in regional planning.

Case studies were presented to demonstrate elements of these principles and methods as used in regions of high priority for conservation of biodiversity.

Approximately 100 participants attended the opening session and about 50 participated in six panels. Participants had a broad range of experience and disciplines, most of them being scientists, educators and planners. Many members of the IUCN Commission on Environmental Strategy and Planning (CESP) attended and presented papers. Over 50 papers were submitted to the workshop. On the first day, six conceptual papers were presented covering regional development planning, landscape ecology, integration of protected areas in regional planning, conservation and coopera-

tion, and biodiversity management. These were followed by a number of case studies on regional economics.

On the second day, each participant was given a choice of attending any one of six small panels, which were charged with identifying issues and potential solutions for each of the following topics as they related to regional development planning and biodiversity management: information needs; institutional arrangements; social concerns; regional economics; border area planning and international parks; and political will. Each panel was led by a facilitator who subsequently reported back to the workshop on the output of the individual panels. These included material to be presented in the final product of the workshop as well as comments and suggestions on the draft Congress Recommendations.

Conclusions

The workshop encourages governments to:

- a. Recognize the role which protected areas play in the context of national and sub-national development plans and economic policies.
- b. Ensure that individual sector policies (i.e., on agriculture, forestry, fisheries, industry, urban development, transportation, energy, etc.) are coordinated with policies on protected areas.
- c. Give special consideration to information needs, management structures and policies, financing mechanisms, and monitoring and evaluation methods for regional landscapes in border areas.

In order to apply these suggestions, governments and other organizations will have to:

- a. Use a planning framework for regional development that addresses social and economic issues simultaneously with the management of biodiversity.
- b. Identify compatible investment projects in and around protected areas as part of a strategy for the development of the region.

c. Incorporate biodiversity conservation as a part of integrated regional development plans.

d. Identify information needs relevant to regional planning, and assemble comprehensive information in one place. This information should be available to all parties on a continuous basis.

e. Investigate how national social and economic policies may be brought to bear on the issue of biodiversity conservation policies.

Outputs and Follow-up Action

A publication from the workshop will be prepared, which will consist of guidelines for the "new regional planning", the case studies and the panel recommendations. The publication will be a joint effort of the Department of Regional Development and Environment of the Organization of American States and the IUCN Commission on Environmental Strategy and Planning.

Papers Submitted

AITCHISON, John and Michael BERESFORD. Protected Landscapes - One Way Forward.

CEREZO BLANDON, Marco V. El Proyecto Piloto de Conservación y Manejo de Cerro San Gil: El Área Protegida como Unidad de Planificación y Desarrollo.

COATES, Barry. Integration of Natural Resource Management into National Development Planning.

DE TEJADA, Antonio F. La Nueva Planificación Regional: Las Áreas de Influencia Socio-económica en los Parques Nacionales de la Red Estatal.

EDWARDS, Ron. The National Parks of England and Wales: Fit for the Future.

GLICK, Dennis. Greater Yellowstone Tomorrow: Charting a Course for a Greater Yellowstone Forever.

GRANT, Joy. Rio Bravo Conservation and Management Area and Programme for Belize: A Case Study of Private Management of a Protected Area.

GREEN, Michael J.B. Designing a Minimum Protected Areas Network to Conserve Sri Lanka's Biological Wealth.

HOWARD, Alastair and J.J. FRANCIS. National Park Management in Australia: The New South Wales Approach.

KERR, A.J., M.B. USHER and S.D. WARD. The Challenge of Protecting Scotland's Natural Heritage.

KIOKO, J.M. Managing National Parks and Protected Areas in Kenya - an Overview.

METCALFE, Simon C. Communities, Parks and Regional Planning for African Savannah: A Co-Management Strategy Based on the Zimbabwean Experience.

NAVEH, Z. Landscape Ecology and Biodiversity.

NELSON, Gordon and Rafal SERAFIN. Assessing Biodiversity: A Human Ecological Approach.

RANJITSINI, M.K. Conservation of Protected Areas - Ramblings and Reminiscences.

ROJAS, Martha. Presente y Futuro de las Áreas Protegidas en la Cuenca del Amazonas.

SAGI, Yoav. Protection of Open Space Landscape in Areas Exposed to Massive Development Pressure.

SARMIENTO, Fausto O. Fragmentación del Hábitat: Un Desafío para la Conservación de los Paisajes Tropicales del Ecuador.

SNEED, Paul G. Conservation and Cooperation: Reconceptualizing Cooperative Management for the Preservation of Biological Diversity.

SODUPE ROURE, Miquel. El Papel de los Parques Naturales en el Ordenamiento Territorial.

XUE, Dayuan. The Review and Prospect of the Development of Protected Areas in China.



Workshop III.2

Regional planning, protected areas and the coastal zone

Chair: Graeme Kelleher
Organizer: Great Barrier Reef Marine Park Authority
(Graeme Kelleher/Chris Bleakley)
Rapporteurs: Simon Woodley, Chris Bleakley, Wendy Craik

Overview

The aims of the workshop were to determine how regional planning and marine protected areas (MPAs) can contribute to ecologically sustainable use and biodiversity. The workshop was attended by approximately 50 people with a wide range of experience and knowledge, including scientists (both biological and social) and managers. Participants were from both developing and developed countries, and from government and non-government organizations.

The workshop first considered case studies from different biogeographical areas followed by a panel discussion. In the second session, policy groups were formed to consider the following topics:

- Integrated planning of adjacent land/sea areas.
- Criteria for deciding between large multi-use MPAs and small highly protected areas.
- Global representativeness of MPAs: criteria for determining which areas are most in need of protection as a contribution to global biodiversity.
- Global representativeness of MPAs: criteria for determining which areas are most in need of protection as a contribution to global or regional ecologically sustainable development.
- Criteria for effective arrangements for establishment and operation of MPAs.

Conclusions

The key to achieving ecological sustainability of the coastal zone is integrated coastal zone planning and management encompassing the coastal lands and sea. It must be recognized that land and water use behind the coastal zone can have significant impacts on it.

Requirements for management of the coastal zone are:

- Development, involving and seeking the commitment of interest groups and the community generally, of a vision, strategies and management plans for the integrated management of the coastal lands and sea. These would be regularly revised.
- A process for the oversight of coastal development with powers and management plans to ensure that it is ecologically sustainable particularly through preparing adequate Environmental Impact Assessments. EIA should cover activities outside the marine protected areas as well as inside.
- The design and management of monitoring and evaluation programmes which will define the state of terrestrial and marine and coastal environments and the trends in environmental parameters.
- Design and management of multi-disciplinary research programmes aimed at solving environmental problems.
- Enabling legislation for the planning and management of the coastal lands and sea which should override conflicting provisions of existing legislation, and is based upon the principle of ensuring ecological sustainability. Such legislation should be based on the conservation and management of coastal lands and seas in their entirety and should provide for existing uses and continuing sustainable harvest of food and materials in the majority of a country's marine and coastal areas.

The maintenance of entire coastal ecosystems is of particular concern. Examples are: estuaries, wetlands, coral reefs, coastal barriers and lagoons and sea grass beds.

In recognition of the fact that research on global problems can be effective only when supported by scientifically-based data collection over an appropriate length of time, the commencement of long-term monitoring programmes is a high priority.

Governments should develop an overall policy on the management, sustainable use and conservation of the coastal land and sea for each country as a whole, for regions of a country where appropriate, and for identified sites of particular significance at the national level. Such a policy should aim to:

- Protect sustainable traditional use patterns.
- Diversify local economies.
- Exploit commercially important stocks above "MSY" or sustainable levels.
- Include economic evaluations of conservation in decision-making.

The establishment of both highly protected and multiple use areas is necessary and both play a vital role in the protection of marine ecosystems. The location of each type should be variable depending on both ecological and socio-political considerations and should be pursued at a variety of appropriate geographical scales. Due to the open nature of marine systems, work on all geographical levels should be integrated within the largest regional planning and management systems practicable.

Marine protected areas are important tools for conserving marine biological diversity, and they are most effective when they are designed and managed in consideration of surrounding ecosystems, including terrestrial areas, and cultural and other human needs and values. MPAs should be established in conjunction with an education programmes at all levels.

The development of laws for the conservation, management and protection of the marine environment should be undertaken within the culture of the country and involving all tiers of government.

National legislation and coastal land and sea management policies should articulate the right of individuals to participate in the major resource management decisions affecting their lives. Public participation should not be used as a way to sell decisions already made, as a tool for social research that is not shared with the community, or as a panacea for solving technical problems. Rather, the objectives of such public participation should be to:

- Integrate popular knowledge and experience into the planning and management process.
- Ensure that all needs and priorities are taken into account in decision making.
- Guarantee the quality of solutions identified and of their appropriateness to a given situation.
- Involve the public in actual implementation of management.

The principles, techniques, and attitudes relating to public participation should be included in

the curricula of institutions training resource managers.

Interest groups should be encouraged to organize so that they can effectively participate in the management process for resources important to them.

The workshop recommended that:

a. IUCN should establish a register of agencies which can provide training in coastal land and sea management science.

b. IUCN should provide, enhance and document the benefits of marine protected areas to society, particularly for local people who may feel disadvantaged.

c. IUCN should request the International Maritime Organization (IMO) to designate MPAs as "Areas to be Avoided" by shipping and that IMO consider strengthening provisions of the "Particularly Sensitive Areas" and "Special Areas" including discharge standards.

d. IUCN, in particular its Commission on National Parks and Protected Areas (CNPPA) and its Commission on Ecology (COE), working with the Great Barrier Reef Marine Park Authority, UNESCO, and others, should identify sites to include in the regional components of the global system to conserve marine biological diversity, including all areas of special concern, using biogeographical classification schemes adopted in each region.

e. As part of the 1993 IUCN General Assembly, a forum should be convened by CNPPA and COE to complete a global strategy and action plan for developing the global system of MPAs and to review progress in the regional classification schemes. The strategy and action plan should provide direction to the International Marine Conservation Network of government and non-government marine conservationists, to be initiated by WWF and the Centre for Marine Conservation, to facilitate implementation of the strategy and for other marine conservation purposes.

f. In 1994, CNPPA and COE should convene a small symposium of biogeographers with workshops on marine biogeography and conservation that would bring experts on a wide variety of taxa and biogeographic specialties to review regional classification schemes and develop a global classification framework for establishing the global system of MPAs.

g. IUCN's efforts to establish a global system of marine protected areas should be coordinated with UNESCO and their biosphere reserve system, and with other appropriate organizations with marine area management programs, such as the IMO.

h. IUCN should identify means, such as through ratification of the International Convention on the Law of the Sea and designation of

World Heritage Sites, to provide necessary management and protection of biological diversity of international waters and the seabed beyond Exclusive Economic Zones.

i. A clearly defined administrative system should be established in each country for undertaking coordinated action and integrated management of coastal and marine areas. This could be achieved through a coastal zone management authority or through the establishment of formal coordinating mechanisms of major responsible agencies.

j. Each nation should develop a process which will allow exchange of monitoring and other data.

k. An international fund should be established to provide for immediate response to coastal land and sea environmental emergencies.

l. Management objectives encompassing conservation, public education and scientific research and public enjoyment should be written into legislation.

m. MPAs should be designed to conserve and manage ecological units, through a network of areas including unique and representative ecosystems.

n. Certain areas of critical concern should receive special management attention to maintain their biological diversity values. These include: areas of important taxonomic diversity or endemism; spawning areas; areas that serve as sources of recruits; areas serving as nursery grounds; areas of special feeding importance; areas of high production; corridors (to allow for global change); migration stopover points and bottlenecks; and other rare or unique ecosystems, such as deep-sea hydrothermal vents, as their special values become apparent.

o. MPAs can also be used to conserve biological diversity by providing opportunities to restore or maintain overexploited or other populations subject to human threats; to protect ecological processes; to conduct research beneficial to conservation, including sustainable use and managing global change; and to educate the public and provide information to policy makers.

p. Legislation to provide for the creation of MPAs should recognize the linkages between protection and maintenance of ecological processes and states and the sustainable use of living resources; include stated objectives encompassing conservation, recreation, restoration, education, scientific research and monitoring; and take into account regional, international and multilateral treaties and obligations.

q. Legislation should provide for overall responsibility and coordination by all agencies with statutory responsibilities within and adjacent to areas being managed and provide either directly or by cross reference for control of activities which are outside the area but which may affect the area.

r. Legislation should contain proper powers and detail for proper implementation and compliance, definition of both legal and ecological boundaries, monitoring, financial arrangements and regulations and penalties.

s. Legislation should prohibit activities that are inimical to protection of the area including oil and gas exploration and mineral extraction.

t. All vessels including military vessels in peacetime should be required to comply with regulations on vessel movements.

u. Legal and administrative systems should include provision for valuation of the benefits and costs of marine protected areas for all uses.

Outputs and Follow-up Action

Guidelines for Establishing Marine Protected Areas were published and distributed at this Congress. Published proceedings of the workshop will consist of the workshop report, the abstracts of papers presented, a summary of discussions, conclusions and policy statements.

Papers Submitted

ABDULLAH, A. and Henk UKTOLSEYA. The Coastal Zone Management Strategy in Indonesia.

BATISSE, Michel and Alain JEUDY DE GRISAC. Marine Protected Areas in the Mediterranean and the Black Sea: Past, Present Status and Prospective.

CH'NG, Kim-Looi. Establishing Marine Parks in Malaysia: Issues, Problems and Possible Solutions.

CRAIK, Wendy. Regional Planning, Protected Areas and the Coastal Zone, Case Study: Australasia.

CROOM, Miles, WOLOTIRA, Robert J. and William HENWOOD. Proposed Biogeographic Subdivisions of the Northeast Pacific Marine Realm.

DIEGUES, Antonio and André de Castro MOREIRA. Global Representative System of Marine Protected Areas: South Atlantic Marine Realm - The Brazilian Coast.

DINGWALL, Paul. Global Network of Marine Protected Areas - The Antarctic Region.

EPSING, Lars-Erik. Mutual Nordic Efforts for Planning, Preservation and Monitoring of Marine Areas.

GONZALES A., Dolores I. Propuesta para las Areas Protegidas en Especial las Zonas Costeras y Marinas.

HOLTHUS, Paul F. Marine Biological Diversity Conservation in the Central/South Pacific Realm (with emphasis on the Small Island States).

HOLTHUS, Paul F. Marine Protected Areas in the South Pacific Region: Status and Prospects.

HOYT, Erich. Designing Marine Parks for Whales: A Survey and an Assessment.

KELLEHER, Graeme, Chris BLEAKLEY and Wendy CRAIK. Strategy of a Global Network of Coastal and Marine Protected Areas.

MARETTI, Claudio C., Renato J. SALES and Guilherme Da COSTA. Coastal Management Planning as a Tool for Identifying and Augmenting the Value of Protected Areas in Less Developed Countries.

MONDOR, Claude A., Francine M. MERCIER and Miles M. CROOM. Proposed Subdivision of the Northwest Atlantic Marine Realm for Planning a Global System of Marine Protected Areas.

MORENO PEREZ, Jorge. El Parque Nacional Marítimo-Terrestre del Archipiélago de Cabrera: Herramientas de Planificación.

PEREZ NIETO, Hernan. La Ordenación y Gestión de las Areas Marinas y Costeras de Venezuela.

PUCCIA, Charles J. Competing Interests for the Marine Resources in Urban Areas.

RAMIREZ TEJADA, Omar, Sixto INCHAUSTEQUI, Lysendo PELAEZ S. and J. N. McCANN. Regional Planning for the Dominican Republic's Samana Bay and its Watershed.

SEBASTIANI, Mirady, Adriana SAMBRANO, Alicia VILLAMIZAR, Anes ZULMAR and Olivo MARIA DE LOURDES. Metodología para la Identificación de Areas Sensibles a fines de Ordenamiento Territorial, Caso en Estudio: Sector Litoral Carenero-Punta Castillito, Edo. Miranda Venezuela.

SEBASTIANI, Mirady, Alicia VILLAMIZAR and Maria de LOURDES OLIVO. Coastal Wetlands Management in Venezuela.

TSUCHIYA, Tokunosuke. Present State of Japanese Marine Parks: a Managerial/Operational aspect.

WORTH, Jeremy. The Heritage Coast Programme in the UK.



Workshop III.3

Assessing recent experience in operating UNESCO's biosphere reserves

Chair: Michel Batisse
Organizer: UNESCO
Rapporteur: Jane Robertson (UNESCO)

Overview

The workshop aimed to highlight how various countries with different economic, social, political and ecological conditions have organized the operation of the multiple functions of their biosphere reserves. Hence emphasis was given to the three major functions of biosphere reserves, namely conservation, scientific research and monitoring, and rural development, while not forgetting their demonstration role. These themes overlapped with those of the other symposia of the Congress but it was fitting that this workshop came under Symposium III on regional planning since one of the innovative aspects of the biosphere reserves is to provide a framework for coordination and cooperation for different actors with different interests in a composite area serving many — and often conflicting — purposes. Hence the experience of biosphere reserves can be considered as an example of environmentally-sound land-use planning and management, as a way of dealing with a problem which is being faced almost everywhere. The workshop therefore aimed at reviewing case studies — with their successes and their failures — of operational biosphere reserves, to synthesize what lessons could be

learned and to make recommendations for future action.

The workshop was attended by some 120 persons, although more wished to attend but could not do so due to lack of room. As the biosphere reserve network spans the earth, and the case studies were selected from five continents, participation was very cosmopolitan, with all three Congress languages being used more or less equally. Participants came from a variety of backgrounds: managers of biosphere reserves, scientists working in biosphere reserves, national coordinators of biosphere reserves, directors of national park systems in different countries, etc.

Most of the workshop was devoted to very brief presentations of the 18 case studies, highlighting the problems encountered, the solutions sought and the lessons learned. A very limited time was available for questions from the floor. The workshop then divided into three groups, each with a coordinator and a rapporteur, on the following themes:

1. Conservation, research and monitoring
2. Rural development and local communities
3. Coordination mechanisms and institutional structures.

The results of the groups were shared when the workshop reconvened at the end, and the major conclusions were summarised.

Conclusions

The major conclusion of the workshop is that the biosphere reserve concept has been widely embraced by the conservation community around the world. It is being increasingly recognized as a flexible and viable management tool for reconciling conservation with local development concerns and establishing links with different requirements for scientific research and monitoring. This global acceptance of the biosphere reserve concept has given rise to a situation where there are two kinds of "biosphere reserves": those officially recognized by UNESCO; and those designated at the national level which have adopted the combination of conservation with sustainable rural development in certain areas, but which have not yet made the step to participate in the International Network (and some have not yet established the research element required). Countries are naturally welcome to designate and operate such "biosphere reserves" at their national levels. They should, however, be encouraged to improve these sites, particularly in building up their logistic role for science, such that they could eventually be nominated and accepted in the International Biosphere Reserve Network.

The way in which countries have planned and managed their biosphere reserves is very variable within the general overall pattern. Some countries have adapted their existing administrative structures and used their existing legislation for protected areas, others have created innovative mechanisms or have established new legal frameworks. The key here is flexibility in approach in order to accommodate the complexity of facing the four major and development concerns (conservation of biodiversity, sustainable development, global change and capacity building in developing countries) within a single land area and demonstrate how this can be achieved.

The workshop made specific recommendations for the different functions and coordination of biosphere reserves as follows:

1. Conservation, research and monitoring

- Promote the establishment of biosphere reserves to conserve *in situ* genetic resources of economic importance such as wild relatives of crops or old varieties or races of domesticated animals, or soil microfauna and flora.
- Promote the establishment of biosphere reserves in areas of intense human-land interactions where other forms of protected areas may not be possible, for example in cultural landscapes or coastal areas.

- Promote the establishment of biosphere reserves with sufficient buffer zones to act as corridors capable of accommodating long-term ecological change.

- Reinforce the scientific research capacity of biosphere reserves so that they fulfil the three major functions (conservation, science and rural development) in a harmonious and synergistic fashion, noting that different types of research are required for the different functions and for national and international objectives.

- Promote research to improve the management of individual biosphere reserves. This will include both natural and social sciences, for example undertaking ecological assessments of human impacts within the biosphere reserve and its surrounding region.

- Promote basic research on ecosystem structure and function within core areas, comparative studies among biosphere reserves with comparable site characteristics, and studies on the structure, function and restoration of impoverished ecosystems in transition areas.

- Undertake coordinated inventories and monitoring of biological diversity to provide a more accurate assessment of the state of global biodiversity. For this, biosphere reserves should be used as much as possible as sites for the work planned under the IUBS/SCOPE/UNESCO joint programme on ecosystem function of biodiversity ("Diversitas"). Special attention shall be given to inventories and monitoring of species or taxonomic groups of economic importance and of bio-indicators of ecosystem health.

- Promote interdisciplinary research which will provide the basis for rural development projects aimed at diversifying and consolidating the economic base for people living within and around biosphere reserves.

2. Rural development and local communities

- Ensure the establishment of mechanisms for involving local communities and incorporating existing and/or traditional structures of authority in the planning and management processes of biosphere reserves in order to receive the support of affected populations.

- Give priority to human survival issues in biosphere reserves (e.g. due to famine, natural disasters, etc) through emergency programmes based on exploitive use of natural resources in buffer zones and transition areas.

- In most other cases, develop a variety of socio-economic opportunities for local communities, including agricultural diversification and the introduction of non-consumptive activities such as tourism.

- Promote rural development programmes that provide support to cultural, spiritual and

educational needs (in addition to economic ones) in order to stimulate forms of rural development that are sustainable and compatible with biosphere reserve objectives.

- Develop the rural development function of biosphere reserves in coordination with the other functions, for example by designing research to provide the information required to formulate appropriate rural development actions.

- Fully inform local communities of the activities being undertaken in their biosphere reserves and the benefits from them.

- Encourage bilateral, regional and international financing agencies, in cooperation with the countries concerned, to refocus rural development projects to incorporate the multiple-function approach of biosphere reserves to demonstrate the long-term ecological and economic benefits arising from developing diverse socio-economic opportunities for the people living within and around the areas concerned.

3. Coordination mechanisms and institutional structures

- Invite governments to explore innovative legal and institutional mechanisms for planning and coordinating the multiple functions of individual biosphere reserves. These mechanisms should articulate the management (usually by central authorities) of the protected core areas with those responsible for the buffer zone, together with the local authorities and the people and ethnic groups living in the transition area. In most cases, existing legislation on protected areas within a country will be adequate for the core and buffer zones but it may be necessary to formalize the existence of biosphere reserves through new legislation to affirm the necessary cooperation between the various social and economic actors concerned.

- Encourage governments to establish suitable institutional structures for coordinating their biosphere reserves at the national level, to contribute to regional cooperative initiatives based on biosphere reserves, and to participate in the functioning of the International Biosphere Reserve Network. Such national coordination structures should be organized, as appropriate, in conjunction with the MAB National Committee or focal point within each country.

- Request the Advisory Committee for Biosphere Reserves to consider furthering studies on the status and the institutional aspects of biosphere reserves and to disseminate the conclusions of such studies widely; and establishing incentives for "successful" biosphere reserves (such as an award) and disincentives for non-functional sites (such as de-listing) in order to improve the general quality and functioning of the individual biosphere reserves and the International Network.

- Endeavour to foster, among all those concerned with the development and management of biosphere reserves, a "spirit of place" or "belonging" which would facilitate long-term conservation in the biogeographic and cultural area concerned.

Outputs and Follow-up Action

- The main output from the workshop will be a UNESCO publication consisting of the full papers presented at the workshop, along with the summaries of the discussions and the conclusions of the three groups. It is planned that this publication will be available, in English only, in late 1992.

- IUCN will be invited by UNESCO to participate in the Advisory Committee for Biosphere Reserves, and joint activities will be developed between IUCN/CNPPA and UNESCO on biosphere reserves.

Papers Submitted

ALBIGNAC, Roland. Reflexions pour l'Aménagement des Réserves de la Biosphère et Site du Patrimoine Mondial.

ARANBURU ALBIZURI, Anton. La Reserva de la Biosfera de Urdaibai, España.

BANGOURA, Abdel Kader. Les Problemes de la Protection et de la Gestion de la Reserve de la Biosphere des Monts Nimba, Guinée.

BATISSE, Michel. Biosphere Reserves.

CASTANEDA, Porfirio G. Management Planning for the Palawan Biosphere Reserve.

CASTELLO i VIDAL, Joan I. and Antonio LOPEZ LILLO. Mecanismos de Coordinación en las Reservas de la Biosfera Española.

CENTENO, Hector. Reserva de Biosfera Sierra de la Minas.

CHAVARRIA CORREA, Elena. El Mar de Cortes como Reserva de la Biosfera.

DAHL, Björn. The Southern Appalachian Biosphere Reserve.

DANIELE, Claudio, Ines GOMEZ and Marta ZAS. Diagnostico Comparativo de las Reservas de Biosfera de la República Argentina.

DE OLIVEIRA COSTA, José Pedro. System Management of the Biosphere Reserve of Mata Atlantica, Brazil.

DE OLIVEIRA COSTA, José Pedro. South American IUCN Members Biosphere Reserve Task Force.

DIAMOUNGANA, Jean. Reserve de la Biosphere de Dimonoka: Bilan et Perspectives.

JARDEL P., Enrique, Gustavo AGUIRRE, Eduardo SANTANA and Gonzalo IALFFTER. Desarrollo de las Reservas de la Biosfera en México: Conservación de los Ecosistemas Áridos y Subtropicales de Montana.

JENIK, Jan. Czechoslovak Biosphere Reserves: Their Status, Function and Future.

MARETTI, Claudio C., Rui MIRANDO, Pierre CAMPREDON and Abilio Rachid SAID. The Bijagos Archipelago Biosphere Reserve: An Approach to Sustainable Rural Development in one of the World's Poorest Countries.

NAUBER, Jürgen and Doris POKORNY. Establishment of Biosphere Reserves in Germany.

RAMANGASON, Guy Suzon. La Reserve de la Biosphere de Mananara-Nord.

ROBERGE, Charles. La Reserve de la Biosphere de Charlevoix.

SANTISO, Claudia. La Reserva de Biósfera Maya - Una Alternativa para el uso Sustentable de los Recursos.

SOEDJITO, Herwasono, Kuswata KARTAWINATA, Timothy C. JESSUP and Cynthia MacKIE. The Apo Kayan-Mentarang Biosphere Reserve: A Future Conservation for Development of Dayak Community in East Kalimantan, Indonesia.

TECCHI, Rodolfo, V. MASCITTI, R. ROTONARO and D. GONZALES. Estrategias de Conservación en la Reserva de la Biosfera Laguna de Pozuelos en el Altiplano Argentino.

WATSON, John. Fostering Community Support for the Fitzgerald River National Park (Biosphere Reserve), Western Australia.

YALLICO, Luis A. La Reserva de la Biósfera del Manu.

YAYA, Sangare. Projet de Sauvegarde du Parc National de Tai - Reserve de la Biosphere et Site du Patrimoine Naturel Mondial



Workshop III.4

Protected areas managed by private organizations

Chair: Annette Lees
Organizer: IUCN (Hector Ceballos-Lascuain)
Rapporteurs: Annette Lees, Jeff Kennedy, Will Murray, Juan Black

Overview

This workshop aimed to identify the advantages and constraints of private management of protected areas and drafted policy recommendations to governments, international funding institutions and other private organizations on this issue. About 40 people attended, mostly from NGOs and other private organization backgrounds. The workshop had four sessions:

- Promotion and support for protected areas by NGOs
- Site management and ownership of protected areas by NGOs
- NGOs, local communities and protected areas
- Private enterprise and protected areas.

Conclusions

NGOs commonly bring qualities of innovation, commitment, flexibility, and a history of community-led solution-finding experiences to the complex task of successful management of protected areas. Their involvement in protected areas management allows governments to focus scarce resources on priority areas within national protected area networks. Their skills are an important complement to the role of government which provides the legislative and struc-

tural framework for nature protection activities. The NGO/government partnership needs fostering through mutual respect and resource sharing.

Policy guidelines include:

a. NGOs/private organizations and governments should work in partnership towards the establishment and management of protected areas, with governments assisting NGO activity by enabling legislation as well as financial and resource support, and with NGOs involving governments in their activities.

b. International donor agencies should recognize the benefits of non-government activities for protected areas. Donor agencies should ensure that a portion of all aid is channelled through NGOs and that funding for administration and other core activities of NGOs are given favourable consideration.

c. International donor agencies and conservation NGOs working internationally should ensure that their own agendas for nature conservation do not override those of their partner organizations who best understand the political and social constraints of their own country or region.

d. Governments and NGOs should encourage the involvement of the business sector and

provide incentives to them for supporting the establishment and management of protected areas.

The workshop recommended that:

a. NGOs/private organizations should develop multiple sources of funding to ensure they are buffered from funding fashion whims. Long-term funding support, particularly core funding, is essential to successful protected area management and it should be facilitated through a variety of funding management tools including establishing endowments and trusts.

b. To win confidence of governments and donor agencies, NGOs/private organizations must ensure that their work is of consistent high quality and that they are prepared to engage in, or at least support their government in, the difficult tasks of juggling national and community development objectives with environmental protection.

c. Support from governments for NGO/private organizations activity can be enhanced through emphasising the common objectives of nature protection and the development of jointly-administered projects which, in the experiences of groups represented in this workshop, has helped to break down suspicion and concern about their activities.

d. Site management of protected areas by NGOs/private organizations should involve local communities and build local constituencies and should keep a balance between social and ecological considerations.

e. Sound sustainable management is essential for the long-term success of any protected area. NGOs/private organizations should ensure that the protected areas they manage have a clear mission statement and a written management plan, and that resources are allocated to training both field and administrative staff, building on the results of monitoring and research. Resources also must be wisely invested in facilities and infrastructure to support management-related research.

f. It is important to communicate results and achievements of projects run by NGO/private organizations to a wide audience to build community and political support for their management of protected areas.

g. The NGO mandate to bring to public attention any inadequacies in government policy and activity is an important contribution to sound national nature protection policies and their implementation.

h. Regional and local NGOs should be as fully supported as nationally-based NGOs. Regional and local NGOs often do not have the same access to resources as national NGOs yet are involved in critically important protected area management activities.

i. Regional CNPPA members can assist with the production of national and regional booklets that give inventories of NGOs and private organizations working in protected area management as well as sources of funding available for private management of protected areas.

Outputs and Follow-up Action

a. IUCN should develop guidelines to assist governments, NGOs and private enterprises to work together for maximum effectiveness in protected area establishment and management.

b. IUCN should support the production of a handbook of private management of protected areas that details case studies of NGO/private organization activity in this field.

Papers Submitted

BRANDARIS, Carlos E. Las Organizaciones Conservacionistas en el Desarrollo de los Programas de Manejo de la Reserva de la Biósfera de Darien, Panamá.

CLARICOATES, Jane. The Management of Protected Areas by the Wildfowl and Wetlands Trust, UK.

ERIZE, Francisco. La Experiencia Argentina en Manejo Privado de Areas Naturales Protegidas.

ESCOBAR, Elsa Matilde. Colaboración de una Entidad Privada con el Estado en el Manejo de Areas Protegidas. Caso Inderena - Fundación Natura Colombia.

FARMER, Lucy. The Role of Private Enterprise in the Sustainable Management of the Kasanka National Park in Zambia.

PIERRO A., Carlos and Galo MEDINA M. Areas Naturales Privadas en el Ecuador el Bosque Protector Pasochoa: Un Estudio de Caso.

GAMMELL, Alistair and Gareth THOMAS. The Role of Private Organizations in Managing Protected Areas.

GRAU, Sergio and Rick KLEIN. The History of an International Campaign to Create Ancient Forest Preserves.

IASBUN, Carlos Roberto. Estrategias Comunes para la Conservación de los Recursos Naturales en Barra de Santiago, El Salvador.

HJELM, Klas. Privately Owned and Managed Reserves - A Swedish Example.

KALIKAWA, Mary C. Protected Areas Managed by Private Organizations: A Case Study in Central District, Botswana.

LEES, Annette. Innovative Partners: The Value of Non-Governmental Organisations in Establishing and Managing Protected Areas.

LIM, Weng Hwee. The Role of the Malayan Nature Society in the Establishment of two Nature Parks in Peninsular Malaysia.

MILAN, Vic. NGO Assistance in National Park Management: The Case of the Tubbataha Reef National Marine Park.

MUNYENYEMBE, F.E.C. Integrating Private Enterprise and Government Institution in Managing National Parks in Zambia: Kasanka National Park.

MURRAY, Will. Lessons from 35 Years of Private Preserve Management in the USA: The Preserve System of The Nature Conservancy.

PESSIS, Anne-Marie. Eco-desarrollo y Protección Ambiental: El Parque Nacional de Serra da Capivara, Sao Raimundo Nonato, Piaui, Brasil.

PESSIS, Anne-Marie and N. GUIDON. Manejo del Parque Nacional da Serra da Capivara.

ROMERO DIAS, Aldemaro. La Experiencia de Bioma en Areas Protegidas.

SALAS, Osmany E. Belize Audubon Society and Wildlands Management.

SYBESMA, Jeffrey. The Role of NGOs in Managing National Parks: The Netherlands Antilles National Parks Foundation (STINAPA) as an Example.

WALKER, Susan. How an NGO-Administered Marine Protected Area Takes an Integrative Approach to Coastal Resource Management: The Case of the Saba Marine Park, Netherlands Antilles.



Workshop III.5

Fostering stewardship

Chair: Kenneth W. Cox
Co-Chair: Ibsen de Gusmao Camara
Organizer: Kenneth W. Cox
Rapporteur: Richard W. Carbin

Overview

The concept of stewardship is fundamental to the maintenance of human and ecological diversity. In brief, stewardship means CARING for the land and the people who live on it. The interaction between people and land in an environmentally, economically and culturally sustainable way requires a full range of institutional arrangements and programs. Government alone cannot achieve this. Land owners, communities, non-governmental and governmental agencies must all be part of an active stewardship effort.

This workshop was designed to discuss in an open forum:

- The philosophy, concepts and practices of land stewardship in order to gain a better understanding of what constitutes stewardship.
- The current and planned approaches to stewardship around the world.
- The successes and problems involved with land stewardship.
- The action required by IUCN and other lead agencies to foster stewardship programmes around the world.

Approximately 50 people with varied nationalities and backgrounds participated in the workshop. Common interests among them included

helping people to understand the integrity of the land and involving them in proper management of the wild and working landscape.

The workshop was designed to allow a maximum of discussion by the participants on stewardship meaning, concepts and practices. Draft documentation on recommendations and action items were distributed for discussion purposes. The Chair, Rapporteur and six of the paper presenters met twice prior to the session to discuss and draft approaches to be used at the session. No simultaneous interpretation was available, so presentations in Spanish and English were briefly summarized by the Co-Chair where necessary.

Conclusions

While certain land areas can be allocated for minimum disturbance by people, the great majority of an ecoregion's landscape will inevitably need to sustain high levels of economic activity and ecological disturbance. Use of the land (in urban as well as rural settings) for agriculture, forestry and other purposes can, and needs to, play a key role in fostering stewardship of human and ecological resources.

Private land owners and users — be they tribal, communal, individual or corporate — must become engaged in conservation activity. To accomplish this, they must be persuaded of the need and be rewarded for the actions they undertake on behalf of the broader community. A

stewardship ethic toward the land needs to be encouraged through changes and augmentation of the principle of private or community land stewardship. Towards this end, partnerships between government and non-governmental organizations, along with people who live on the land, are essential.

All countries should adopt stewardship programmes which encourage and reward landowners who maintain conservation and heritage features and landscapes. These rewards can take many forms, including awards payments and tax relief, and can be informal or formal agreements, for a limited period or in perpetuity. Wherever ecologically possible and acceptable to the land owner a public access component should be part of the programme.

Jurisdictions wishing to retain the human and ecological integrity of a region, including their landscapes, should incorporate a private or community stewardship programmes into their protected areas strategy. For example, stewardship programmes should be included in both the overall planning framework for resource management regions, and institutionalized in the legal framework of the appropriate jurisdictional sectors, and through non-governmental structures.

The concept of stewardship should be integrated into government planning at all levels and governments should encourage the strengthening of non-governmental organizations to carry out stewardship programmes.

Stewardship programmes should reflect and incorporate a full range of stewardship techniques. Such programmes should also be incorporated as an integral part of agricultural, forestry and other land and cultural policies in order to prevent running in opposition to or separate from other public policy in support for agriculture, mineral extraction, forestry and other economic uses of resources.

Outputs and Follow-up Action

a. As the main output from the workshop, the Chair will rewrite the overview paper before final publication, incorporating the comments, concepts, and cases discussed at the workshop.

b. The Chair will also continue in the short term in conjunction with IUCN and some of the workshop participants, to compile papers on, and collect names of people involved with stewardship programmes from around the globe.

c. In the longer term, IUCN should foster stewardship concepts and programmes throughout the world. The work encompassed would include:

- Preparing stewardship guidelines based on experience around the world, using stewardship as a tool in managing protected areas and in maintaining human and ecological diversity and landscape heritage;
 - Support for building an international stewardship network and programmes of professional stewardship exchanges; and
 - Convening a conference on stewardship in 3-5 years.
- d. In cooperation with the Chair of this workshop, IUCN should establish a stewardship committee to develop an action strategy and budget to implement the recommendations.

"Tell me and I will forget
Show me and I will remember
Involve me and I will understand."
Confucius

Papers Submitted

BRANGER, Antonio J. Hato Piñero: Ejemplo de Manejo de Refugio Natural Privado en Venezuela.

COHEN, Michael. The South African National Heritage Programme: A New Partnership.

COX, Kenneth W. Stewardship: An Old Concept with New Meaning.

ERIZE, Francisco. La Experiencia Argentina en Manejo Privado de Areas Naturales Protegidas.

HJELM, Klas. Rain Forest Preservation Project in Western Samoa.

JORGE PADUA, Maria Teresa. Biodiversitas and Funatura.

MITCHELL, Brent. Stewardship: Managing Private Lands as Protected Areas in Northeastern North America.

NAUBER, Jürgen and Doris POKORNY. Establishment of Biosphere Reserves in Germany.

ROBERTS, Brian R. The Land Care Movement in Australia as a Basis for Rangeland Extension.

RUBEC, C.D.A., A.N. TURNER and E.B. WIKEN. Integrated Modelling for Protected Areas and Biodiversity Assessment in Canada.

WARNE, A.C. and F.B. O'CONNOR. Managing Nature Reserves in Private Ownership: The British Experience.

WORTH, Jeremy. Protected Areas and Agriculture: Breaking New Ground.



Workshop III.6

National legal strategies

Chairs: Parvez Hassan, Nicholas Robinson
Organizer: IUCN Environmental Law Centre
Rapporteurs: Lothar Gundling, Thomas McHenry

Overview

The aims of the workshop were to:

- Survey global developments in legal strategies for the establishment and management of protected areas, including conventional land-use restrictions on private land, methods for securing the participation of local communities, innovative non-site-specific conservation instruments and the integration of conservation and land use planning.
- Identify successful legal techniques capable of broader application and determine the need for training and information.

About 100 persons attended the workshop with backgrounds in government, universities, private law firms, non-governmental organizations and research institutions. Participants attended from about 40 countries in all the regions of the world. Thirty-three papers were delivered in five sessions which addressed:

- Conventional conservation instruments
- Participation of local communities
- Innovative conservation instruments
- Protection of habitat types
- Integrating conservation and land-use planning.

Conclusions

National constitutions should contain provisions imposing conservation duties on governments and citizens.

States should adopt natural resource policies and, in particular, take into account indigenous and customary resource management practices. States should ensure effective public participation in the planning and management of protected areas.

States should develop innovative legal techniques for conservation including contracts, easements, economic incentives and non-site-specific measures, aimed at the protection of habitat types.

Planning laws should be established and supported so as to ensure that the requirements of

protected areas management are taken into account in all development planning procedures.

States should establish environmental impact assessment procedures which at a minimum:

- Provide for public notice and comment.
- Examine the cumulative impacts on the environment.
- Provide special procedures for activities which may have impacts on protected areas.
- Impose stricter requirements on activities which are in or adjacent to protected areas.
- Require the selection of the alternative which avoids impact on a protected area.
- Provide post-project monitoring.

Establishment, conservation and management of protected areas should be facilitated and strengthened by:

- Increasing the information on possible legal tools and techniques.
- Providing mechanisms so that laws can be readily known, understood, implemented and enforced.
- Improving the legal and training of legal and management professionals and other relevant individuals.

International cooperation should be increased so as to assist States to:

- Provide environmental legal education and training.
- Prepare, adopt, improve and implement protected area policies and legislation.
- Establish and maintain adequate institutions to implement and enforce these policies and laws.
- Obtain information on case studies of successful legal tools for conservation.

Outputs and Follow-up Action

a. The IUCN Environmental Law Centre will rapidly issue the proceedings of the workshop. In addition, the following activities and products are proposed:

- Study on contracts for conservation.

- Study of and workshop on customary law and indigenous resource management practices.
- Study of and workshop on land tenure issues as they relate to conservation.
- Legal guidelines for public participation in the management of protected areas.
- Handbook on legal tools required for the implementation of the recommendations and strategies of "Caring for the Earth".
- Handbook on basic procedures and requirements for environmental impact assessments.
- Information on successful case studies on legal strategies for area conservation.

b. The IUCN Environmental Law Centre will also develop more extensive networks of environmental lawyers and closer interaction with protected area managers in order to increase the flow of information on legal and policy issues.

Papers Submitted

de KLEMM, Cyrille. Area-Based Conservation and the Law.

DE QUEIROZ, Sandra M. and Robert DILGER. Evaluación de los Impactos Ambientales en Países en Desarrollo: Una Estrategia para Financiar y Realizar metas Conservacionistas?

GAMMELL, Alistair. The European Community's Directive on the Conservation of Natural and Semi-Natural Habitats and of Wild Fauna and Flora (The Habitats Directive) as it affects Protected Areas.

HASSAN, Parvez. Bringing in the Law: Legal Strategies for Integrating Habitat Conservation into Land-Use Planning and Management.

HENKE, Hanno. Integrating State-Wide Habitat Surveys into Land-Use Plans in the Federal Republic of Germany.

HENKE, Hanno. New Non-Site-Specific Instruments for Habitat Protection in the Federal Republic of Germany.

HERNANDEZ DE GOMEZ MANTELLINI, Norma. Contribución de la Legislación a la Conservación de Áreas Protegidas.

ILEANA, Napoleone and Palladino SALVATORE. Espaces Protégés en Italie: Comparaison entre les Orientations Régionales.

JOULIA, Horacio. El Proyecto de Ley de Áreas Naturales Protegidas, la Provincia de Río Negro, Argentina.

LEDEC, George and Douglas MASON. The World Bank's Wildlands Policy: A Tool for Incorporating Protected Areas within the Design of Development Projects.

LLEWELLYN, Othman A. Conservation in Islamic Law.

MACHADO CARRILLO, Antonio. España: Nuevas Medidas de Planificación y las Evaluaciones de Impacto Ecológico en Relación con las Áreas Protegidas.

MESSER, Judy. Sydney's Green Lungs: Urban Bushland, Community Commitment and the Legal Form.

MOLINA VASQUEZ, Fernando and M. GRANADOS CORONA. La Gestión de los Espacios Naturales Protegidos en Andalucía, España.

N'SOSSO, Dominique. Contribution du Consultant de la Commission des Parcs Nationaux et des Aires Protégées (CPNAP) de L'UICN.

OVALLES, Omar. La Viabilidad de la Declaratoria de las Áreas Bajo Régimen Especial en Venezuela.

SALIFOU, Mamadou. Stratégies Juridiques pour Intégrer la Conservation des Ecosystèmes dans les Plans d'Occupation des Sols.

SIMONCINI, Andrea. Ecosystem Conservation in Land-Use Planning: The Dialectic Between Central and Regional Policies in the Italian Legal Model.

TOLENTINO Jr., Amado S. The Proposed Integrated Protected Areas Law of the Philippines.

ZEBA, Souleymane. Aires Protégées et Legislation.



Workshop III.7

Protected areas systems planning

Chair: Harold Eidsvik
Co-Chairs: Bruce Jeffries, Carlos Weber
Organizer: IUCN (Jeff McNeely)/Department of Environment/
Canadian Parks Service
Rapporteur: Graham Drucker

Overview

The aim of this workshop was to prepare a state-of-the-art review of protected area systems planning, as a means of promoting systems plans in all countries.

Over 100 delegates participated in the workshop. The first session covered papers on ecological frameworks, "gap" analysis and endangered species, followed by a discussion. The second session covered papers on institutional, political and public involvement. The third was on biological and abiological planning considerations, followed by discussion on a wide range of topics. In the fourth session, the workshop reviewed recommendations and carried on with further presentations from around the world. In the fifth and final session, with a reduced audience of about 50 participants, the workshop became a more open forum for a series of brief presentations and dialogue.

Before the 1960s most protected areas had been selected to protect outstanding scenic or aesthetic resources or to protect the habitats of mammals and birds with a high public profile, or to provide outdoor recreation opportunities. In essence, until the early 1960s "protected areas systems planning" was non-existent. During the late 1960s and early 1970s biogeographical principles began to be recognized as a foundation for systems planning. In the 1980s concepts such as sustainable development, island biogeography, population dispersal and extinction theories ultimately evolved into the current focus on biodiversity.

Conclusions

Protected areas systems plans incorporating all of IUCN's categories were seen as a fundamental requirement for effective land-use planning in all nations.

The workshop recognized that humans and nature are intricately interwoven and that nature is our heritage which we hold in trust, as stewards for future generations. Protected areas are

but one element in the variety of mechanisms needed to conserve nature. *Ex situ* approaches, more effective land-use planning and increased political awareness and commitments are also essential to meeting heritage protection goals.

The workshop recognized that sound or effective management principles applied to protected areas must be extended to adjacent lands and showed in effect that these principles could be applied to the full spectrum of a nation's land and sea resources.

The workshop strongly supported the need for a systematic approach to expanding the current network of protected areas (the subject of workshop III.8). An effective protected area systems plan is:

- Cost effective
- Ensures representation of major ecosystems and biogeographic regions
- Provides a political mechanism for marketing conservation
- Effective tool for public involvement
- Builds commitment from many sources

When asked "how much is enough?" workshop participants agreed that 10 percent is a pragmatic political response in the light of the value of protected areas for enhancing sustainability and the quality of life. While countries should be encouraged to exceed this figure wherever possible, the protected areas of the world should be expanded to this minimum to ensure that future generations may enjoy the full richness of the Earth's bounty.

The workshop recommended that:

- a. Protected areas systems plans involve the institutions which have responsibility to implement them as well as the "public constituency" with vested or other interests.
- b. Protected area system plans be developed within a legal and regulatory framework which empowers organizations to carry out and implement plans that evolve through the consultation process.

c. Protected areas be planned within a framework which recognizes that they are a part of a national or regional land/sea-use plan. The protected area system plan may be a component of a larger planning operation or it may be focused specifically on protected areas as a contribution to a larger scheme.

d. Comprehensiveness and flexibility as watchwords of the planning process.

e. An essential part of the planning process be "gap analysis", which requires a review of the existing protected area networks and the identification of species or ecosystems not represented. Contemporary and evolving techniques of computer mapping and biodiversity analysis at the broadest habitat and species level are an essential input into systems planning.

f. Contemporary values related to scenery, aesthetics, uniqueness, outdoor recreation, local and regional economic contributions be seen as essential elements in building political awareness and public support for protected areas.

Outputs and Follow-up Action

A steering committee has been established to prepare a set of guidelines describing planning procedures with specific case studies to highlight issues. The resulting publication will be issued by IUCN.

Papers Submitted

- ABUZINADA, Abdulaziz H., Graham CHILD and John GRAINGER. The Approach to Planning and Initiating a System of Protected Areas in Saudi Arabia.
- ANDERSON, Susan. The Development of a Plan for a System of Protected Natural Areas for Jamaica.
- ARDURA, Fernando and Rudolf BURKART. El Sistema Nacional de Areas Protegidas de la Argentina.
- A-S-SAQUI, M. and A.K. GHOSH. The Status of Protected Areas and Environment in Bangladesh.
- BARNAUD, Genevieve. Evaluation et Recommendations pour la Conservation des Zones Humides Francaises.
- BENTEZARIAS, Manuel. Planificación de un Sistema de Areas Protegidas bajo Condiciones Criticas: La Experiencia Singular de El Salvador.
- BRIGHT, Jay W. Guidelines for Protected Area Systems Planning.
- CAZZADORI, Ana. Estudio Ambiental Nacional: Selección de Areas Silvestres para Integrar un Sistema Nacional de Areas Protegidas.
- DEE, Wilbur G. Experiences in Designing the Philippine Integrated Protected Areas System (IPAS).
- DJEDJE, Bagnou. La Strategie de Conservation des Aires Protegees en Cote D'Ivoire.
- DUFOUR, Jules. Les Parcs au Quebec, Canada. Bilan et Perspectives pour les Annees 90.
- EDROMA, Eric L. Protected Area Systems Plans: Overview of Uganda National Parks.
- EIDSVIK, Harold K. Discordant Harmonies: The Myth of Nature as a Symphony.
- ESPING, Lars-Erik. Mutual Nordic Efforts for Planning Preservation and Monitoring of Marine Areas.
- FOSTER, John. National Parks for Scotland - A New Chapter?
- FRISEN, Rune. The Swedish National Nature Conservation Strategy.
- GABALDON, Mario. Decisiones Conservacionistas en el Sistema de Parques Nacionales Venezolano: Cuatro Casos de Estudio.
- GARCIA, Jose R. and Mario GABALDON. Evolución y Consolidación del Sistema de Parques Nacionales Venezolanos.
- GARCIA, Rafael E. Un Subsistema de Areas Naturales Protegidas para el Territorio Federal Amazonas (TFA).
- GREEN, Michael J.B. Designing a Minimum Protected Areas Network to Conserve Sri Lanka's Biological Wealth.
- HACKMAN, Arlin. Endangered Species: How an NGO can Prepare a Systems Plan.
- HADDANE, Ibrahim. National Parks and Protected Areas in North Africa: Strategy, Management and Economic Aspects.
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- MACHILIS, Gary E. and Deborah FORESTER. Extended Gap Analysis: A Technique for Biodiversity Management of Protected Area Systems.
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- MARGULES, Chris R. and I.D. CRESSWELL. The Scientific Basis for Establishing Systems of Protected Areas at the National Scale.

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ORMAZABAL, Cesar S. The Conservation of Biological Diversity in Chile.

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WANG, Menghu and Zhiyong FAN. Significant Status of Nature Reserves of China in Protecting Species Diversity.



Workshop III.8

Expanding the world's network of protected areas

Chair: Kenton Miller
Organizer: IUCN (Jeff McNeely)
Rapporteur: Robert Pressey

Overview

This workshop was designed to:

- Review the current status of the global system of protected areas.
- State the goals of the global network of protected areas, with special reference to the conservation of biodiversity, and taking into account the implications of global change.
- Propose methods for site identification, selection and prioritization.
- Orient future actions and investments.

Attendance averaged 75 during the three sessions, including scientists, protected area officials responsible for planning and management, NGO officers, and development assistance

specialists. The workshop was held in all three Congress languages.

The workshop featured general plenary sessions, three panels (Science and Methods, Biome Experience and National Systems Reviews), and four working groups: Caracas Declaration; Recommendations; Caracas Action Plan; and Guidelines for the Expansion of the World Network.

Conclusions

Despite the growing recognition of the importance of national parks and other categories of protected areas worldwide, for both natural and cultural values, less than 5 percent of the planet's surface is afforded protection under IUCN categories. More important, there is a major imbalance in attention given to the various biogeographical regions, including key habitats

and ecosystems. Therefore, urgent action is needed to address this problem by:

- a. Developing an internationally recognized set of guidelines for evaluating present coverage of protected areas.
- b. Identifying major gaps in this coverage.
- c. Setting targets to fill these gaps, such as establishing at least one viable representative site in each ecological unit.

The workshop recommended the following policy statements:

- a. In achieving full representation of each nation's diversity the global network of protected areas should cover at least 10 percent of each biome by the year 2000.
- b. Conserving biodiversity is to be considered an explicit and major objective for the selection and management of protected areas.
- c. Comprehensive information on all levels of natural diversity is to be developed to guide the identification of those sites of greatest value to biodiversity conservation.
- d. The selection of new protected areas must be rigorous in the application of scientific guidelines to ensure efficiency in the use of natural and financial resources.

In expanding the global network of protected areas, governments, international organizations and NGOs should follow these guidelines:

- a. Natural diversity exists at many levels of organization, from biomes to intraspecific variation; the expansion of protected areas should be directed at representing natural diversity at all levels.
- b. Recognizing that proposals will be adjusted to meet the needs of local people, the most important criteria for selection of new protected areas within any region are:

- **Complementarity:** new protected areas should, as far as possible, complement existing protected areas in terms of the biomes, ecosystems, habitats, species and intra-specific variation features already protected;
- **Irreplaceability:** irreplaceable sites should form the core of any network of protected areas. Irreplaceable sites are those with one or more unique features; or critical resources or connections such as spawning grounds, drought refuges, keystone food supplies or migratory routes;
- **Efficiency:** maximizing the coverage of natural diversity by protected areas for a given level of investment in local, regional, national and international contexts.

Application of these principles should recognize that a variety of factors will affect the design

and management of selected areas; these include threats, management constraints and the needs of local people.

c. The conservation of biodiversity should be made an explicit objective for the selection and management of protected areas, recognizing that other factors, such as aesthetic, scientific and recreational values and the needs of local human populations, are also to be taken into consideration.

d. Therefore, existing and future areas should be evaluated against the goal of representativeness; all natural features in a country or region should be adequately covered within protected areas. Representativeness based on broad regional classification is appropriate, but the hierarchical nature of natural variety, from biomes to individual populations, must underpin the selection and management process. Protected areas which represent a broad natural region can still fail to protect many habitats and species. Protected areas should therefore incorporate all levels of natural diversity — biomes, ecosystems, habitats, species, and intra-specific variation.

e. Identification of natural variability at the level of taxa and populations is very incomplete in some parts of the world and is not comprehensive. Conservation of biodiversity therefore requires an immediate and major commitment by each country to describe the biological variation within each of its natural regions. These programmes should refine information on natural variation as a matter of urgency and progressively extend the coverage and detail this information in the long-term.

f. The conservation of biodiversity requires the selection of new protected areas to be a rigorous, scientific process. The remaining opportunities for establishing protected areas are limited. Therefore, selection based upon opportunism and *ad hoc* decisions can jeopardize the eventual achievement of conservation goals, even where very comprehensive data on natural diversity is available.

Outputs and Follow-up Action

a. IUCN, with the support of the Chair and Rapporteur should prepare a publication based upon the materials and discussion resulting from this workshop.

b. IUCN is urged to promote and sponsor continuing research and development of criteria and guidelines for the selection and management of protected areas for purposes of conserving biodiversity. This should be considered in the context of the programmes of the relevant commissions and other programmes of the Union. Meetings of specialists could be held to further define and articulate criteria and guide-

lines based upon science, management practice and ongoing experience from the field.

c. IUCN is urged to promote and sponsor training courses for professionals on selection procedures for the incorporation of biodiversity into protected areas management. This should be further enhanced by establishing mechanisms for exchange of information and communications on this subject.

Papers Submitted

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BIBBY, Colin and Miriam LANGEVELD. Priorities for Protected Areas in Europe: The ICBP/WRB Important Bird Areas Programme.

DEBRITO, Marcia A., Julio C. DALPONTE, Guilherme A. BORGES and Claudia SOBREVILA. Propuesta de Areas Protegidas Potenciales para la Conservación en el Estado de Mato Grosso, Brasil.

DIETERICH, Fritz. National Parks in the new Länder of the Federal Republic of Germany.

FERREIRA LINO, Clayton. National Parks and the Protection of the Speleological Legacy of Latin America.

GHERSI, Fernando. Analisis de la Efectividad del Sistema de Areas Protegidas del Perú en la Conservación de Diversidad Biológica.

GREEN, Michael J.B. and Mark N. COLLINS. Assessing the Distribution and Status of the World's Tropical Forests.

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HUMPHRIES, C.J., R.I. VANE-WRIGHT and P.H. WILLIAMS. Systematics and the Global Biodiversity Strategy.

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JONES, T.A., P.J. DUGAN and H. LETHIER. Internationally Important Wetlands and Protected Areas: Status and Outlook with special reference to the Ramsar Convention.

KELLEHER, Graeme, Chris BLEAKLEY and Wendy CRAIK. Strategy of a Global Network of Coastal and Marine Protected Areas.

KRIWOKEN, Lorne K. Antarctic Terrestrial and Marine Protected Areas: How far from Completing the System?

McCLOSKEY, Maxine. Protected Areas on the High Seas, and the Case for Marine Wilderness.

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NORD-VARIHAUG, Olav. Plans for new National Parks and other Protected Areas in Norway.

PRESSEY, Robert L. New Procedures for Reserve Selection in New South Wales: Maximising the Chances of Achieving a Representative Network.

PRESSEY, Robert L., I.R. JOHNSON and P.D. WILSON. Reserve Networks as Combinations of Sites: Implications for Measuring the Potential Contribution of Sites to a Conservation Goal.

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SCHUBERT, Andreas and Gloria SANTANA. Selecting Sites for Protection to Improve the Representation of Biological Diversity: A Case Study from the Dominican Republic.

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WILLIAMS, P.H. Afro-tropical Antelopes: A Progress Report on Assessing Priorities amongst existing Conservation Areas in relation to Antelope Biodiversity.

WILLIAMS, P.H., R.I. VANE-WRIGHT and C.J. HUMPHRIES. Measuring Biodiversity for Choosing Conservation Areas.

WORLD CONSERVATION MONITORING CENTRE. Sample Statistics on Protected Areas.

WRIGHT, Shane and Annette LEES. Recommendations for Workshop III.8, Expanding the World's Protected Areas Network.

WRIGHT, Shane and Annette LEES. Making Science Useful: Rapid Assessment Procedures that face Reality and Value Culture.



Workshop III.9

Corridors, transition zones and buffers: tools for enhancing the effectiveness of protected areas

Chair: Mario Gabaldon

Organizer: IUCN (Jeff Sayer)

Rapporteurs: Charles Flink, Jeff Sayer, Manuel Ruiz Perez

Overview

The aims of the workshop were to:

- Review the state of development of the theory and practice of habitat corridors and buffer zones; and
- Develop guidelines for the practical application of these conservation tools.

The workshop was attended by up to 50 people, including biologists and protected area professionals from Australia, Costa Rica, India, Indonesia, Mexico, Peru, Philippines, Poland, Spain, Sri Lanka, Uganda, United Kingdom, United States and Venezuela. In the first session, papers were presented on corridors, in the second session these were discussed, and in the third session papers on buffer zones were presented.

Conclusions

1. Corridors

The workshop recommended that protected area managers review the long-term population viability of organisms and ecological processes within existing or proposed protected areas. Where it is determined that resident populations and ecological processes are not viable then consideration should be given to linking protected areas that have historically been connected with corridors.

Corridors will vary in terms of length and width and therefore protected area managers will need in many cases to work with various government and non-governmental organizations in a regional land-use planning process. A continuous monitoring process will be needed to accompany the establishment of a corridor to ensure that it functions effectively, in particular because of the problems of climate change. The workshop concluded that:

- a. Most protected areas around the world are too small to maintain viable populations of many resident species and critical ecological processes in the long term, but fragmentation and island biogeographic studies indicate that

corridors will reduce adverse island effects of protected areas.

b. The need for habitat corridors should increase in the future due to climate change.

c. Proper establishment and maintenance of corridors will require a commitment of resources, and may require more sophisticated management than the adjacent protected areas. Needs should be carefully evaluated in the context of competing claims on scarce conservation resources. Incentives and planning systems should be sought to enable corridors to be developed on private or community land.

d. Species conservation objectives must be clear and corridors designed on the basis of knowledge of the ecology of target species.

e. Many governments will be reluctant to meet the costs of maintaining corridors for purely biological reasons but landscape and amenity considerations may be useful in justifying investments in corridors.

f. Research and monitoring of the biological functioning of corridors should be expanded.

g. Restoration of degraded habitats to link fragmented habitats will be required in many cases.

2. Buffer zones

The workshop considered that initiatives on buffer zones have often not been based on a sound understanding of social and economic issues and have not applied the lessons learned from rural development. They have sometimes competed for resources with conventional approaches to the management of core areas.

The workshop recommended that the first priority for protected area managers must be to secure full control of the core area and apply protection legislation rigorously. Subsequently a variety of buffer zone initiatives may serve to compensate local communities for loss of access to resources, thus diminishing conflict with protected area objectives.

The workshop also recommended that all agencies ensure a balance between protection of core

areas and compensating development activities in surrounding areas.

Outputs and Follow-up Action

- A core group from the workshop will develop practical guidelines for the design, establishment and management of habitat corridors. As a contribution to these guidelines, workshop participants were invited to prepare short (1000-word) case studies. IUCN's Forest Conservation Programme will then coordinate the production of a publication with the Guidelines and case studies.
- As with the habitat corridors, a working group will be established to develop guidelines and case histories on buffer zones for publication, coordinated by IUCN's Forest Conservation Programme.

Papers Submitted

- BANDARATILAKE, H.M. Buffer Zone Management in Sinharaja World Heritage Forest, Sri Lanka.
- CANAS, Jordi. El Parque de Collserola: Un Espacio Protegido en un Contexto Metropolitano.
- CIFUENTES ARIAS, Miguel. Establecimiento y Manejo de Zonas de Amortiguamiento.

KOZLOWSKI, Jerzy, Danuta PTASZYCKA-JACKOWSKA and Anne PETERSON. Buffer Zones for Protected Areas: A Planning approach.

OCHOA G., Jose, Ramiro SILVA and Clemencia RODNER. Propuesta de un Sistema de Areas Naturales Protegidas en Bosques Productores de Maderas de la Guayana Venezolana.

O'CONNOR, Brian, C.A. GALBRAITH and S.M. DAVIES. The Role of Protected Areas in the Conservation of Widely Dispersed Species.

SCHLIAS, John and William SHAW. Understanding Land Use and Natural Resource Decision of Park Neighbors.

SUMARDJO, Tony, SUMARSONO and Titus SARIYANTO. Management of Protection and Production Forests and Industrial Forest Plantation as Buffers for Protected Areas in Indonesia.

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VALLARINO B., Oscar. Finca Agroforestal Demostrativa Rio Cabuya Manejo de Zonas de Amortiguamiento en la Cuenca Hidrografica del Canal de Panama.

WORAHI, Sejal. Design and Management of an integrated Protected Area Network in a Tropical Deciduous Forest in Gujarat, India.

YERENA, Edgard and Luis ROMERO. Corredores de Dispersión en los Parques Nacionales de Venezuela.

- Identify the lessons learned from around the world.
- Use these lessons to review the guidelines published in 1990 and, where necessary, to update the guidelines.
- Provide recommendations and proposals for IUCN follow-up.

Three sessions were held with an average of 35 persons representing all parts of the world. Two seminar sessions were held followed by a review of submitted documents. Existing guidelines were compared, proposals were drafted and conclusions were summarized in a final session.

Conclusions

Border zones often retain greater ecological values than comparable areas in the interiors of countries. A compelling reason for the creation of border protected areas is to provide protection to complete ecosystems, mountain ranges, river basins, and other such large systems as well as to bring together ethnic groups split by political boundaries. It was stressed, however, that there are limitations in ecosystem planning when dealing with issues of pollution, water catchment area management and species management.

A long list of benefits of bi-national management and cooperation emerged from experiences in North and South America, Europe and Australia include:

- Sustainable development of border regions within national planning systems.
- Wildlife and genetic pool maintenance.
- Species management particularly migratory patterns and flyways.
- Integrated tourism management.
- Human settlement development and population management.
- Resource and area acquisition.
- Water basin management.
- Fire control.
- Poaching control.
- Cooperative research policies.
- Information and GIS exchanges.
- Joint staff training and exchanges.
- Increased opportunities for environmental interpretation and education.

The notion that border protected areas are "areas showing geographical continuity through the establishment of two or more protected areas in neighbouring countries" was given a network perspective in both Western and Eastern Pacific and Atlantic flyways systems.

The crucial need to work closely with local communities has the effect of minimizing irra-

tional local resource exploitation, easing cross-border tensions, raising public awareness and motivating residents and staff.

In some cases, border protected areas have served as "peace parks" and have decreased political tensions and national conflicts. An example from Africa showed how a border protected area providing 'peace' for animal populations escaping human conflict was planned by alternatively switching countries.

The majority of border protected areas are created by governments (national, state, provincial). However, initiatives have been undertaken by international bodies in collaboration with NGOs (Ecological Bricks of Eastern Europe) and NGOs in collaboration with local communities (Belize/Guatemala).

The usefulness of anchoring the border protected areas into regional and international conventions, agreements and protocols was stressed. Examples are the Amazon Treaty, the Costa Rica/Nicaragua Agreement on Border Areas, the Czechoslovak/Polish Krakow Declaration, the Western Hemisphere Shorebird Reserve Network, the World Heritage and Ramsar Conventions. If ready-made agreements are not appropriate new ones should be formulated.

To work well, border protected areas must have the appropriate institutional structures and, above all, legally-binding regulations and compatible legislation between the border countries. The range of institutions created varied widely from parks liaison committees and bi-national committees to more elaborate interstate cross border management groupings, and to complex linkages of international committees, national committees (bringing in ministries and international funding agencies) and local bodies. One initiative has spawned region-wide series of interlocking committees and trusts at international, national and site levels.

Border protected areas may be better placed than other protected areas in attracting international funding. Examples were given of such cases in Central Europe (GEF), Central America (bi-laterals) and South America (World Bank and G7). However, the existence of international recognition for a particular site does not necessarily assist in the site becoming a border protected area.

A 'domino-effect' has been noticeable where one side designates an area followed by the other, one side upgrades the protection followed by the other and so on.

The inclusion of an agenda item on transboundary protected areas should be mandatory in all CNPPA Regional Review meetings.



Workshop III.10

Transboundary protected areas

Chair: Jan Cerovsky
Vice-chair: Manuel Benitez
Organizer: IUCN (Zbigniew Karpowicz)
Rapporteur: Zbigniew Karpowicz

Overview

Since 1985, 70 border parks in 65 countries have been identified and major meetings on the subject have been held in Central America, South America, North America and Africa. The most extensive application of border protected areas has been in Europe where one-third of the 800km border of Czechoslovakia has been designated as protected areas.

Many more sites have the potential to become border protected areas but it appears that the majority of existing border protected areas

have yet to work well in practice, even those sites recognized under international conventions.

The challenge remains to declare more border protected areas, to get the existing border protected areas in operation and managed well through compatible planning and enhanced cooperation particularly with the local communities.

The workshop aimed to:

- Critically review the list of transboundary protected areas (TBPAs) as drafted by the WCMC and presented to the meeting.

Outputs and Follow-up Action

- a. The List of Transfrontier Protected Areas needs to be updated and revised by WCMC. WCMC should investigate the inclusion of a definitive list of transboundary protected areas in the next edition of the UN LIST.
- b. Revisions and additions should be made to the Promoting Effective Management of Transfrontier Parks and Reserves Guidelines as it appeared in Parks on the Borderline (1990). The revised guidelines should be published in the IUCN Bulletin and/or PARKS as well as in language editions of regional publications.
- c. WCMC should prepare a Directory of Transboundary Protected Areas of the World. The sites described should be clearly defined to include existing international transboundary sites and those in preparation, as well as a careful selection of cross-state and cross-province protected areas where a legal basis to their complementarity exists. Key elements of the information to be included are the dates of legal establishment, the details of the conventions, agreements and protocols applying and the budgets of the transboundary protected areas.

Papers Submitted

BENÍTEZ ARIAS, Manuel. Integrando una Responsabilidad Compartida: Los Esfuerzos de Conservación del Área Natural de El Trifinio, El Salvador.

CASTANO URIBE, Carlos. Programas y Estrategias para el Manejo del Sistema de Parques Nacionales de Colombia.

CEROVSKY, Jan. The Importance and Management of Frontier Parks and Protected Areas: A Central European Case Study from Czechoslovakia.

CEROVSKY, Jan. Transboundary Protected Areas: Opportunities for Planners, Managers and Politicians.

ENEMARK, Jens A. The Trilateral Dutch, German and Danish Cooperation on the Protection of the Wadden Sea.

FAY, Mike. Kluane/Wrangell-St. Elias: Joint Management of North America's Largest Wilderness.

GOOD, R.B., I.H. WEIR, B.H. LEAVER, A. TURNER and N.C. GARE. The Australian Alps National Parks: An Inter-State Cross-Border Management Program.

KANIAK, Vitor Carlos. Manejo de Areas Protegidas Fronterizas en la Amazonia, Brazil.

MARCHETTI, Beatriz. Areas Protegidas Transfronterizas de América Latina.

PINTOR PERALTA, Dilver O. Parques Nacionales Fronterizos en Darien Colombo-Panaméño.

SUMARDJA, Effendy A. Proposed Transfrontier Reserves in Borneo Between Indonesia and Malaysia.

SUMARDJA, Effendy A. and Toga SIALLAGAN. Transfrontier Reserves in Borneo and ASEAN.

WEIDMANN, Sonia M. Pereira. La Cooperación Internacional entre los Parques Nacionales Fronterizos.

WESEMULLER, Holger. A Common Future for the Wadden Sea: A Report by the World Wide Fund for Nature.

WESTING, Arthur H. Transfrontier Parks for Peace and Nature.

ZINKE, Alexander. Ecological Bricks for Europe: Integration of Conservation and Sustainable Development along the Former East-West Border.



Workshop III.11

Data management for regional planning

Chair:

Organizer:

Rapporteurs:

R. Norberto Fernández, UNEP-GRID

IUCN-WCMC-UNEP

Jeremy Harrison; Bruce Stein, and Eric Howard,

Overview

Individuals and organizations directly involved in the establishment and management of protected areas and systems need information on which to base their decisions. To service these needs, information must be accessible to those who need it, integrated with other relevant information, and available in a form that is useful.

Other individuals and organizations at global, regional and national levels require information on protected areas in order to carry out their own activities, many of which are supportive of protected areas.

This workshop aimed to discuss those issues involved in data management at regional level:

- Aggregation of data from the national to the regional level.
- Institutional issues associated with data management.
- Problems involved in making data available to the decision-makers.
- Harmonization of data generated at different scales and through different methodologies.

Approximately 40 people attended this workshop, from a wide range of countries. Their backgrounds were diverse, and included representatives of government agencies and NGOs dealing with protected areas, universities, international organizations, private consultants and students.

The workshop was divided into three sessions. The first was devoted to presentations provided the basis for discussion groups during the next two sessions. The attendees were divided in two groups, one for issues related to data management and technology, and the second for institutional issues related to data management. A plenary was held during the third session to

unify opinions and conclusions prior to writing the workshop's recommendations.

Conclusions

Protected area and protected area system managers should:

- Identify the minimum information required for efficient management of the areas and the systems.
- Identify the best means of acquiring data and managing information given the limitations of time and budget.
- Identify where this information can be obtained, and implement programme to obtain it, including the development of inter-area and inter-agency agreements on cooperative exchange of information.
- Establish programmes for obtaining through research and monitoring, in collaboration with other resource users, where relevant information is not available.
- Foster improved information management and use at the site level by providing guidelines on minimum requirements, development of information strategies, information management techniques and information exchange.
- Foster increased application of information for management of protected areas through developing financial, legal and institutional incentives for use and exchange.

Other resource use and planning sectors should:

- Incorporate available information on protected areas into their own planning exercises.
- Assist protected areas authorities to collect relevant information where this is not available.
- Provide relevant information to protected area management agencies and other individuals involved in protected areas planning and management.

Information management at the national level should be given high priority. National (and/or local) information managers should:

- Provide assistance to protected area management authorities in developing and using information.
- Identify potential information users and develop effective outreach programs.
- Participate in the open exchange of information.

International organizations involved in protected area information management should:

- Establish guidelines on minimum requirements, development of information strategies, information management techniques, and classifications of information and information exchange.
- Promote the harmonization of information to facilitate its exchange among institutions and to provide a global and regional context for national-level activities.
- Promote improved communications and coordination among institutions (e.g., through regional workshops on information acquisition, analysis and dissemination or establishment of information networks).

Outputs and Follow-up Action

No publication is planned from this workshop. Follow-up action rests especially with WCMC and UNEP.

Papers Submitted

BEARDSLEY, Karen, Jeffrey STAR and John E. ESTES. A Geographic Information Systems Approach to Mapping Protected Areas for North America.

BEVILACQUA, M., E. FOLDATS, N. MEDINA and Z. SZABO. SIPANA: Un Sistema de Información sobre los Parques Nacionales y Monumentos Naturales de Venezuela.

CROZE, Harvey and Norberto R. FERNANDEZ. GRID: International Data Management for the Environment.

ENVIRONMENTAL SYSTEMS RESEARCH INSTITUTE. E.S.R.I. Conservation Program Statement.

HOWARD, Eric S. An Information System for Exchange of Legal and Policy Experience.

NYQUIST, Maurice O. An Integrated Remote Sensing/GIS approach for Resource Assessment and Management in the US National Park Service.

PARDIL, Silvia. Estado Actual de la Conservación de la Vegetación Natural de Venezuela.

SUGIO, Shintaro. A Computer System for Environmental Management Plans.

prevent unscrupulous decision-makers from acting contrarily to national and global interests.

Development projects should use techniques that minimize impacts and maximize the conservation of biodiversity, including the search for viable alternatives and the formal declaration of new protected areas nearby.

In some countries, the political or practical limits for extending protected areas have been reached. Additional conservation opportunities exist, however, in areas legally designated as production forests. Lands managed by forestry institutions for timber and other forest products are often of great value for nature conservation. The "ITTO Guidelines for Sustainable Management of Tropical Forests" suggest methods for raising timber management to a high standard. Forestry officials should prepare operational guidelines, based on those provided by ITTO, for their respective countries and regions.

Further environmental benefits can be obtained by following the proposed "ITTO Guidelines for Biological Diversity Conservation in Managed Tropical Forests," which were developed in collaboration with IUCN. Once the basic requirements for sound management have been established, additional modifications of forestry practices will be less difficult to implement. Well-managed production forests will complement the management objectives of the protected areas to which they are adjacent.

Forestry institutions should be reoriented so as to make them allies of conservation. This can be done by direct involvement on the ground and at the institutional level. Officials, administrators, and technicians employed by these institutions need to be made more aware of protected area issues.

Efforts should be made to ensure that forest reserves play a role which is complementary to the role of protected areas. These forest areas can serve as buffers and/or as corridors between protected areas. Both tropical and temperate forests should be expected to play such roles.

Economic evaluations of goods and services provided by forests needs to be further defined. Improved national income accounting may generate political will to conserve forests by quantifying forest values. Improved predictions of changes in market values may guide economic decision-making, especially in the case of tree cropping which takes a relatively long time to yield a financial return. The local-level economic interactions need to be better understood.

The promotion of the use of non-timber products holds great potential for conservation. The expansion and increased commercialization of

extractive systems poses great problems, however. Making extractive use of non-timber products competitive with timber extraction, especially in the short term, is problematic. Developing commercial markets for non-timber products often leads to over-exploitation of the resource. The challenges lie in developing management systems which are economically and ecologically viable.

Local communities need to be compensated for the loss of access to protected areas. This can be partially accomplished by allowing regulated use of those areas or by intensifying production systems outside of protected areas. Tree planting and agroforestry systems may provide fuelwood, fodder, and other products which were formerly harvested from protected areas.

Several initiatives in northern countries are gaining momentum to promote trade in timber harvested from sustainably managed areas. Good timber management can be encouraged by helping to define what "sustainability" means and by lending technical and/or financial assistance to efforts towards raising the standards of forest management, thereby reducing pressure on protected areas.

New IUCN protected area categories for sustainable use zones should be established so that a distinction may be made between non-timber extractive areas and timber production areas.

Reforestation may relieve pressure on natural forests but it should be undertaken in degraded areas and not at the expense of ecologically valuable natural forests.

Outputs and Follow-up Action

IUCN's Forest Programme will publish a series of case studies backed up with guidelines for conserving biological diversity outside of protected areas. In order to help land-use managers avoid environmentally costly mistakes, these guidelines will also comment on those practices which should not be undertaken.

Papers Submitted

BHUIYAN, Ali Akbar. Human Activities and Protected Areas with an Emphasis on Agro-Forestry Programmes in Bangladesh.

BUDOWSKI, Gerardo. La Lucha con las Burocracias para Derrumbar Barreras entre Sentores.

CAMPOS A., Jose J. The Boscosa Project: Case Study of Sustainable Natural Resource Management and Community Development in the Osa Peninsula, Costa Rica.

DOBIAS, Robert. The Arun III Road and Hydropower Project in Nepal - Access to an uncertain future.



Workshop III.12

Cross-sectoral approaches to protected areas

Chair: Gerardo Budowski
Session Chair: Jeffrey Sayer (IUCN)
Organizer: IUCN (Jeff McNeely)
Rapporteur: Mark Dillenbeck

Overview

The workshop examined the various sectors which depend upon protected areas. Discussions focused upon multiple-use areas and on conserving biological diversity outside of protected areas. Approximately 30 participants attended the workshop. After an introduction using the overview paper, presentations followed by discussion provided the structure for sessions on wetlands, energy and forestry.

Conclusions

The workshop concluded that guidelines are needed on ways of reconciling major infrastructure developments (dams, reforestation, roads, etc.) with protected areas. Such guidelines should concentrate on methodologies which analyze different alternatives and scenarios, and more importantly, indicate what should not be done based on experience. This type of emphasis would equip non-governmental organizations with the criteria and arguments to

FANNY, Ngolo and Francis LAUGINIE. La Forêt du Banco: Pour un Complexe d'Initiation à la Nature et un Conservatoire de la Biodiversité Forestière Tropicale.

GAMBAROTTA, J. Carlos. Refugio de Fauna Laguna Castillos, Área Protegida Piloto o último Relicto de los Humedales de Uruguay?

HOWARD, Peter C. Guidelines for the Selection of Forest Nature Reserves, with Special Reference to Uganda.

LEZAMA, Alfredo. Hidroelectricidad y las Áreas Naturales Protegidas en Venezuela - Caso Cuenca Río Caroni.

MARSH, Clive and Waidi SINUN. Pragmatic Approaches to Habitat Conservation within a large Timber Concession in Sabah, Malaysia.

McCORMICK-RAY, Jerry. Aquaria's Role in Aquatic Conservation.

SHERPA, Lhakpa N. Need for Active and Adaptive Management of Forest Ecosystems in Protected Areas in Nepal Himalayas.

SOEDARSONO, M. Ari. Forestry Policy and Conservation in Indonesia.

SOEDARSONO, M. Ari and Agoes SRIYANTO. Establishing Conservation Areas in Production Forest, a New Concept in Conservation.

SUAREZ, Luis. La Fragmentación de los Bosques y la Conservación de la Fauna Silvestre en las Áreas Protegidas.

SYRATT, W.J. Corporate/Industrial Sector and the Environment - The Activities of British Petroleum.

VOLOSCUK, Ivan. Conservation and Rational Use of Forest Ecosystems in Carpathian Mountains, Czechoslovakia.

Symposium IV

**The challenge within:
protected areas management issues**



Symposium Chair: Graham Child
Coordinators: Maria Tereza Jorge Padue and Gil Child



Workshop IV.1 Talking the same language: an international review system for protected areas

Chair: Adrian Phillips (Categories)
Co-Chairs: Allen Putney (Management effectiveness)
Shekhar Singh (Threats)
Organizer: IUCN (Jeff McNeely)/Countryside Commission
Rapporteur: Jeremy Harrison, Michael Green
Resource Person: John Foster

Overview

The aims of the workshop were to:

- Develop further and obtain agreement on the categories of types of protected areas.
- Develop an international system for categorising the effectiveness of protected area management.
- Obtain an agreed system of categories of threats to protected areas.

The workshop was attended by a core of about 20 persons, with up to 30-40 persons attending any one session. Protected area agencies, NGOs and the European Federation of Nature and National Parks (FNNPE) were represented, but there were relatively few participants from African, South and South-East Asia and Latin America.

The framework paper was presented to participants in three sessions — on categories, management effectiveness and threats. Panel members, who had previously been given the paper for review, were invited to present their comments, followed by general discussion. Sub-committees were appointed, as necessary, to resolve issues as they emerged. The final session was devoted to conclusions, drawing up recommendations and identifying further action.

Conclusions

Protected areas are defined as areas established and managed through legal or customary regimes so as to protect and maintain biological diversity and natural and associated cultural resources. Protected areas are classified into management categories according to their management objectives, as defined by legal or customary regimes. The IUCN management category system covers a spectrum of management objectives ranging from high natural value/minimal human intervention to low natural value/high human intervention. This system

provides an international framework to facilitate comparisons at national, regional and global levels. It demonstrates the various benefits provided by different kinds of protected area, and the range of management options available for application at national levels.

The IUCN management effectiveness system will provide a means of assessing the effectiveness with which management objectives are met. The ability to assess management effectiveness is crucial to monitoring the health of protected areas and in order to identify priorities for remedial action.

The IUCN system for identifying threats will provide a means of assessing those threats to management objectives which are essentially outside the control of the management authority. The capacity to monitor threats to protected areas systematically is vital to generating appropriate action to safeguard the integrity of protected areas in the long term.

The workshop reached the following conclusions:

1. Categories

- a. The need for an additional category, tentatively called Sustainable Use Area, was identified; it was subsequently defined and incorporated within the categories system.
- b. It was agreed that the framework paper should provide the basis for developing guidelines to facilitate application of the categories system.
- c. Roles and mechanisms for applying the categories system, in conjunction with assessment of management effectiveness (next section), were identified subject to modification following preparation of respective guidelines.

2. Management effectiveness

- a. Four criteria were identified for assessment of management effectiveness:
 - Clear management objectives

- Availability of resources to implement objectives
- Achievement of objectives
- Monitoring implementation of objectives

Each of these would be assessed on the basis of "yes/partial/no".

- b. The framework paper will form the basis of guidelines to facilitate implementation of a review process based on these criteria. The guidelines will be modified as necessary for application at regional levels.

3. Threats

- a. It was agreed that, while a rigid framework for reviewing threats is not particularly useful, guidelines should be developed from the framework paper to facilitate implementation of a review process both at international and national levels.

- b. Two activities were agreed:

- A world programme on threatened protected areas
- Promotion of threat assessment at national levels

Roles and mechanisms for initiating these activities were identified, including an emergency procedure.

Outputs and Follow-up Action

CNPPA will produce the following outputs from the workshop, taking into account also the terms of Recommendation 17 from the Congress:

- a. Guidelines on protected area categories. This will be an attractively presented publication, with a number of examples of how the

different categories are being used around the world. It will contain a relatively short text on the concept of categories and on the individual categories themselves.

- b. Guidelines on monitoring management effectiveness and threats to protected areas. These would need to be developed under the guidance of a task force and tested at the regional level before publication.

- c. Proposals, developed in conjunction with WCMC, for funding a programme of threatened protected areas, which would monitor, assess and publicise major threats to the individual protected areas around the world.

Papers Submitted

EIDSVIK, Harold K. Wilderness Classification and the World Conservation Union.

FEDERATION OF NATURE AND NATIONAL PARKS OF EUROPE. Illustrative Explanations for the Classification of IUCN Land and Marine Reserves.

FOSTER, John. An International Review System for Categorizing Protected Areas, their Management Effectiveness and Threats to them.

GREEN, Michael J.B. A Critique of the Framework Paper.

LANG, Alfred. The Alpine National Park.

LOTSCH, Bernd. Suggestions for Amending IUCN Regulations Regarding European National Parks.

McCLOSKEY, Michael. Mobilizing to Defeat Threats to Protected Areas.

McCLOSKEY, Michael. Preliminary Observations: Reactions to Proposals of John Foster with respect to Developing a System for Categorizing Protected Areas and Threats to them.

PHILLIPS, Adrian. Talking the Same Language.



Workshop IV.2

Building professionalism among protected area staff

Chair: Rob Milne
Vice Chairs: William Briggie and Hugh Lamprey
Organizer: IUCN (Jeff McNeely)
Rapporteur: Kyran Thelen

Overview

The aims of the workshop were to:

- Define and clarify the role and responsibilities of park and protected area professionals.
- Identify and strengthen the means to build professionalism.
- Bridge the related efforts of building professionalism and training (workshop IV.3).

Approximately 65 people attended. They were predominantly park managers and consultants to governments. Regrettably, few Africans were able to attend as the workshop was held at the same time as the African Caucus.

In the first session, speakers presented their papers. The second session included presentations on related topics in Latin America, Southern Africa, UK, and a paper on *Parks* magazine.

Conclusions

The workshop considered it desirable and necessary to define more clearly what constituted a "protected areas professional". To avoid confusion among lending institutions, practitioners, academic institutions, training centre staffs and NGOs, the workshop recommended that the following definition be endorsed, adopted, and used by relevant national and international organizations:

"A Protected Area Professional is an individual who exhibits knowledge, skills, and commitments beyond employment to effectively manage and maintain the integrity of heritage resources according to statutory requirements and stated objectives within a code of conduct."

The workshop urged CNPPA to develop a code of conduct for adoption and use by protected area agencies, departments, and divisions of governments, and to present this code to the next IUCN General Assembly.

The workshop considered the desirability and merits of establishing an international pro-

ected area organization to strengthen professional capabilities through information exchanges, identifying issues and opportunities of common interest, and fostering the development of professional standards necessary to effectively protect and manage national parks and other protected areas. The workshop recommended that the Congress:

- Recognize the merit and value of national parks and protected area professional organizations to develop and strengthen the cadre of individuals necessary to effectively manage heritage resources.
- Endorse the creation of such organizations where it is feasible and appropriate.

The workshop also recommended that CNPPA further examine the respective merits, opportunities, constraints, legal considerations and options for the formation of an international protected area professional organization and make its findings known to its membership on or before the next IUCN General Assembly. A draft of the proposed accord forming an international ranger federation between the United States Association of National Park Rangers, the Scottish Countryside Rangers Association, and the Association of Countryside Rangers (English) was tabled as a possible model.

The workshop acknowledged the value of *Parks* magazine and recommended that it be continued and fully supported.

Outputs and Follow-up Action

The results of this workshop were presented to workshop IV.3 for their consideration and endorsement. The combined materials from the two workshops will be published as a set of guidelines.

Papers Submitted

BICKMORE, Catherine J. The Role of the Landscape Architect Profession in Protected Areas.

BULLEN, Victor H. Protected Area Management and Sustainable Development: A Simulation Game in Latin America.

CLARICOATES, Jane. Wetland Link International: Building Professionalism among Wetland Conservation-Education Centre Staff.

KANIAK, Vitor C. The Work of Volunteers and Seasonal Employees in the Management and Protection of the National Parks of Brazil.

McCLOSKEY, Michael. Advice to Park Managers.

MUNRO, Neil. An International Society of Protected Area Managers and Professionals.



Workshop IV.3

Training protected area managers: building the capacity to conserve

Chair: Pedro Salinas
Organizers: University of Queensland (Bob Beeton and Nicole Turner)
Rapporteurs: Bob Beeton and Nicole Turner

Overview

The aims of the workshop were to:

- Produce a declaration which places the development of professionalism and technical competence of protected area managers in the context of *Caring for the Earth, Our Common Future* and the UNCED process and which provides impetus to the development of training expertise to produce results on the ground.
- Plan and gather material for a publication on protected area management staff development and training.
- Deal with the major issue clusters, Congress Recommendations, and a draft recommendation which had been developed in response to the chronic problem of insufficient funding for training.

Over 100 people from various colleges and universities as well as protected area training professionals attended the workshop. Following summary presentations, three working groups addressed issues of worldwide significance: the central paradigm of protected area managers; educational technology transfer and training development; and funding and tourism. Five groups (Africa, Asia, South America, Caribbean, and North Africa and the Middle East) were organized along regional lines and were asked to deal with each issue as follows:

- Define the issue clearly and distinguish symptoms from causes.
- Identify the stakeholders for each issue and indicate if they are a force for making the issue worse or solving it.

- Indicate what relationship exists between this and other issues.
- Indicate what barriers exist which will stop the issue from being resolved or which will eliminate some particular option for solving the issue.

After reassembling to report the conclusions of each working group, sessions were held to discuss methods of overcoming barriers to the resolution of significant issues. Regional working groups reconvened to refine and prioritise the action for their respective regions by applying the following criteria:

- Local relevance and significance
- Probability of success
- Cost effectiveness
- Efficient use of resources

During a final session, the results of this process were compiled into regional action plans. In all, the groups provided a profile of the state of training in 75 countries.

Conclusions

1. Central paradigm for protected area managers

Protected area managers have a special responsibility for conserving the Earth's vitality and diversity. The mission of protected area managers is to defend the integrity of the protected areas for which they are responsible so that all values are sustained in perpetuity, and that human use of the protected area does not compromise that integrity. In carrying out this mission, protected area managers should ensure that the management of a protected area is of the highest standards appropriate to its

management objective, seek to build good relationships with the local community and where feasible seek to enhance the level of protection for the area.

A central paradigm for protected area management as a profession should be developed. Protected area managers must have access to training and education appropriate to their level of practice and future career prospects. To achieve this, protected area management should have a career structure that keeps managers in the field as they develop. Scholarships and awards are needed to provide the opportunity for training and career advancement.

2. Training development and educational technology transfer

Three ways were identified to develop training capacity:

- Formally train professional trainers.
- Have a "pass on" training component in all training programmes no matter what the topic.
- Develop a "mastercrafts person" system where people with particular skills are trained to pass on their skills in a work situation.

Protected area management training should:

- Create leaders who can make the system work.
- Produce managers who are capable of dealing with other land-use managers, educating politicians, changing social attitudes, and training local land holders in natural and cultural values while they preserve their traditional lifestyles.
- Be practical and train people to manage protected areas in the context of the total landscape.
- Eliminate discrimination against women.
- Provide courses which take into account local economic, social and political issues, and, where relevant, include information on the management of customary lands.
- Upgrade courses to advance the knowledge of previously trained staff; and
- Have specific programmes for specific levels in protected area management agencies. Where possible these should be in modules to allow staff to advance in their careers.

New training models are needed which have an interdisciplinary focus. Where interdisciplinary courses exist in developed countries they need to be transferred and made relevant to less developed countries.

A high priority is to develop local institutions throughout the world. This will require funding professional development programmes for staff of colleges and universities in less developed

countries. Institutional twinning represents a good mechanism for this and should be encouraged.

Further development of regional training centres for training at all levels is essential. Special programmes should be developed to strengthen the staff base of universities and colleges in less developed countries. This should be linked to a staff personal development and incentive programme. Institutional twinning represents a good mechanism for this and should be encouraged.

Exchange programmes are a cheap and efficient means of transferring skills provided the participants are also trained to pass on skills obtained. Higher education institutions should seek where possible to exchange educational materials or enter into consortium agreements to achieve efficiencies in protected area management training. Staff exchanges as a means of training should be encouraged.

New communication technologies should be used for training and information exchange between protected area managers. Staff need access to libraries.

International seminars have a role but should be:

- Locally relevant
- Of reduced length
- Focused on practical solutions of local issues
- Objective driven
- Achieve collaboration
- Interdisciplinary
- Able to place protected areas into the local landscape
- Able to provide feedback to local managers who are visited
- Relevant to educational levels of participants

Universities and training centres should develop links with conservation agencies. NGOs who initiate protected areas should ensure that provision is made for their management.

IUCN must develop its role as a coordinator for training and training technology transfer and should consider an accreditation system for protected area management programmes.

3. Regional priority issues

Caribbean

- a. Training must be locally relevant and be at an appropriate level. Natural science texts need to be developed which have local material as examples.
- b. The regional capacity for training must be developed for all levels. Higher educational institutions should seek where possible to exchange educational materials or enter into consortium agreements to achieve efficiencies in protected area management training.

c. Access to relevant library material must be developed for the region.

d. Good practitioners of protected area management skills should be trained to transfer their skills to others.

e. New interdisciplinary training models are needed for protected area management training. Local managers should be trained to take into account local economic, social and political issues.

Africa

a. The participants should work on developing issue-specific action plans on their return home.

b. Curriculum review and development is a key action.

c. A training needs assessment and market survey is needed.

d. Regional institutions need to build linkages with other institutions and agencies, the former to develop capacity and the latter to keep training relevant.

e. The existing training institutions need to be strengthened. Upgrading courses are necessary to advance the knowledge of previously trained staff; and special programmes should be developed to strengthen the staff base of less developed universities and colleges. This should be linked to a staff personal development and incentive system.

f. Training courses should create managers who can make the system work, are self-trainers, good problem solvers and are not afraid of the impossible.

g. Protected area management training should be done in the context of total landscape; and new training models are needed which have an interdisciplinary focus.

h. More scholarships are needed to train protected area managers.

Asia

a. Training of trainers.

b. Assistance with curriculum design.

c. Assistance with the establishment of training facilities in marine and coastal protected areas management.

South America

a. This working group represented 10 countries in Central and South America. The group emphasized that for IUCN to increase its credibility in the region it must take a high profile in training coordination. The group supported the development of models for effective knowledge and training expertise transfer into a relevant local context.

b. IUCN, jointly with the FAO Latin American network for protected areas, UNESCO, CATIE,

WWF, TNC, and other institutions, should organize and implement a meeting of representatives from government agencies, universities, colleges and NGOs working actively in training to elaborate a strategy for training.

c. IUCN should promote the establishment of a regional bibliographic centre for promoting and interchanging of protected area technical information in each region.

d. IUCN should promote and participate in the reinforcement of CATIE as a regional training centre. This along with other institutional development and the provision of an adequate annual number of scholarships for the region would provide a necessary institutional strengthening.

e. The Latin American network for protected areas should implement and execute workshops or meetings at the sub-regional level in order to make the exchange of knowledge and actions more effective. The best use of modern ways of communication should be promoted to increase the flow of experience and knowledge among the protected area managers.

North Africa and the Middle East

a. National governments and the international community should cooperate to provide facilities and programmes for training protected area managers.

b. New networks, consortia, twinning relationships between educational institutions and between educational institutions and protected area agencies should be reinforced and created to allow protected area managers and trainers to share expertise and provide mutual support in both the training of trainers and protected area managers staff.

c. Integrated training strategies should be established to assist managers to achieve effective protection of coastal and marine environments.

d. IUCN should seek funding for special projects to translate and transform selected English and French language texts into a form which is linguistically, culturally, locally relevant and acceptable; and produce locally relevant texts for protected area management.

e. CNPPA in conjunction with the Commission on Education and Communications should form a working group to establish guidelines for the teaching of the mission of protected area managers throughout the world.

f. IUCN should establish a regional office for the Middle East and North Africa and facilitate the development of regional cooperative training programmes including manuals in Arabic, a travelling seminar and a local training centre.

g. Training programmes targeted at different levels should ensure that those responsible for

policy advice and the supervision of protected areas are aware of:

- The nature of the relevant heritage resources.
- The need to have an understanding and an harmonious sustainable relationship between the local communities and the protected area, giving priority to the protected area's conservation needs.
- In local communities, the need to promote alternative economic alternatives to ameliorate the resource depletion which accompanies economic deprivation.
- Appropriate management of human resources.
- The legal and technical requirements for enforcement of legislation.
- The technical requirements for monitoring and evaluation programmes; for supervision of programmes for education, training of staff and public contact; and for use and maintenance of equipment.

h. Those engaged in supervising the activities of field staff need to have sufficient detailed knowledge to:

- Supervise, programme, and develop teams to achieve the tasks of field management staff.
- Identify conflicts as well as positive aspects of community relationships.
- Be able to negotiate solutions to conflicts with the local community and to promote participation in management.
- Participate in and supervise staff in public contact and education about protected areas.
- Monitor surveillance and enforcement of regulations.
- Supervise the conduct of standard monitoring and evaluation procedures.
- Supervise acquisition, proper use and maintenance of equipment required for management.
- Ensure that the field management staff understand the purpose of management and acquire, apply and develop the basic skills to carry out the tasks to which they are assigned.

i. Field staff need to have sufficient detailed knowledge to:

- Understand the existence of and adhere to the mission statement for protected area managers.
- Explain to users and the local community the purpose of management and regulations.
- Observe and report use of the managed area and infringements of regulations.
- Operate equipment competently and safely.
- Support planning and monitoring projects.
- Conduct or support emergency actions in the event of threats to the environment, human life or safety.

Outputs and Follow-up Action

In collaboration with workshop IV.2 and the University of Queensland, to prepare a publication on "Training Protected Area Managers".

Papers Submitted

BEEETON, R.J.S. Training Protected Area Managers: Building the Capacity to Conserve.

BROWN, Leslie P., Albert A. EINSIEDEL, Jr. and James R. BUTLER. Some Training Priorities: a Survey of American and Canadian Protected Areas Managers.

CASTROVIEJO, Javier, Javier JUSTE and Ramón CASTELO. Areas protegidas de la Republica de Guinea Ecuatorial: Su Creación y Desarrollo.

DELGADO, Jesús M. Necesidades de Capacitación en Administración de Areas Protegidas Brasileñas y Perspectivas de Colaboración Latinoamericana.

DOOLING, Peter J. and David HALEY. A New Undergraduate Programme in Conservation, Recreation and Natural Areas Management.

GREEN, B.H. and F. O'GORMAN. The Training Needs of Conservation Managers: Experience from The European Training Seminars for Managers of Protected Areas 1990 and 1991.

HAMILTON, Lawrence S. Some thoughts on Education and Training in Protected Area Management for the Pacific Island Countries.

MASTERSON, Donald, Miguel CIFUENTES and José VILLA. CATIE: Enseñanza y Capacitación en Areas Protegidas para America Latina.

MOORE, Alan. A Training Program for Protected Area Personnel in Ecuador: Design and Implementation.

NGOG NJE, Jean. La Contribution de l'Ecole de Faune de Caroda (Cameroun) a la Gestion de la Faune Africaine.

OLE PERTET, Fred. The Role of the Naivasha Wildlife and Fisheries Training Institute in Training Wildlife and Fisheries Managers.

PANWAR, Hemandra, V.B. SAWARKAR, V.B. MATHUR and P.K. MATHUR. Wildlife Institute of India in Support of Protected Area Management.

RAGSTER, LaVerne E. A Consortium Approach to the Connection between Tertiary Institutions in the Caribbean and Training of Protected Area Managers.

ROMERO, Carlos Eduardo. Manual de Educación Ambiental para la Region Andino Patagonia.

SALGUERO, Juan. Centro de Capacitación para el Personal de Parques Nacionales.

SALINAS, Pedro J. Training Protected Area Managers: Building the Capacity to Conserve.

SALINAS, Pedro J. Role of Universities in Training Management Staff for Protected Areas.

SALINAS, Pedro J. Training Protected Areas Managers. Needs and Possibilities: A Proposal.

WALLACE, George N. Real Ecotourism: Assisting Protected Area Managers and Getting Benefits to Local People.



Workshop IV.4

Site management in protected areas

Chair: John MacKinnon
Organizer: IUCN (Jeff McNeely)
Rapporteur: Michael Oneka

Overview

This workshop aimed to provide guidelines on a number of diverse but widely shared problems facing protected areas management; to provide a forum for sharing experiences, skills, techniques and for other valuable networking; and to advise CNPPA and IUCN on what follow up activities should be done to assist the world's managers of protected areas.

Attendance fluctuated from 30 to 50 persons over the one and a half days. In total over 60 people participated. These were of somewhat uneven balance with only two participants from Africa, two from China, two from India, several each from Europe, Australia and United States and several from Latin America. The Latin American participants fell mostly into the fire management and historical-cultural issues interest groups, while the other participants were fairly evenly distributed between interests in management planning, on-ground management techniques and a more specialised group interested in architectural aspects.

Formal presentations were limited to a keynote paper outlining many of the prerequisites for protected area success and five floor presentations on different management approaches around the world with examples from China, India, Africa and Latin America plus a presentation on the activities of Whole Access - a group concerned with providing facilities for disabled persons to visit protected areas. The limitations of time led to some disappointment from a number of participants who had hoped to make presentations but with 54 submitted papers, it would have been quite impossible to include full presentation of all.

Conclusions

1. Cultural Aspects

Protected areas usually include both natural and cultural heritage values. Heritage values include archaeological, historical and ethnographic features. They show the cultural diver-

sity of our planet and help understand the relationship between people and environment. These heritage assets are an integral part of protected areas and they contribute substantially and positively to their knowledge, interpretation and value. The value and conservation of the natural and cultural heritage must be taken as the basis for the sustainable development of protected areas.

Protected area managers should inventory the cultural assets of each area. These cultural assets must then be taken into account in the appropriate zoning plans for protected areas, with a view to their proper conservation, administration and management.

Research should be promoted towards obtaining knowledge of traditional techniques and materials, so that these are used in any intervention or facility in the protected area.

When natural spaces include human settlements that have traditionally lived in equilibrium with that environment, those responsible for the management of the protected areas should ensure that these groups can keep their ways of living, by favouring their sustainable development, so that, without giving up their particular features, they can feel free to choose to live under modern conditions.

2. Architecture in Protected Areas

More importance should be given to the design of physical facilities in protected areas. They are needed for security (housing for rangers - the park is not secure if the rangers live off-site); visitor and tourist lodging (including private developments); and research (visiting biologists and scientists need a place to work, eat and sleep). In strict nature reserves with no visitor functions, factors of functionality and economics may prevail over aesthetics.

Park facilities should be designed:

- For low impact (including low visual profile) following design themes that are a visual extension of the natural and cultural setting in which they are located and using local materials.

- To minimise use of resources, energy, water and materials; and to use ecotechniques including solar panels, water collectors and water conservation systems, re-used and recycled materials, durable, low-maintenance materials, and natural systems for heating and cooling; and
- By skilled designers (traditional skilled craftsmen and/or trained architects) following thorough investigation of site (geology, hydrology, climate, vegetation, wildlife) and with sensitivity to local cultural, historic values and local conditions.

Many of these principles should be applied in the construction of facilities in the vicinity of but outside parks. Facilities that are not really needed inside the protected area should be sited on its boundary and away from fragile sites. The development of appropriate guidelines for park development (such as the "Sustainable Design Guidelines" now being developed by the US National Park Service) is critical.

3. Management Planning Issues

Each site should have a management plan covering information, evaluation, intention and actions. A set of policies or objectives (interim plan) should be prepared before the final plan is written. A plan should be an iterative process—action, monitor, new action to be followed annually. Plans should be as simple as possible so they can be understood by a variety of people. The plan must be a working document and not an academic thesis.

Plans should be seen as a contract between an authority and others interested in or dependent on the site. Local people must be consulted as to what resources they value or use so their interests can be directly related to the final plan; they must feel ownership of the plan. The plan must be validated by an authority or government board so that it has status. Although plans may not be agreed by all participating parties, at least they will be able to understand their rationale. Plans should be flexible and not seen as a straight-jacket. Site managers should have the ability to act on contingencies or new events.

Policies or objectives should be formulated at a "path finders meeting" involving a multi-disciplinary team of site managers, advisors and customers etc. The path-finder meeting should contain a person who can help plan future visitor services.

Maps and other graphics should be used extensively to convey strategies and zones of action and should be presented before the prescriptions as actions are written.

Plans should be prepared in accordance with the overall national policies of the managing organization. Plans are important documents in

maintaining continuity of thought and action about a site, helping to minimize the effects of staff changes and allow continuous evaluation.

Each plan should be monitored by an annual report which contains progress reports on all its main projects and prescriptions and if necessary a five year audit and review.

4. Site Management Issues

Recognising that natural systems are dynamic and that natural processes may not operate effectively within the artificial confines of protected areas, the workshop recommends that:

- Managers of protected areas investigate and, as appropriate, implement manipulative resource management designed to protect specific values, optimize biodiversity and perpetuate mosaic patterns within those areas and associated buffers. Considerable community education is usually required to explain the dynamic nature of ecosystems and the reasons for applying manipulative management in protected areas.
- To maximize effectiveness through time, managers should ensure continuing research and monitoring of ecosystem dynamics and, wherever possible, involve and learn from resource management applied by indigenous peoples before such traditional knowledge is lost.
- Protected area management authorities must be encouraged to improve on-the-ground management and protection particularly at ranger level. The rangers constitute the most important level of management and should perform routine patrols, reporting and monitoring activities. Mechanisms are needed to collate, evaluate and analyze the monitoring information on habitat condition, wildlife and human activities in protected areas recorded in the patrol reports for management purposes. Data can be uploaded to computerised data management systems for wider use but such databases are valueless without the flow of data from ground level.
- The lure of financial gain may encourage over-exposure of fragile sites to visitors. It is important to draw safe limits of visitor carrying capacity and decide these limits divorced from income considerations. For this reason it is important to design income flow systems so that income from visitors only indirectly filters back to park management.
- In planning visitor trails, camping areas and other sites used by tourists, adequate attention must be paid to problems of litter disposal, treatment of human waste and other adverse impacts. Many countries require vigorous programmes of visitor education to transmit improved environmental ethics to visitors so that their behaviour and impacts cause minimal damage. Application of the "pack it in - pack it out" ethic is encouraged.

5. Fire Management Issues

Management of fire-affected ecosystems is very complex. The degree to which fire should be allowed or even used as a management tool will vary greatly between ecosystems and depend on the specific management objectives of a given site. Fire patterns should be carefully monitored. Ideally all fires should be mapped on overlay sheets recording their date, extent and degree of burn, to build up a fire history picture that can be related to floral and faunal conditions on the ground and give the manager a clearer understanding of these relationships.

In the management of burned areas it is very important to avoid the degradation and destruction of vegetation and soil so that pre-fire conditions can be regained. In any event, in protected areas, a fire zone must not be considered as a lost area; its recovery depends also on appropriate management.

Small-scale fires which recur at a natural rate are not only a feature of evolution and diversity but also a factor of biological rejuvenation. However, large-scale fires with an unnatural rate of recurrence are a crude disruption which causes degradation of soil, flora and fauna. Most fires today are man-caused as a result of criminal or accidental acts and can be disastrous to protected areas.

In many Mediterranean ecosystems, fire can have positive effects on vegetation and fauna but can also have negative effects of soil erosion and degradation of lands already subjected to heavy human impact. Here an intermediate regime of fires only every 5-6 years, accompanied by light grazing, favours good habitat conditions, preservation of early vegetation stages and maintenance of high biodiversity.

An excessive accumulation of inflammable matter (wood and grasses), which may result from a long period of fire prevention or low levels of ungulate grazing, provide dangerous potential for large-scale, hot and destructive fire. Management should be applied before such a fire can occur. This can be done by grazing, thinning vegetation, removing inflammable materials or controlled early burning when weather conditions can help keep the fire under control.

Social education is a major factor in fire prevention. Precaution and prevention is always better than curbing the fire when it has started.

Good fire management involves actions in advance (grazing, removing organic material, pre-burning, fire corridors, vigilance and preparatory measures), during (fire fighting) and after a fire (promoting habitat recovery). Reseeding may be necessary to speed up recovery in some destroyed habitats.

Monospecific forests are fragile and are particularly susceptible to fire damage, being poor in

biological diversity. Burned areas can mar the aesthetics of the landscape.

Fire fighting ability should be developed along with other factors of success such as weather forecasting, first aid brigades, fire brigades, help from army and volunteer bodies, redoubled surveillance by land and air, good access to fire-prone areas, sufficient supplies of water, legislation, criminal investigation, research, monitoring, etc.

Fire is such a scourge in many areas both in the countryside at large and in protected areas in particular, that this subject must be more regularly addressed at future meetings about protected area management.

6. General Management Issues

The workshop concluded that despite good progress in increasing the extent of protected areas and both national and international financing for biodiversity protection, management effectiveness at ground level is clearly insufficient and too many reserves exist "only on paper". Governments are therefore urged to ensure that:

- Realistic funding reaches on-site management to allow guards and wardens to patrol, protect and monitor the established areas.
- Adequate planning and provisions are allocated to land uses and buffering mechanisms around protected areas to cope with ever-increasing pressure for land by expanding populations.
- The following necessary ingredients for success are catered to before gazetting a new protected area: ecological sustainability of the area; clear operational objective/plans; strong motivation; acceptance by local people; and commitment of necessary resources for management and protection.

Outputs and Follow-up Action

- IUCN should produce a global inventory of resources of cultural heritage values contained in protected areas. This would make such information more readily available to those in the field and would also ensure that these important aspects of the protected areas are not overlooked in the rush to save biodiversity.
- IUCN should ensure that good formats for management plans are widely publicised (e.g., in French).
- IUCN should prepare a handbook on fire control methods and fire management studies.
- IUCN and other relevant bodies should facilitate the conduct of periodic regional forums to share and advance knowledge and skills of management in protected areas.

Papers Submitted

- BASBAUM, M.A., M.L. ABREU and A.S. GRAEL. Current Status of some of Rio de Janeiro State Protected Areas.
- BAYER, M. Zekai, Turhan ISTANBULLU and Aytug AKESSEN. National Parks and Protected Areas in Turkey.
- CANGEMI, Phyllis. Accessibility and Recreational Trails.
- CANGEMI, Phyllis, Wayne WILLIAMS and Paul GASKELL. Access for all People: A Park Manager's Issue.
- CARABALLO PERICHI, Ciro. La Herencia Cultural y su Vigencia Ambiental/Resumen.
- CASAS DUPUY, Pablo. Patrimonio Histórico-Cultural del Sistema de Parques Nacionales de Colombia.
- CASTANO URIBE, Carlos. La Arquitectura Transparente en Parques Nacionales de Colombia: Una Respuesta al Rescate de la Tradición Constructiva Tradicional y a la Demanda Ecoturística.
- CAVALLI, S., S. PALLADINO, R. SAINI and T. DI CIGOLI. Une Methode pour verifier la Fonctionnalité des Espaces Protégés en Italie.
- CURIEL C., E.C. Premisas para el Diseño de Instalaciones en Parques Nacionales Costeros.
- GLICK, Dennis. Greater Yellowstone Tomorrow: Charting a Course for a Greater Yellowstone Forever.
- HAZDAY, Ronald. Once is not Enough: Recycling as a part of a Comprehensive Plan for Global Conservation of Natural Resources.
- KAJUNI, A.R. and Bart E. YOUNG. Tanzania National Parks Management Planning Project: Strategic Planning Process (SPP).
- LANSDELL, Mark. El Manejo de Aguas Sevidas en Zonas Costeras Venezolanas: Casos Prácticos.
- LEDEC, George. Guidelines for Preparing Management Plans for National Parks and other Protected Areas.
- LLIMONA, Francisco. El Manejo de la Fauna en un Espacio Protegido Metropolitano: Problemática y Perspectivas.
- MACKANGA MISSANDZOU, Alphonse. Reserve de Faune de la Lope, un Outil pour la Recherche, l'Amenagement Rural et le Developpement Local.

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- MODISE, Sedia C. Development of Protected Area Management Plans in Botswana.
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- MORENO DE WEBER, Carmen. La Herencia Cultural de Cerro-Guazu.
- NGARAM, Ali. Le Défi: Renforcer la Gestion des Aires Protégées.
- OZA, Gunavant M. and G. OZA Premilata. Wildlife Conservation in India.
- PASCOTTO, Monica, Alicia TAGLIORETTE and Fiedad LOSANO. Peninsula Valdes, Chubut, Argentina: Lineamientos básicos Plan de Manejo. Pautas y Recomendaciones para un Manejo de la Reserva Integral Peninsula Valdes.
- PATTEN, Gerald D. Sustainable Park Development: Design for Preservation/Design for People.
- RASOOL, Ghulam. The Status of Management of Protected Areas in the Northern Areas of Pakistan.
- RECORD DE MENDOZA, Zulma. Manejo Integrado del Patrimonio Natural y Cultural en El Salvador, Centroamérica.
- SAGI, Yoav. The Ramat Hanadiv Project: Integrated Research, Planning, Education and Management in an Open Space Landscape.
- SALGUERO, Juan. Los Incendios Forestales en los Parques Nacionales Argentinos.
- SELENGUT, Stanley. Building Partnerships between Protected Areas and the Tourism Industry - Energy Issues.
- THOMAS, Gareth. Management Plans for Protected Areas.
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- WANG, Xian-Pu. The Basic Characteristics and Experience of Effective Management of Snake Island and Laotieshan Reserve in Dalian City, Liaoning Province, China.
- WIRJOATMOJO, Soetikno, Henry D. SUSILO and SUMIN. Conservation in Mountain Habitats: Indonesia situation - Java.
- ZHU, Xiang and Yang YUANCHANG. Current Management of Xishuangbanna Natural Reserve and Approaches to the Existing Problems.



Workshop IV.5

Strengthening marine protected area management

Chair: Tom van't Hof
Organizer: Tom van't Hof and IUCN Marine Programme
Rapporteur: Silvana Campello

Overview

Many marine protected areas (MPAs) exist on paper only. Their boundaries may have been gazetted in legal and administrative texts, and they often appear on maps and in tourist brochures. More often than not, however, they are not managed on a day-to-day basis. The workshop addressed four major issues:

1. Inadequate institutional structure and funding.
2. Lack of public support.
3. Lack of staff or of adequately trained staff.
4. Insufficient information base for management decisions.

Working groups were formed to develop recommendations on how to improve management of MPAs.

Conclusions

1. Institutional structure and funding

MPAs must be integrated with coastal zone management (CZM), but this should not preclude their establishment where CZM programmes have not yet been developed.

In the absence of a single preferred approach to developing MPAs, both "top-down" and "bottom-up" institutional approaches should be encouraged. Single agency and multiple agency approaches to developing MPAs have both proven to work, but they require a forum to involve users and the public in management issues and to create public support.

The rights of indigenous people need to be legally recognized and traditional tenure systems should contribute to MPA management.

MPA legislation must be effective, enforceable and allow for periodic review. A clear concept of the functioning of the protected area is needed to enable incorporation of special provisions in the enacting legislation with respect to licensing, concessions, user fees, permits and others.

The difficulty in securing long-term funding is a major impediment for effective MPA manage-

ment. Funding strategies should be creative and based on a combination of revenue generating mechanisms, including trust funds, user fees and cooperating associations, if they are to provide long-term and sustained funding for MPAs. Revenues generated by MPAs should directly benefit their management. All international funding agencies should be encouraged to support MPAs managed by NGOs. International aid agencies should be encouraged to support both basic and applied research relating to MPA management. Training in project development for MPA managers is needed in order to better access international funding.

2. Public support

Community involvement and support in the development and implementation of MPAs is essential to their effective management and should be facilitated to the maximum possible extent in order to: provide the political power base needed to designate sites, secure funding and staff, and to develop strong management; ensure the incorporation of community values into management regimes; provide understanding of the purpose and regulations of the MPA, thereby facilitating preventative enforcement; promote voluntary efforts in managing MPAs; and make use of local, community-based knowledge and expertise.

Public involvement should be initiated early in the process of planning and establishing MPAs and should be continued throughout the implementation. Public involvement should include both MPA users as well as non-users.

The benefits of MPAs should be documented and demonstrated to the general public. Special mechanisms for communication with and involvement of affected interest groups need to be developed. Priority should be given to educating the most affected groups as to potential benefits and viable alternatives. A balanced empowerment of interest groups should be facilitated by providing a forum for mediating and resolving user conflicts.

The public must be educated about the importance of MPAs in conserving marine biodiversity, separating conflicting uses, and sustaining long-term value of marine resources. Education and

interpretation must be directed not only to visitors but to the community as a whole. Volunteer programmes should also be used to directly involve the public in MPA management.

3. Human resources

Specific problems with respect to human resources for MPA management include the lack of skills and tools to educate local people and increase their understanding of MPAs; incentives for trained personnel to remain in the park; self-esteem among park rangers (low valuation of profession by the community, low wages); targeted programmes for teachers and other educators; and training centres and centres for dissemination of information on MPA management.

Sponsored training programmes should be developed and coordinated by MPA managers, and targeted to the public, specifically to decision-makers, resource users, teachers, children, volunteer organizations and individuals, donor agencies and MPA staff.

Regional centres should be identified to collect, process and disseminate information materials from and to MPA managers. Such material should include training manuals, guidelines, newsletters, relevant research findings, audiovisual material, conferences and workshops.

Regional facilities for training MPA managers and staff should be established. The facilities should address regional needs and offer practical guidelines, courses, workshops, seminars, attachments and exchange programmes. IUCN's CNPPA should be the focal point for the establishment of regional training facilities.

MPA managers should play a greater role in the decision-making process by enhancing the constituency for protected areas, as well as by providing decision-makers with relevant information on MPA functions. MPA managers should also have access to technical and scientific information.

A percentage (10% is suggested) of funds identified for MPA development and management obtained from external sources (NGO, regional and international funding agencies) should be allocated to training.

4. Resource monitoring for management

The following guidelines for monitoring procedures were developed at the workshop:

a. Habitat data: use simple standard techniques which can be used by non-experts to collect qualitative data over time (e.g., Manta tow surveys) and establish permanent sites for long-term monitoring (mapping, photographic recording, etc.).

b. Fish: conduct annual fish counts using visual census techniques; identify target spe-

cies, including commercial species; collect fisheries data on catch and effort; and conduct market surveys.

c. Water quality: use Secchi disk observations to determine turbidity and interpret the results of habitat monitoring in terms of changing water quality (most water quality analysis requires sophisticated techniques); and use sediment traps to monitor sedimentation.

d. Specific organisms and general information: provide standard forms for data recording to involve resource users and park visitors in monitoring efforts (e.g., reefwatch, fishwatch, whalewatch); provide feedback of the results of monitoring to resource users, park visitors and the public in general; encourage research stations to establish long-term monitoring projects and to involve students; use the knowledge of local and indigenous people, as they may provide important historic resource information; and disseminate information on local unusual events, as these may have more than local significance.

e. User information: collect information on user activities and conduct socio-economic surveys.

The workshop recommended that:

a. The CNPPA marine network should also be used as a network to distribute and exchange information on monitoring for MPA.

b. Funding should be sought for regional teams to assist in MPA monitoring activities where national resources are short.

c. MPA managers should submit articles to *Parks* magazine to increase the percentage of marine-oriented articles towards 50%.

d. The ASEAN manual on monitoring techniques should be widely distributed through the CNPPA marine network and the techniques adopted in MPA monitoring programmes where practicable.

e. Statisticians should be encouraged to develop analytical techniques for soft data.

Outputs and Follow-up Action

The workshop recommended the preparation of a publication entitled *Guidelines for Effective Management of Marine Protected Areas*.

Papers Submitted

ABDEL SALAM, M.Y. Sunganeb Atoll: The First Marine National Park in the Sudan.

DELGADO PADRON, Jose Ramon. Venezuela, 20 años de Experiencia en Parques Nacionales Marino-Costeros y otras Areas Protegidas.

GUBBAY, Susan. Protected Area Management in the UK: A Comparison of Voluntary and Statutory Approaches.

HALIM, Matheus and Rili H. DJOHANI. Pulau Seribu ten years later: A Marine Protected Area in Indonesia.

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MILAN, Vic. Conservation of the Tubbataha Reefs National Marine Park, Philippines.

NGOILE, M.A.K. and Gudrun GAUDIAN. Marine Resource Conservation in Tanzania: A Case Study of Mafia Island.

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Van't HOF, Tom. Between the Devil and the Deep Blue: Strengthening Marine Protected Area Management.

WENNO, Bob, Gerard PERSOON and Hans De IONGH. The Planning and Management Options for a Marine Nature Reserve in Indonesia: The Aru Tenggara Marine Reserve and other Potential Areas in East Aru, Moluccas.

WOOD, Brian. Developing a National Parks System for the Turks and Caicos Islands.



Workshop IV.6

Managing protected areas to conserve genetic resources

Chair: Vernon Heywood
Organizer: IUCN (Vernon Heywood)
Rapporteurs/
Vice-Chairs: G. Brent Ingram, Juan Black, Louis Olivier

Overview

The aims of this workshop were to:

- Promote the conservation of genetic resources in protected areas and particularly of those species of economic and scientific importance.
- Consider scientific, planning, management and research aspects of establishing genetic reserves, gene sanctuaries, seed orchards, and gene resource management units in systems of protected areas, including marine and freshwater ecosystems.
- Make this expertise and information more widely available.
- Explore ways of complementing *in situ* conservation in protected areas with appropriate *ex situ* facilities, such as botanic gardens, field gene banks, and cold storage to achieve more efficient genetic resource conservation.

Over 50 participants from a wide range of countries, agencies and organizations attended the workshop. The workshop included introductory reviews of the main themes, a series of case studies from different regions and situa-

tions, and a discussion and preparation of conclusions.

Conclusions

Advantage should be taken of the world's protected area system for the establishment of regional, national and global networks of *in situ* genetic resource conservation, especially in regions with high levels of biological diversity. Policies should be developed to encourage sustainable and multiple-use concepts for the full range of genetic resources.

Protected area managers should be encouraged to include genetic resource conservation in their policy objectives and current management policies. Technical support from experts and institutes involved with genetic resources should be expanded and formalized.

Increased resources and funding should be provided to protected area systems to allow inventorying, monitoring and conservation of the genetic resources contained therein, especially for regions with high levels of biological diversity.

Since significant genetic diversity of the species that occur in protected areas is often to be found outside such areas, action needs to be taken to

expand and diversify these networks to achieve more comprehensive coverage of genetic variation across districts and regions.

An International Technical Working Group should be established on the *in situ* conservation of genetic resources in cooperation with IUCN, IPGRI (formerly IBPGR), FAO, BGCI and other international technical agencies. The proposed technical group would develop guidelines through various exchanges and publications related to the *in situ* conservation of genetic resources, with an initial emphasis on plants.

Government, financial and technical support should be given to the development of local and national capacity for research and management for maintenance and utilization of genetic resources.

Substantial effort should be made to identify and monitor the more ubiquitous processes and activities of genetic erosion which have or are likely to have adverse impacts on genetic resources in protected areas. Where possible, concerns for genetic erosion should be integrated into broader frameworks of environmental impact assessment. Some examples are pollution, unsustainable harvesting of biological resources, release and spread of alien species, and release of genetically modified organisms. It is necessary to develop and implement adequate measures and strategies to mitigate the impacts of the above-mentioned processes.

In designing *in situ* conservation programmes, issues of equity, (such as Farmers' Rights), the socio-economic contexts of rural communities, and the aspirations of local people should be taken fully into account.

Special consideration should be given to the particular problems of conservation of genetic resources in mountain ecosystems.

Greatly expanded programmes of ecogeographical surveys and associated "gap analysis" of current protected areas in terms of long-term viability of target species and genetic variation are needed.

Outputs and Follow-up Action

A technical group on genetic resources will need to be formalized by the end of 1992 and should involve IUCN in cooperation with the relevant UN technical agencies, the CGIAR centres and other international and national institutes and non-governmental organizations.

Papers Submitted

BRAMWELL, David and Victor MONTELONGO. Integrating *in situ* and *ex situ* Conservation: The Specific Role of Botanic Gardens.

CARDICH, Erich. *Conservación in situ* de Recursos Genéticos.

DEALWIS, Lyn. Conservation of the Medicinal Plants of Sri Lanka.

DJEDJE, Bagnou. Problematique de la Conservation d'un Parc National en Zone de Forêt Dense: l'Exemple du Parc National de Tai.

INGRAM, Gordon Brent, Hugh SYNGE and Alix FLAVELLE. Global Status Report on *in situ* Conservation of Crops and Wild Relatives of Crops.

KABUYE, Christine H. Conserving Africa's Floral Biological Diversity.

LASKOWSKI, Libia, Miguel LENTINO, Robert SMITH, Carlos RIVERO BLANCO and Edgard YERENA. Conservación de Biodiversidad e Investigación en Parques Nacionales de Venezuela.

OLIVIER, Louis and Michel CHIAUVET. *In situ* Conservation at the Interface between Crop Genetic Resources and Nature Conservation. Conservation de la Diversité Génétique des Espèces Végétales au sein des Espaces Protégés.

RICKER, Martin. Conservation of Alkaloid Diversity in the Tropical Tree Genus *Ormosia*: Which Species should be Protected in Parks?

RIFAI, Mien A. Managing Genes and Species: Useful Plants in Indonesian Reserves.

ROMERO MANRIQUE, Pedro. Rescate Genético y Jardinería Ecológica.

SUMITHRAARACHCHI, D.B. and S. BALASUBRAMANIAM. Forest Genetic Resource Conservation, Protected Areas and Botanic Gardens in Sri Lanka.



Workshop IV.7

Managing tourism in protected areas

Chair: Peter Valentine
Co-Chairs: Laura Loomis and Lea Scherl
Organizer: IUCN (Héctor Ceballos-Lascuráin)
Rapporteur: Les Hutchins

Overview

This workshop was conducted within a framework of five major themes:

- Appropriate tourism in protected areas
- Relationships between park managers and tourist operators
- Partnerships between tourism, protected areas and local communities
- Monitoring and limiting impacts of tourism
- Visitor management, especially carrying capacity issues

The programme followed for the first four themes consisted of plenary panel presentations; breakout discussion groups led by panel members (up to six on a single theme); writing groups; and a final plenary session for additional airing of issues and recommendations. The final theme, which occupied the last afternoon and morning, followed a similar pattern with a final plenary to address issues.

This workshop sought to share experiences about tourism in protected areas and to develop a set of observations about issues and concerns, especially from protected area managers. The five themes identified above reflect the primary concerns of participants, judged by the content of papers presented. This assessment was further reinforced by the products of breakout groups and plenary discussions. Attendance was at times too great for effective participation with an estimated peak of perhaps 250. The minimum participation was around 100.

Conclusions

The opening presentation underlined the affective values of the wild places we manage. Spiritual values are an essential component of protected areas. This sense of sacred places is all too easily overlooked in the modern world. This message was reinforced by a clear expression of concern about impacts of tourism on protected areas. A similar concern was expressed for local communities. Together these produced an important recommendation:

In developing greater cooperation between the tourism industry and protected areas the primary considerations must be the conservation of the natural environment and the quality of life of local communities.

It was strongly agreed that the term "ecotourism" may prove a distraction and it was concluded that IUCN should refer to "tourism" when discussing the industry sector and to "visitors" when discussing people in parks. A preferred reference would be to "tourism associated with protected areas" rather than tourism in protected areas. The workshop saw the reality of many, if not most, visitors associated with protected areas as not being "ecotourists" according to most definitions. Possible elitist interpretations about "ecotourism" also may reflect badly on protected areas.

Human values along with biological values were considered an integral part of resource management and planning. These human values, which sometimes reflect why people want to visit protected areas, must be incorporated into management plans, or explanations stated for why they could not be included in the plans.

It was widely agreed that local people should have a strong role and that the appropriate partners for protected area tourism would usually be nearby local communities. This may also offer some compensation, especially where local people have been displaced or had access to some resources diminished. In such circumstances compensation may take the form of capital assistance to develop the tourism venture.

Local communities often face difficulties in both controlling and gaining benefits from tourism associated with protected areas. This is particularly so where private (often foreign) companies displace local community efforts. Mechanisms should be developed to assist local communities to gain benefits.

Some kinds of nature-based tourism were viewed by some as similar to previous colonial exploitation and it is clear that this is an area of considerable sensitivity. It is essential that IUCN be sensitive to this apparent rich/poor dichotomy.

Considerable discussion about access issues revealed a number of points:

- In many poor countries, most people have limited access to national parks as they live in the densely populated cities; this exaggerates the image of "parks are for the wealthy". Protected areas in urban settings should be used to provide enhanced access to quality nature experiences for the urban-dwelling majority. This will provide more positive perspectives about protected areas and contribute to greater environmental awareness in urban communities.
- A dual or multi-layered approach to any charges for access to protected areas may be especially useful in poorer countries visited by more affluent tourists.
- Local communities should be involved in the planning and management of any tourism associated with protected areas. This is important as tourism potentially affects their own quality of life (by displacement or by other impacts) and also because tourism can serve to lessen other demands made on protected areas. Planning must take into account this community involvement aspect and it was recognized that this would require an understanding of how local communities can best be **approached, understood and integrated** into the management planning process.

"Developing guidelines" should not involve outsiders instructing nationals how to manage their protected areas. Each country should be responsible for developing its own policies and guidelines. This does not preclude the sharing of experiences in managing tourism associated with protected areas, but should recognize the difficulty of transferring technologies and approaches between different countries.

Tourism should be seen as only one of the potential developments among local communities and care must be taken not to over-emphasize possible benefits. Some communities have been let down after expectations had been raised. Communities should be educated about visitors and tourism impacts.

Managers frequently lack resources to properly manage increased visitation to protected areas. Mechanisms to capture financial benefits from such tourism ought to be developed, but these should ensure that the funds are retained within the protected area to offset any additional cost burdens and to retain effective interpretation and other conservation support services.

Many parks do not offer a good example in their management methods. For example, few protected areas employ energy or water saving devices, waste minimization programmes or incentives for other environmentally desirable behaviour. A number of examples were pre-

sented on how parks can contribute to the wider conservation message. In any development of visitor facilities, protected areas should adopt the widest possible range of ecologically sound systems.

Potential negative impacts of tourism on protected areas can arise from increased visitation and inappropriate structures. Protected area agencies should carry out careful assessment (both regional and site studies) to estimate appropriate levels of impacts for protected areas; obtain and monitor statistical information on tourism and recreation activities, and its social, cultural, economic and environmental impacts; and define the most locally appropriate management actions for the protected areas. This should take place before the initiation or expansion of any tourism associated with the protected area. Some visitor impact management techniques may interfere with the quality of the visitor experience.

Managers should be aware of possible changing views towards visitors to protected areas, and avoid seeing them in purely "dollar" terms. The traditional emphasis on the experiential quality must be retained both for the benefit of the visitor and for the extension of environmental values. Similarly, any expansion of visitor use, or any change in types of use, must be accompanied by careful monitoring to maintain the quality and range of appropriate experiences.

In considering the question of appropriate use of national parks, the response was, "if you can do it elsewhere, don't do it in the park". Appropriate tourism in protected areas is that kind directly related to the intrinsic values of each particular site. This is usually best evaluated in a regional context.

Any consideration of carrying capacity (visitor impacts) must recognize that this is not simply a function of numbers but rather involves linkages between activities, settings and management. In the context of tourism associated with protected areas, this must also consider the numbers and types of tour operators.

Monitoring is a key tool poorly or infrequently used. In the context of tourism associated with protected areas, monitoring the quality of experience by visitors or the use of protected areas by local communities should follow a process of: identification; analysis for a particular site; placement of this in a regional context; and monitoring over time.

Public accountability and explicit acknowledgement of conflicts that may exist (between different user groups or resource conservation and use) should be at the centre of responsible tourism management.

More pervasive impacts of tourism on nature conservation values include, for instance, the sale of animal and plant products to tourists.

Tourism ethics should be addressed, which might lead to support for conservation rather than conflict. In coordination with local parties, IUCN should develop guidelines on this issue as they relate to protected areas.

A coordinated approach between conservation and tourism authorities in each country should be used to develop National Tourism Plans which incorporate respect for protected areas and involve local communities within the context of ecologically sustainable development.

Within poorer nations, great concern is attached to the role of foreign companies gaining control or displacing local tourism developments. While this is clearly a national issue, it is recommended that IUCN policy for protected area involvement with tourism give strong preference for local businesses and guides.

IUCN should initiate a programme which addresses the issue of training and accreditation or certifying of tourist guides and tour operators to ensure sensitivity to park values and local communities.

Outputs and Follow-up Action

The written papers contain a rich range of material very relevant to the overall topic and the themes of the workshop. Two different kinds of products might be envisaged from this:

- A wide variety of case studies from which can be extracted a set of observations about problems and issues in managing tourism associated with protected areas, leading to management strategies which could be adopted by other protected area managers as appropriate.
- An edited volume on experiences with tourism and protected areas. This would need support with appropriate editing and rewriting, with perhaps some invited additions. It could be a very useful product of value to managers throughout the developing and developed world.

Papers Submitted

- ANDERSEN, David L. Treading Lightly: Creating a Framework for Responsible Design of Eco-Tourism Facilities.
- ATKINSON, Nick. The Planning and Management of Tourism in the Dartmoor National Park, UK.
- BYERS, Alton C., Kamal BANSKOTA and Gary McCUE. Environmental Impacts of Backcountry Tourism on Three Sides of Everest.
- CARRASCO V., Alfredo. El Turismo en las Islas Galápagos y sus Impactos en la Ecología, en la Economía y en la Sociedad.
- CEBALLOS-LASCURAIN, Héctor. Tourism, Eco-Tourism and Protected Areas.

CEPEDA, Fausto. Experiencia en el Manejo del Turismo en el Parque Nacional Galápagos.

CLARICOATES, Jane and Sharon AMENT. The Approach of the Wildlife and Wetlands Trust to Tourism Pressures in Sensitive Areas.

COBB, Thomas L. A Case Study on Visitor Management Issues and Recreation Carrying Capacity in the High Peaks Region of New York State's Adirondack Park, USA.

CRAIK, Wendy. Ecotourism in the Great Barrier Reef Marine Park.

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DURBAN VILLALONGA, Manuel. El Manejo del Turismo en los Parques Nacionales de Canarias, España: Dos Casos Límites.

EIDSVIK, Harold K. Wilderness Classification and the World Conservation Union.

GOMEZ LUNA, Boris. Ecotourism and Conservation in Manu National Park, Southeastern Peru: Cusco and Madre de Dios.

HAYNES, Chris, L.F.S. De BRANGANCA, J.E. MULHOLLAND and J.R. SHARP. Market Research for Management of Visitors to Natural Areas: A Case Study from Western Australia.

HUTCHINS, Les. Ecotourism in National Parks and Protected Areas of New Zealand.

JACKSON, Ivor L. Nelson's Dockyard National Park: The Challenge of Managing Tourism.

KASSIOMIS, Kostas. Challenges of Managing Protected Areas not only to Conserve Natural Values but also to Satisfy Human Needs.

LEAL FILHO, Walter D.S. Conservation or Depredation: An Example of the Environmental Impact of Tourism in Protected Areas in Bahia, Brazil.

LOOMIS, Laura A. and Alan R. GRAEFE. Overview of NPCA's Visitor Impact Management Process.

MARSH, John. Tourism in Antarctica and its Implications for Conservation.

MULYANA, Yaya and Hari L. SUSETYO. Tourism and Protected Areas: A Case Study in Bromo Tengger Semeru and Baluran National Park.

PEDERSEN, Art. An Ecotourism Plan for Kiang West National Park, the Gambia, West Africa.

PEREZ BORRERO, Victor. Las Áreas Protegidas en los Destinos Turísticos Tradicionales: Su Incorporación a la Oferta Turística.

PRESTON, Guy R. and Heather CAMPBELL. Reactions of Visitors to four South African Nature Reserve Camps toward Charging for Facilities and Programmes on a User-Pays Basis that Incorporates Social Costs.

PRITCHARD, Paul. Carrying Capacity for Protected Areas: An Overview.

RICHIEZ, Gerard. Le Tourisme de Nature dans le Parc National de Port-Cros, France: L'exemple des Plongeurs Sous-marins en Scaphandre Autonome.

ROBINSON, David W. Socio-Cultural and Ecological Impacts of Mountain Tourism in Nepal's Sagarmatha (Everest) National Park: Implications for Sustainable Tourism.

SCHERL, Lea M. and Peter VALENTINE. Monitoring the Quality of Visitor Experience in National Parks.

SELENGUT, Stanley. Building Partnerships between Protected Areas and the Tourism Industry - Energy Issues.

STEVENS, Stanley F. and Mingma N. SHERPA. Tourism Impacts and Protected Area Management in Highland Nepal: Lessons from Sagarmatha National Park and Annapurna Conservation Area.

STEVENS, Stanley F. and Mingma N. SHERPA. Tourism and Local Development in Sagarmatha (Mount Everest) National Park, Nepal.

SUPRIADI, Dody and Dudung DARUSMAN. Visitor Impact on Gunung Gede Pangrango National Park, West Java, Indonesia.

VALENTINE, Peter. Tourism in Protected Areas: The Challenges and the Opportunities.

VILLA, Antonio. Ecodesarrollo y Ecoturismo como Alternativas Apropriadas para la Conservación de la Amazonia y el uso de los Recursos Naturales.

VOZMEDIANO G., Jesús. Las Amenazas del Parque Nacional de Doñana.

WOODLEY, Simon. Monitoring Environmental Impacts of Tourism in the Great Barrier Reef Marine Park.

YOUNG, E. Bart. Tanzania National Parks Management Planning Project: Strategic Planning Process Kilimanjaro National Park - General Management Plan.

YOUNG, Marguerite. Ecotourism the Fijian Way.



Workshop IV.8

Sustainable use of wild species in the context of parks and protected areas

Chair: Hernan Torres
Organizers: Stephen R. Edwards, Robert and Christine Prescott-Allen
Working Group
Chairs: Ashiq Ahmed, Alistair Gammell, Jon Planck

Overview

Economic and social benefits are derived from uses of renewable natural resources by people throughout the world. These uses are fundamental to the welfare of people in rural areas. Habitat degradation and loss of wild species indicate that renewable natural resources are not being used in a sustainable manner. Proper management for sustainable use of wild species must be developed to meet the needs of people, while protecting renewable natural resources and ecosystems.

Unsustainable renewable natural resource use practices are having an adverse effect on protected areas. As resources are depleted in unprotected areas, demand and pressure on protected areas mounts. This pressure constitutes a threat to the integrity of the ecosystems in which protected areas exist.

To respond to these needs, IUCN is developing a policy for the sustainable use of wild species. It responds to the targets set by *Caring for the Earth* for all countries to adopt guidelines for

sustainable use of wild species by the year 2000. The draft was prepared under the auspices of IUCN's Sustainable Use of Wildlife Programme and the SSC Specialist Group on Sustainable Use of Wild Species. The purpose of the workshop was to review and revise the draft policy and consider its implications for protected area managers.

Approximately 50 people from a range of nations attended the workshop. They represented indigenous people, conservation NGOs and government agencies, the pet trade, the social science disciplines, sport hunters, fisheries, protected areas, wildlife management, and aid agencies. The workshop consisted of plenary sessions and working groups, following a two-day preparatory workshop. None of the papers submitted to this workshop were presented due to the nature of the workshop.

Conclusions

The workshop identified potential benefits from the sustainable use of wild species, including:

a. Enhancement of the economic values of species and habitats, including an assured supply

of resources vital for the economic and cultural survival of the people that use them.

b. Recovery of over-used populations.

c. An incentive to conserve or enhance utilized wild populations and their habitats.

d. Conservation of the species and ecosystems with which the utilized species co-exists.

The following conclusions were supported by the workshop:

a. A sustainable use policy should cover all wild species rather than particular groups of taxa or commodities.

b. Utilization of wild species should be based on the principles of sustainability; equitable distribution of benefits; avoidance of waste; and protection of animals against avoidable cruelty.

c. Sustainable use is best promoted by circumstances in which users have long-term rights and responsibilities in the management of resources concerned. Resource management systems should closely link uses, benefits, authority and accountability.

d. *Caring for the Earth* defines "sustainable use" as "use of an organism, ecosystem, or other renewable resource at a rate within its capacity for renewal". This definition should be expanded as follows: "use of an organism, ecosystem, or other renewable resource at a rate within its capacity for renewal and in a manner compatible with conservation of the diversity and long-term viability of the resource and its supporting ecosystems".

e. The policy should contain criteria that provide a standard for evaluating the ecological sustainability of a use of a wild species.

f. Minimum operations requirements should be developed setting out the conditions necessary to fulfil the criteria.

g. Guidelines should provide direction for achievement of the requirements. The guidelines will provide a framework adaptable to the wide range of uses, the diversity of species, and varying political and cultural characteristics of each site. The guidelines are advisory and address four areas:

- Resource management
- Administrative framework
- Social and economic factors
- Building capacity and technical assistance

Resource management plans for protected areas in which sustainable use is an objective, should incorporate the sustainable use policies and guidelines. Relevant application may include:

a. Monitoring uses of wild species to ensure that they are maintained at levels which are sustainable.

b. Reviewing current programmes and practices involving the uses of wild species and modify them to ensure their sustainability and conformity with acceptable practices and standards.

c. Developing resource management plans for use of species according to the category of the protected areas (e.g., for use of species by communities in buffer zones around national parks, for hunting in game reserves).

d. Providing technical assistance to communities around protected areas for surveys of target species, monitoring, planning, and administration.

Outputs and Follow-up Action

a. The provisional revisions of IUCN's policy for the sustainable use of wild species will be used in preparation of a second draft. The text will be submitted to the IUCN Council for adoption. The guidelines will then be published and disseminated.

b. IUCN will provide technical assistance to local institutions in the implementation of the policy, especially in the context of support to protected areas.

Papers Submitted

ALMANZA V., Ricardo, Eric RODRIGUEZ, Ramon ALVARADO and Eysel CASTILLO. El Aporte de las Areas Protegidas en el Proceso de Planificación Regional de la Provincia de Bocas del Toro, Panamá.

AMMOUR, Tania, Tomas SCHLICHTER and Guillermo DETLEFSEN. La Aplicación en Campo del Concepto de Desarrollo Sostenible a las Estrategias de Conservación.

BILALA, Olivier. Valeur et Menace de l'Utilisation de la Viande de Brousse au Gabon.

EDWARDS, Stephen R. Sustainable Use of Wild Species.

GHERSI, Fernando. Plan Director del Sistema Nacional de Unidades de Conservación del Peru (SINUC), una Aproximación desde la Diversidad Biológica.

GRAINGER, John and Othman LLEWELLYN. Sustainable Use: Lessons from a Cultural Tradition in Saudi Arabia.

JOUBERT, Eugene. Ownership of Huntable Game as an Approach to Conservation in Namibia.

LUNGU, Fidelis and Richard BELL. Parks and Wildlife in Zambia: The Rural Industry of the Future.

OKUA, Moses. The Management of Protected Areas under the Uganda Game Department.

O'CONNOR, Sheila and Olivier LANGRAND. Can Wildlife pay its way in Madagascar?

ROY, S. Deb. Protected Areas for Human Use - Should it be Allowed?

SANTACANA, Josep. Delimitación de la Problemática de la Protección de la Naturaleza en Catalunya.
SEIBERT, Stephen F., Jill M. BELSKY and Kurnia RAUF. Rattan Management for Sustainable Live-

lihoods and Forest Conservation: The Case of Kerinci-Seblat National Park, Indonesia.
SYLLA, Seydina Issa. Pour une Strategie Nationale de Gestion des Ressources Vivantes au Senegal.



Workshop IV.9

Interpretation in protected areas

Chair: Partha Sarathy
Vice-Chair: Frits Hesselink
Organizer: IUCN Commission on Education and Communication (Wendy Goldstein/Allan Fox)
Rapporteur: John Smyth

Overview

Protected areas are generally designated on the basis of criteria derived from specialised knowledge of their landscape, ecology, flora and fauna, cultural history and current use, related to similar areas elsewhere and to their surroundings. These specialised criteria have to be explained to people of many persuasions in order to gain support for the measures necessary to establish and maintain protected status, hence the need for interpretation.

This workshop examined techniques that have been used to influence the protected area visitor's perception about conservation and increase visitor satisfaction, thereby building greater support for protected areas.

An introductory period of short presentations was followed by group discussions on interpretation methods with individuals submitting summaries of successful programmes as a record of the state of the art. The workshop then discussed needs and actions for the next 10 years, first with contributions from a panel and then by working in small groups. The final session provided an opportunity for people to share case studies.

The workshop attracted over 100 participants from 40 countries with a wide range of professional experience including government departments, park authorities, wildlife and forestry services, academic institutions and non-governmental organizations of several kinds.

Conclusions

Protected area authorities will generally have to direct their interpretation services towards

at least three categories of people, each of which requires a different approach:

- People resident within the protected area, or in some cases displaced from it as part of its protection.
- Visitors to the area, drawn to it by its particular qualities.
- National and local authorities and the public at large, on whom it will depend for legislative, financial and social support (this latter audience was the topic of workshop I.7).

Interpretation facilities, resources and programmes are integral to the establishment and maintenance of protected areas. They should be planned and designed at the very outset of park development. Interpretation staff should be given proper seniority, reflected in working conditions and remuneration relative to other staff. They should have access to expert support from other national and regional institutions. Careful studies should be undertaken of the particular characteristics, attitudes and capacities of the different target groups concerned with the location. Interpretation models developed elsewhere should be carefully adapted to local conditions, using—to the maximum extent possible—local residents in designing and conducting programmes. Visitors should be given a "real" experience that reflects conditions of life in the area (and their costs). Interpretation should help to develop in visitors a sense of their own responsibility for environmental quality, and extend beyond physical and mental aspects of park experience to emotional and spiritual ones.

The workshop recommended that:

- Protected area organizations and conservation organizations commit themselves to set-

ting an example of compliance with the principles of sustainable living in their management practices and by extending these principles to the users and suppliers of these resources.

- National governments be informed that the interpretation of protected areas is a high priority of management and that training in interpretation should be mandatory for all planners.

- Governments be encouraged to engage experts to train interpretation staff and to facilitate the exchange of information between park staff and local people.

- IUCN encourage the provision of financial support for preparing and implementing interpretation or in a broader context, education plans; and that protected area education programmes should extend beyond the protected area into the local community and contribute to building a constituency for protected areas in the nation.

- IUCN strongly advise governments to ensure that high quality interpretation is integrated with tourism.

- The professional status of staff interpreters be rewarded with suitable social and economic rewards, and be of equal status to those employed in resource management.

- IUCN support the decentralisation of national programmes for protected areas and the cooperation of NGOs to work together with surrounding local communities in park programmes.

- The development of an understanding of demographic issues and their impact on environmental resources be implicit in all education programmes.

- IUCN commend national authorities for providing interpretative programmes for disabled and old people, and for the provision of integrated information to all levels of park users, particularly school groups.

- IUCN facilitate the expansion of training in interpretation to increase awareness of materials and methods, and particularly ensure that education is an integral part of wildlife and park programmes; and that IUCN develop regional training programmes in interpretation (planning and operation) for South and Central America.

- IUCN facilitate the sharing of information about the evaluation of protected area interpretation programmes and plans, and support the development of volunteer programmes and the training of volunteers to undertake effective interpretation programmes. IUCN should facilitate the exchange of information on materials and methods of successful protected area interpretation programmes. All information

provided from international sources needs to be presented in the language of the recipient country.

- IUCN clarify the distinction between environmental education and Interpretation and Extension.

Outputs and Follow-up Action

- A book will be prepared based on the workshop papers and requested contributions. The book will cover the scope of both workshop I.7 and IV.9. Its target group will be protected area managers, conservation NGOs and protected area educators, students and training colleges for protected area managers.

- A second publication, including practical techniques for managing visitors is also proposed.

- The IUCN Commission on Education and Communication (CEC) propose to set up a working group to facilitate and where needed implement training programmes in protected area interpretation/education. Members of the workshop will be requested to join this working group and be invited to join the CEC to plan and implement training programmes. A survey to assess willingness to participate and to establish the requirements of the training programme will be carried out. As a strong request for training came from South American countries, which will probably be the site of the first programme.

Papers Submitted

BERKMULLER, Klaus. Information versus Education at Protected Areas.

CHANDLOOL, Neemedass. Environmental Education Programs in Trinidad and Tobago.

CRAIG, Alan. Perceptions of the Role and Location of Visitor Centres: Experience from Ireland.

CROSS, Robyn. Protected Areas in Trinidad and Tobago: Current Status and Prospects for the Future.

DE LA ROSA GARCIA, Jose Luis. El Parque Nacional de Teide; Interpretación en un Espacios Natural Protegido, Masivamente Visitado.

DIJUN, Karkaria. Capacity Building for Interpretation in Developing Countries: A Case Study of India.

FRANQUESA, Teresa and Susana CALVO. Protected Natural Areas, Environmental Education and Conservation.

IAM, Sam. Strategic Audiences for On-Site Interpretation in Developing Countries: Implications for Foreign Training and Technical Assistance Programs.

LOOMIS, Laura A. Education Initiatives: Bridging the Gap between Education and Interpretation.

McAVOY, Leo and Stuart SCHLEIEN. Effects of integrated interpretive programs on persons with and without disabilities.

McCORMACK, Gerald. Cook Islands Natural Heritage Project.

MOKANDLA, Rex B. Wildlife Clubs and Community

Involvement in the Development of Protected Areas in Botswana.

SICHILONGO, Mwape. The Work of the Wildlife Conservation Society of Zambia (with emphasis on Environmental Education).

SZALAY-MARZSO, Eniko. Overview of the Role of Environmental Education in Eastern Europe: Past - Present - Future.

WATSON, Michael D. Managing a National Interpretation Program.



Workshop IV.10

Institutional options for managing protected areas

Chair: Jim Barborak
Organizer: University for Peace, Wildlife Conservation International, CCC, IUCN (Jeff McNeely)
Rapporteur: Jim Barborak

Overview

This workshop had two main aims:

- To share the individual experiences of participants from around the world in managing individual protected areas and protected area systems using a variety of institutional structures and arrangements.
- Based on our collective experience on institutional options under varying conditions, to search for general principles which should guide decisions regarding the most appropriate institutional structures for protected areas of different management categories, sizes, levels of protection, and within distinct socioeconomic, political and cultural settings.

The workshop was attended by a total of 56 registered participants who presented 25 papers. The participants came from all continents and included national park system directors, superintendents and senior staff of individual parks and reserves, university researchers, planning officers for park systems, and representatives of non-governmental conservation groups responsible for total or partial management of protected areas.

Following a summary of the overview paper, the workshop addressed three principal areas of inquiry:

- a. Appropriate roles for and relationships between public agencies of varying levels of au-

tonomy (including parastatals), non-governmental non-profit groups, for-profit private enterprises, and private and communal land owners in management of protected areas.

b. Vertical integration of protected area systems including the relative role of local, regional, national, and supra-national agencies in managing protected areas.

c. Inter-institutional relationships for management of individual parks and reserves and systems of protected areas.

These areas of inquiry were succinctly referred to as "institutional primacy, hierarchies and partnerships" for protected area management.

Copies of the draft Congress Recommendation on Building Protected Area Institutions were distributed to all workshop participants. They were asked to write down any suggestions for improving it, and to briefly outline what they thought were the most important conclusions regarding institutional structures for managing protected areas. A small group of workshop participants reviewed all comments and drafted a revised recommendation.

Conclusions

A number of global trends in institutional arrangements for managing protected areas are occurring on most continents and in countries with quite distinct culture and history. These include the following:

- The shrinking size of governments and government budgets compared to the task at hand of strengthening growing and increasingly threatened protected area systems.
- The devolution and decentralization of power and decision making and management away from central bureaucracies and to field offices and parks, subnational levels of government, and the private sector.
- More active participation by interested and affected citizens and organizations in the decision-making process for protected areas management.
- A greater role for the private non-profit and for-profit sectors in management of protected areas.
- The growth of more complex management structures for individual protected areas and protected area systems, involving partnerships for stewardship of individual parks and park systems

While these trends are obvious, the extent of regionally, locally, and privately managed protected areas and their contribution to the global protected area estate have not been monitored, studied in any detail, or listed in major protected area directories. Hence, the participants agreed that:

- Greatly increased investments in training courses, conferences, technical assistance and research projects on the broad theme of institutional arrangements for protected areas management by the international donor community are required.
- Closer cooperation between the protected areas community and leading research institutions on the themes of institutional/organizational design, privatization of public services, decentralization and devolution of authority to subnational levels, management of open access and commons resources, etc., is also needed.
- More efforts are needed to monitor and analyze the history, status, and trends in local, regional and private protected area networks and their relationship to those systems managed by national governments.

Outputs and Follow-up Action

- a. IUCN should launch a task force and research project on institutional options for managing protected areas and publish a concise handbook or manual on this theme. The manual would include an integrated overview paper, regional overviews, revised versions of those papers presented at the workshop with the broadest regional scope and practical application, and at least one paper on performance

issues. It could possibly include the abstracts of papers presented in this workshop and a list of its participants.

b. CNPPA should consider holding some regional workshops on the theme of institutional options for protected area management. The regional workshops could review a previously prepared draft overview section of the handbook, and prepare the regional overview paper for each of several regions (e.g. U.S./Canada; Europe; Latin America; Francophone and Anglophone Africa; Asia). The workshops could also discuss the problem of how to strengthen national and regional training centres so that they can incorporate this important but overlooked theme in their training programs.

Papers Submitted

AIIMAD, Ashiq. The Feasibility of Different Management Options to Resolve the Problems of Khunjerab National Park (Northern Areas) in Pakistan.

ALVAREZ, Juan Marco. Apoyo Privado al Servicio de Parques Nacionales de El Salvador: El Caso del Parque Nacional El Imposible.

BARBORAK, Jim. Institutional Options for Protected Areas Management.

CHALABI, Bouzid. Situation Passée et Actuelle des Parcs Nationaux et des Aires Protégées en Algérie.

DIAMANT, Rolf. Will the Last Piece of the Puzzle ever Fit? Category V Protected Landscapes in the US.

DRYSDALE, Clifford. Resource Management Process and Implementation in the National Parks of Atlantic Canada.

EDWARDS, Ron. The National Parks of England and Wales: Fit for the Future.

FLETCHER, Raul. Coordinación Interinstitucional entre el Sector Público y Privado para la Consolidación del Sistema de Parques Nacionales.

FOWKES, John and Sandra FOWKES. Appropriate Rules for the Private Sector in Ecotourism Development in Protected Areas in Less Developed Countries.

HARWOOD, Laurence H. The UK National Trust for Places of Historic Interest or Natural Beauty.

KERR, A.J., M.B. USIHER and S.D. WARD. The Challenge of Protecting Scotland's Natural Heritage.

MACHADO CARRILLO, Antonio. "Parques Insulares", una Propuesta para las Islas Canarias.

MENGANG, Joseph and Joseph B. BESONG. La Gestion des Parcs Nationaux et des Reserves de Faune du Cameroun.

PARRIS, Dick. The National Parks Board as an Institutional Model for Managing Public Protected Areas.

PERKIN, Scott L. and Paul J. MSHANGA. Ngorongoro: Seeking a Balance Between Conservation and Development.

RAKOTONINDRINA, Raymond. Aspect Institutionnel de la Mise en Oeuvre de la Politique de Gestion des Aires Protégées à Madagascar.

RUIZ, Gustavo E. Ecología Organizacional: Redes Emergentes en los Países en Desarrollo.
RUIZ, Juan Pablo. National Parks and Wildlife Policy in Colombia.

SERRANO, Francisco. Los Parques Nacionales y la Reforma Agraria en El Salvador.
WHITEHOUSE, John F. Organizational Structure, Mandate and Strategy for National Park Agencies.



Workshop IV.11

Cost recovery and revenue enhancement

Chair: Douglas K. Eiken
Organizer: US National Park Service and Association of State Park Directors
Rapporteur: Ney Landrum

Overview

The workshop aims were to:

- Involve protected area administrators from different parts of the world in a dialogue to identify problems and solutions to the issue of cost recovery and revenue enhancement.
- Begin to develop a body of knowledge, principles and case studies which will assist managers in dealing effectively with these issues.
- Start to develop a workbook which addresses the topic.

About 35 people attended the workshop, primarily administrators of national, provincial, and state parks and protected areas. The initial session was devoted to the presentation of papers and case studies from state parks of the United States, Canada and other international groups. The second session was an open forum, characterized by information sharing, problem solving, developing cost recovery and revenue enhancement principles and suggesting a plan of action for the future.

Conclusions

The following principles for the implementation and application of cost recovery and revenue enhancement were agreed:

- a. Governments must recognize and accept their financial responsibilities for monitoring, research, education and stewardship of their designated protected areas, over and above the income potential of those areas.
- b. The direct beneficiaries of protected area values should pay a fair share of the costs of

providing necessary services and should be made aware of how their fees are being used for that purpose.

c. Private, direct beneficiaries of protected areas, such as the tourism industry, should contribute to the recovery of park operating costs.

d. User fees should reflect a realistic analysis of operating costs with consideration given to local economic circumstances, other local conditions, nearby alternatives and management objectives.

e. Provision for revenue enhancement and cost recovery should be considered early in the planning process for protected areas.

f. Fee collection systems and alternatives should complement protected areas management objectives and economics.

g. All revenues should be used specifically for protected area purposes.

h. System-wide stewardship requires an equitable distribution of user-fee revenue, regardless of source. However, consideration should be given to returning a portion of the revenues to the specific protected area where it was generated, in order to better motivate park management and improve the morale of park staff.

i. In categories of protected areas where sustainable utilization of natural resources is permitted, a reasonable portion of the proceeds obtained from the utilization of these resources should be dedicated for area stewardship.

Stewardship of protected areas must not be compromised and should be vigorously supported with all available means, including gen-

eral government funds, dedicated funds, corporate and non-profit grants, volunteers, user fees and other protected area revenues. While user fees cannot be a substitute for the government's fundamental commitment which accompanies protected area status, it is recognized that these fees can make a significant difference in the level of stewardship. It is also recognized that user fees support has not been fully explored, and many agencies generally under-estimate its potential.

Outputs and Follow-up Action

Since no existing publication addresses this particular topic in the detail necessary to be effective, information about cost recovery and fee systems should be provided by all available means. Specifically identified needs include a source book of case studies, an information clearing-house and future international fora on these subjects. The eight papers presented form a useful and valuable start, but are not sufficient to form this publication. The two organizing groups and the World Bank expressed interest in working together to carry the issue forward and follow-up the workshop. All ap-

propriate entities should give priority attention to this important need.

Papers Submitted

BASBAUM, Marcos, Mauricio LOBO and Axel GRAEL. Case Study: Government and Private Companies Together to help Nature.

EIKEN, Douglas K. Revenue Programs for State Parks of the United States.

HEYMAN, Arthur M. Financing Parks and Protected Areas: Experience from the Caribbean.

JOHANNSEN, Neil C. Developing New Parks for Cost Recovery Programs.

LANDRUM, Ney C. The State Park Systems of the United States - An Overview.

LAPAGE, W.F. America's Self-Funding State Park System - the New Hampshire Model.

LECLERC, Antoine. User Fees in Natural Parks - Issues and Management.

PARRIS, Dick. The Natal Parks Board's Funding Mechanisms: A three-pronged Approach.

THOM, David. Revenue Enhancement and Cost Recovery for Protected Areas in New Zealand.

WALKER, Susan. Attempt at Financial Self-Sufficiency: The Case of the Saba Marine Park, Netherlands Antilles.



Workshop IV.12

Data for managers

Chair: Claudia Sobrevilla
Organizer: WCMC (Jeremy Harrison)
Rapporteur: John Shores

Overview

The aim of the workshop was to discuss the current approaches to satisfying information needs at the protected area level and recommend a course of action. Attendance at the workshop ranged from a high of 33 participants to a steady working group of 24. Approximately 60 percent of the working group participants came from institutions where computerized information management systems were in place. The workshop also attracted a smaller number of individuals from institutions contemplating the development of information systems. Ten working group participants were from develop-

ing countries. The Western Hemisphere was the region best represented.

The workshop opened with a period of ten brief presentations followed by questions and answers. After each presentation, discussion points were raised and recorded on a flip chart. The full group then broke into three smaller discussion groups. Discussion was free-form, but guided by a set of questions. On the second day, the rapporteur for each of the three discussion groups reported to the full workshop, followed by a more general discussion.

Conclusions

The workshop participants expressed strongly the conclusion that information is a vital ele-

ment in the conservation of biodiversity and in broader resource management issues. The major need is for additional support at the national and at the park level to design and maintain information systems that support effective decision-making.

To promote the use of information in management, decision-makers should be closely involved in the design of systems and the information systems initially should be demand-driven. The desire for standardization should be balanced against the requirement to meet the needs of specific decision-makers. However, information centres should also be charged with the task of expanding their client base by promoting and marketing their products among wider audiences to reach new decision-makers. Comparable information should be made available to all stakeholders in the decision processes affecting natural resources and biodiversity.

The philosophy of information systems should be to empower decision-making at progressively lower levels in the administrative and political hierarchy.

Information should be managed in systems involving at least two levels, the national level and the park level.

- At the national level, the national centre should be primarily a service unit for the park-level information centres. This function would include technical assistance, training, programming, maintenance, etc.
- At the park level, the park information centre would be the principal compiler and maintainer of information covering the park and its region of influence.
- Other levels of integration may be required in specific cases. For example, small island nations would benefit from a regional support centre covering a number of separate countries. At the other extreme, a larger country may find it convenient to establish sub-national centres (for individual states or groups of states or provinces)

One of the crucial decisions facing would-be implementors of protected area information systems is the path or process to follow in designing a system. The workshop participants agreed on certain basic elements of the appropriate process:

- Analysis should begin with the existing information system without making assumptions about what kind of a system is appropriate. Pre-conceived notions should be avoided.
- To increase acceptability and use of a new information system, it must mimic the existing system as closely as possible. An effort should be made to use existing forms and report formats as much as possible.

- Both the new system and the old system should be operated in parallel during a significant shake-down period to demonstrate that the new system is capable of providing at least the previous level of functionality and reliability.
- Data collection and analysis should support, not replace, decision-making.

Given the wide variety of levels of funding, human resource capacities, data availability, equipment budgets, and maintenance at the national and park levels around the world, a correspondingly wide range of information management systems should be developed and disseminated, from manual filing systems to more progressive levels of sophistication and complexity. Simpler systems should be disseminated more aggressively.

Further development of appropriate low-technology information systems is needed to create adequate information management capability at the park and grassroots levels. Although much of the attention recently has focused on complex high-technology systems, information management is still vitally needed in settings that cannot currently support these technologies. Appropriate systems that use less-complex technology (including card files, paper forms, entry-level computer systems, etc.) must also be made available and their use encouraged.

Training and technical assistance in information systems design and use should be tailored to the specific needs of each protected area. However, robust and reliable methodologies to collect, analyze, and use data at the site level are more urgently needed than highly sophisticated technologies that might be more appropriate at the national level.

To ensure accuracy, timeliness, and usefulness, managers of information should endeavour to have data compiled, analyzed, and maintained at the level where decision support is needed.

To encourage the exchange of information, researchers and protected area managers should agree on a policy that endorses freedom for science and benefit to the protected area. Particularly as protected areas are being called upon to serve as sites for long-term ecological monitoring, cooperation between scientists and managers is crucial. Protected area managers need to develop guidelines for research procedures in protected areas so that science supports not only the purposes of park management but also the broader social purpose of expanding knowledge. These procedures should also establish the means for ensuring the availability of data in both raw and processed forms needed for park management.

Communications will increase in importance. Information and services will need to flow up

and down the vertical hierarchy of information centres or nodes (global <-> regional <-> national <-> sub-national) and also laterally among information centres at the same level. This can be institutionalized and encouraged by agreeing to designate a lead centre for the compilation and maintenance of particular data or the development and maintenance of specific modules for information management and analysis.

Guidelines and procedures on data ownership, access, and exchange should be written. These should include openness of data; information exchange should happen in all formats, not just final publications.

The workshop recognized different approaches to standardization. Information systems should use standard classification and categorization protocols whenever possible. A special effort should be made to develop methods for collecting socio-economic data. Methods to collect biological and ecological data are better established and applied world-wide. Standardization of formats and data structures is more difficult to achieve, but the participants recognized that certain benefits — especially programmes maintenance and data exchange — are greatly facilitated by common data structures. Standardization at the software and hardware level was not considered a requirement or a problem.

The workshop concluded that although information systems are a vital element for decision making, but they have been under-utilized in protected area management to date. Opportunities exist for greatly expanding the use of protected area information systems; international organizations should take the lead in promoting the development, use, and long-term support of protected area information systems. The principal focus should be park-level information systems where these installations are feasible, recognizing that national and regional

centres will play a significant role in providing training and technical assistance to the park level.

Outputs and Follow-up Action

- Two publications are expected to result from the workshop: Guidelines for developing protected area information systems; and Case studies of actual applications of park information systems. The case studies should include examples of the full spectrum of available technologies for information management at the park level, from low-technology paper-based systems to complex computerized systems.
- Other follow-up activities should include creating a Task Force on Protected Area Information Systems and convening regional workshops to assess regional needs and organization for protected area information systems.

Papers Submitted

- D'OLEIRE-OLTMANN, W. Methods and Data Management of the Applied Ecosystem Research during the MAB6-Project, Berchtesgaden, Germany.
- PALACIOS S., Graciela. Aplicación de Programas Científicos Relacionados con la Conservación y Protección de Parques Nacionales y otras Áreas Protegidas.
- PARDIL, Silvia. Dos Ejemplos de Uso de Teledetección Espacial en la Conservación de Áreas Naturales de Venezuela.
- RODRIGUEZ-SAENZ, Mario. How to Apply Remote Sensing Techniques for Protected Area Management.
- ROMERO M., Claudia. El Sistema de Información de Parques Nacionales (SIPN), Colombia.
- RUIZ, Lucía del Valle, Aristobulo MARANTA and Rodolfo BURKHART. El Banco de Datos del Sistema de Áreas Protegidas de Argentina.

Closing Ceremony





Closing Ceremony

Onward from Caracas

By
Jeffrey A. McNeely
Congress Secretary General

I recall Woody Allen saying: "More than at any other time in history, mankind faces a crossroads. One path leads to despair and utter hopelessness. The other to total extinction. Let us pray that we have the wisdom to choose correctly."

I hope that we will have the wisdom to find a third path, and in meeting with you over the past two weeks, I was impressed that so many people — over 1800, from 133 countries — came to Caracas to work on mapping that path. As the Congress draws to a close, we have taken several significant steps in a continuing process of evolution, of adapting to change.

One exciting change is in the way that we are thinking about protected areas. In the old days, managing protected areas was essentially a policing task, and local people were seen as a management problem. Then we recognized how important science was to our profession, and nature was often seen as the main management challenge. Our Congress here in Caracas has made it clear that the park guard and park naturalist are being joined by the park community affairs officer, and earning the support of local people is being seen as a management opportunity, as well as a challenge.

Some people, with a conservative perspective on conservation, may have been worried that we were in danger of "diluting conservation" by inviting so many seemingly disparate interests to Caracas. I hope that by now everybody realizes that this diversity of interests and breadth of support is our salvation. In a sense, this meeting has brought protected areas managers together with our "customers," with our "market," with our constituency, with our future.

Is this too radical a way to look at our business? Or is it high time we started thinking in terms of customers and markets and constituencies for protected areas? I think that this Congress has convinced most of us that social, cultural, economic, and political issues are not peripheral to our business, but central to it.

Some have been concerned that this broader focus might blur our basic conservation objectives. But accepting the premise that we need

to be more aggressive in marketing the goods and services of protected areas does not mean opening them up to all comers, any more than a banker would seek customers by opening the vault. Rather, a wise protected area manager, like a wise banker, uses the park's assets as a base upon which to build customer satisfaction, investment, and interest.

Many have expressed frustration about insufficient government investment in protected areas. New responses to this frustration have included innovative funding mechanisms, and giving more responsibility for protected areas to NGOs, to the private sector, to local communities, and to land-owners. This is all to the good, for conservation is everyone's business. But we must not let governments off the hook too easily. Protected areas are as essential to the welfare of society, as legitimate a public investment, as defence, communications, justice, health, and education. Protected areas benefit the nation — that's why some of the best ones are called "national parks." So the governments must pay their fair share of the bill and provide the incentives that will keep qualified staff on the job.

Having said that, we need to consider two other funding points. First, the international community also has a responsibility to support protected areas, because protected areas provide benefits to the entire world. The fact that so many people from banks, foundations, and aid agencies have joined our Congress demonstrates their willingness to listen. We have learned that the Global Environment Facility could provide hundreds of millions of dollars for conservation, and we feel glad that some of this money might help protected areas. But let us not forget the tens of billions in official aid that are being spent in ways that are directly contrary to the objectives of protected areas. So do not expect foreign aid to solve all our problems — the problems often lie with the governments themselves, and the priorities they establish for public policy. The exploration of outer space costs an estimated 20 billion dollars a year — is it too much to expect a similar amount to be spent on conserving life on Earth?

At the local level, the wise protected area manager will also broaden the base of financial and political support, seeking ways to find the additional funds needed to manage the park more effectively, and to spend the available funds more carefully. Why install a sophisticated GIS system to monitor habitat changes if protected area staff don't have equipment, housing, and transportation?

We have also learned that the wise manager also has far more women involved in protected area work. While few will be satisfied that we yet have enough, it is encouraging that the important role of women in natural resource management is finally being recognized for the positive force it provides in conservation. Perhaps the female symbolizes the continuity of regenerative power inside all change. This regenerative power becomes increasingly important as society becomes more worried about the state of our planet.

We have heard about the futility of trying to conserve five percent of the planet when the other 95 percent is going down the drain. This is rather like a hospital that has only an emergency room, with no maternity ward, no orthopedic section, no pediatric unit, no therapeutic care, no public health facilities, and no outpatient clinic. We certainly need the emergency room, and as the world becomes more like a big city, we need well-equipped and well-staffed emergency rooms more than ever. But we will also need the rest of the hospital if we are going to treat the ills of our sick society — our emergency rooms, our protected areas, can provide only part of the answer. To build the entire hospital, we must seek closer collaboration with other government agencies, and we must call on the people in surrounding lands to manage their

land better so that the more strictly protected areas can meet the needs of a sustainable society.

And we agreed that the indigenous people of Latin America and the world deserve particular attention, in recognition of the important contributions they can make to protected area management and the conservation of both cultural and biological diversity.

A number of people have asked me how IUCN is going to respond to the tremendous up-welling of interest in protected areas that this Congress has stimulated. My response? It is up to you. For you are IUCN, as members of Commissions, as staff of IUCN member organizations, and as participants at this Congress. Our small Secretariat will do everything it can to support your efforts, but the responsibility for converting the energy generated at the Congress into real action on the ground ultimately rests with you. And this is as it should be, because we need diversity in our approaches to conservation, just as we need diversity in nature. And for the same reason: a diversity of approaches gives us the best chance to adapt to the changes that are certain to come.

So as we look forward to a challenging decade, we can take strength from the friendships that we have formed, the ideas that have been stimulated, the information that has been exchanged. We are all worried about the future of our planet, seriously worried. But we can take solace in having friends and colleagues like you to help shoulder the burden of our worry. I thank all of you for your hard work and your many contributions, and I look forward to working with you so that tomorrow's reality can be influenced by our vision of a harmonious relationship among people and the rest of nature.



Closing Ceremony

Conclusions from the Congress

By
Martin W. Holdgate
Director General
IUCN - The World Conservation Union

I speak on behalf of IUCN, the World Conservation Union, and in this brief address I want to do three things:

- first to say why I think this Congress has been important;

- second to speak briefly about the Congress Declaration;

- and third to express our warm thanks to all those who have made the Congress possible.

Twelve days ago, when the Congress began, we reminded ourselves of the great issues that confronted our world. Poverty. Inequity. The erosion of the world's natural resources and biological wealth. The threat of climate change. All stemming above all from the failure of our human species to live in harmony with the nature of which we are a part.

We reminded ourselves that the lack of sustainable development, in both the developed and developing countries, lay at the root of our problem. The waste of resources and pollution of the biosphere in the North is every bit as much a manifestation of unsustainable development as the increasing pressure on the environment of the growing populations and widespread poverty in the South. And we know that one difference is that the developed countries have the power to change this situation — if they have the will.

Against this broad canvas of need, national parks and other protected areas can easily be dismissed as no more than a facet — a small part — of the issue. But this meeting has satisfied me that they are not. I suggest that we have all learned three things:

- first, that protected areas are **important** because they not only safeguard areas of great spiritual and inspirational value, but protect resources vital to the future of us all — vital to agriculture and medicine in a changing world;
- second, that protected areas are about **people** — the people who live in them, often as examples of sustainable cultures from which we have much to learn, and the people who come from afar to wonder and delight;
- third, parks alone are not enough. They are an essential part of wider policies for wise land use: of national strategies for sustainable development.

The Declaration from this meeting emphasizes these values. It emphasizes that well-managed protected areas are of vital importance to all people. In it we recognize that the nature that encircles us and of which we are part is the foundation of all our lives. Its erosion diminishes us all and threatens our children's futures.

So — we have to act. Part of our Declaration rightly emphasizes the vital role of protected areas in preserving irreplaceable riches of the Earth for our futures. It lists attributes and services that protected areas can provide — not comprehensively, for the list would be endless, but as illustration. It stresses our responsibili-

ties and calls upon us all — as individuals, in local communities, in governments and in international organizations — to fight for a better world, founded on a loved and cared-for environment.

The Declaration is only one of the products of this meeting. The Action Plan, the Recommendations and the reports of the workshops are others. But the most valuable product of these twelve days will come from the new visions we have given to one another — the knowledge exchanged, the skills shared, the contacts made, and the commitment reinforced. We spent some time arguing about whether it was arrogant for us to call ourselves "leaders" of world conservation. I say to you that all who leave this Congress must try to be leaders, taking our new knowledge and insight to the millions of people we can influence in the wider world.

Let me close with thanks — and a pledge.

Thanks to you, Mr President, for the hospitality of Venezuela. To Minister Colmenares Finol, to the Chair of our Local Committee, Dr Cabrera Malo and his colleagues, to our local volunteer helpers, to the management and staff of this Theatre and the hotels we have met in, to the interpreters who have struggled to bring minds nurtured in different cultures and tongues into contact. We truly and sincerely thank you all.

I said I would end with a pledge — a promise. It is this. That we in IUCN will not let the impetus this Congress have given us die away when we return to our diverse everyday tasks. We will bring the Caracas Declaration, Recommendations and Action Plan to the attention of all our members. We will review our programmes and strengthen them to implement the decisions taken here. We will strengthen the network we provide, especially through our Commission on National Parks and Protected Areas, to support the conservation movement around the world. We will increase our efforts to build closer and better communication with our members and fellow conservationists — especially in Latin America. We wish to be a true World Conservation Union — and the strength of a Union is the strength of its members.

And now, Mr President, permit me to hand you the Declaration of Caracas, asking you in the name of the participants to hand it to my friend and colleague Maurice Strong, with the request that he will make its words, and the words of the Action Plan we will send him as soon as we may, available to those who will climb from this and other meetings to the Earth Summit amid the peaks and clouds of Rio de Janeiro in June of this year.



Closing Ceremony

Protected areas and the Earth Summit

By

Maurice F. Strong

Secretary-General

United Nations Conference on Environment and Development

I am very grateful for the opportunity of participating in this important Congress, and pleased to return to Venezuela. I want particularly to pay tribute to the enlightened leadership that President Andres Perez has provided in both the environment and development areas for so many years. Indeed, he is one of the first world leaders even before the time of the Stockholm Conference, to recognize the importance of environment as a global issue and its relationship to the development needs and aspirations of developing countries. This leadership and commitment is evidenced by his presence here today and will, I know, make an extremely important contribution to the Earth Summit in Rio de Janeiro in June of this year.

I am also particularly pleased to have this opportunity to express my gratitude to IUCN. The World Conservation Union, for the valuable support and advice that it has afforded our Secretariat. IUCN has been as supportive of the ambitious and challenging preparations for the Earth Summit, as it was for the Stockholm Conference on the Human Environment in 1972. IUCN is clearly the paramount international organization in its field. Its unique character, uniting as it does both governmental and non-governmental professional organizations throughout the world, makes it an invaluable mechanism for leadership and cooperation in dealing with the issues on which the world community will be focusing at the Earth Summit. We are all particularly fortunate that at this time when the issues which IUCN has pioneered are finally receiving the attention of world leaders that the Union itself is led by such an outstanding team — Sir Shridath Ramphal as your President and Dr Martin Holdgate as your Director General. Individually they bring to IUCN experience and qualities that command universal respect and admiration; together they are an unbeatable team. I am particularly grateful that each, in his personal capacity as well as his official role, has given UNCED the benefit of his advice and wholehearted support.

This Congress is focusing on national parks and other protected areas which provide an indis-

pensable base for protection of the environment and natural resources of all countries. Indeed, extension of protected areas and strengthening their management is essential in effecting the transition to sustainable development. This is recognized in Agenda 21, the action plan for the 21st Century to be considered by UNCED at Rio, and the decisions taken there will, I hope, provide new impetus and support to your efforts to retain and maintain these critically important resources.

I understand that discussions in this Congress have been extremely constructive and I am most impressed with the range of the programme and the quality of the participants. The Congress has resulted in a number of practical proposals that will further enlighten the negotiations within UNCED and provide a very solid basis for the necessary strengthening of the global system of protected areas. The conservation of biological resources including wildlife is a major cornerstone in the integrated package that is Agenda 21.

Protected areas are the central banks of our reserves of biological and genetic resources. And I do not need to tell this audience that biodiversity makes a number of vitally important developmental and environmental contributions that are not accorded economic value but are critical to the future of our planet as a secure and hospitable home for future generations. From a global point of view, primary attention is now focusing on their contribution to human health and welfare through the derivation of new and improved food crops, development of pharmaceutical products, and improvement of biotechnological processes.

The harvesting and use of biological resources for immediate economic gain, if it is done in an unsustainable fashion, results in net destruction of the resource itself and exacts heavy environmental costs as well as economic costs which often greatly exceed the immediate economic benefits. Of course, sustainable utilization of biological resources is a valid and often necessary part of development, a point which is often made by countries with large virgin forest areas. Let us be clear, and realistic: until

nations and people that depend on biological diversity for their economic well-being can see that their economic interests are served by sustainable development of ecosystems, the accelerated loss of species will continue.

We are anticipating that the convention on biological diversity being negotiated under the auspices of the Intergovernmental Negotiating Committee on Biological Diversity will be ready for signature at Rio. This is complementary to the activities in Agenda 21. The Agenda 21 chapter on biodiversity, and all the other chapters and programme areas, are not mandatory actions but a framework to assist governments, inter-governmental and nongovernmental organizations to cooperate in carrying out the various actions required to deal with this important issue.

But, of course, protected areas cannot be considered in isolation from the regions that surround them, and the people that live in and around them. One cannot maintain these areas without addressing the causes that underlie the main pressures upon them. These come primarily from people striving to meet their own basic livelihood needs and others merely seeking to enrich themselves. As you have recognized in the proceedings of this Congress, these pressures are increasing and responding to them represents one of the principal challenges to the custodians of national parks and protected areas.

Of course, this requires increased support for management of these areas. But it also requires that their planning and management be integrated with the overall development process of the region in which they are situated. For this to be done effectively, the people of the region must appreciate the value of these areas to them and cooperate in their protection. And, in economic terms the value of protected areas can be significantly enhanced by a system of zoning, provision of infrastructure and incentives in the surrounding region to encourage development that complements and benefits from the presence of these reserved areas.

Indeed, this provides an important practical example of how integration of environment and development can better serve both environmental and developmental needs. This dual goal could be furthered by the establishment of sustainable development or ecodevelopment areas in which development of varying intensities and kinds would be encouraged which complemented and benefitted from the existence of contiguous national parks or protected areas. A promising example of this is now being developed by the Costa Rican government in cooperation with the Nature Conservancy in the Talamanca region and there are plans for establishing a corridor linking parks and protected areas in Costa Rica with similar areas in the neighbouring countries of Nicaragua and Panama.

A number of elements in Agenda 21 directly relevant to protected areas are included in the programmes related to biodiversity and forests which provide, for example, for the establishment, expansion and management of protected area systems, including national parks, so as to conserve forests and promote afforestation and reforestation. Additional relevant activities are to be found in other programme areas and cross-cutting issues.

When I look at some of the particular geographical areas that have been the subject of focus in your final plenary session, I see many links to Agenda 21: the Serengeti is linked not only to wildlife protection but to management of arid lands and poverty; the Great Barrier Reef to living marine resources and fragile ecosystems; the Himalayas to sustainable agriculture, mountain development and rural energy. And all of these are relevant to such key Agenda 21 issues as integrated land management and planning, human settlements, population, consumption patterns as well as the critically important issues of education and building of scientific, technological and institutional capacities.

Of particular importance is the relationship between the maintenance of protected areas and the interests of the indigenous and tribal peoples who are the original inhabitants of so many of these areas. Their livelihoods, their cultures and value systems have from time immemorial been intimately and inextricably linked to these important ecosystems. They have developed ways of life which were in balance with the natural environment in some of the most important and vulnerable of the planet's ecosystems -- deserts and arid regions, the arctic and tropical forests. It is important that in the establishment and management of protected areas the rights of such peoples be respected and their role as custodians of their traditional habitats be valued and supported.

Your theme "Parks for Life" encapsulates the main purpose of the Earth Summit: "the planet for life". The results of this conference offer a real contribution to preparations for Rio. Inevitably, with 115 programme areas to negotiate and develop substantially in the last five-week meeting of the Preparatory Committee that is about to take place in New York, we cannot deal with these issues at the level of detail, or with the range of expertise that has been one of the main attributes of this meeting. This meeting is an extremely valuable input to our own process of aiding governments by informing this next and vital negotiating session, of elaborating, and thus providing a more detailed package of necessary activities, working closely with the constituencies represented here who are to be key in their implementation.

As you know, one of the keys to success of the Earth Summit will be the extent to which the industrialized countries that have benefitted

most from the exploitation of the earth's resources and have contributed most degradation and the greatest risks to our common future are willing to enter into a new partnership with developing countries which ensures that they will have access to the new and additional financial resources and technologies they require to integrate environment with their development. This new partnership must be based on recognition that conservation and sustainable development of the natural resources of the South are indispensable to global environmental and economic security. This must be accompanied by a commitment by the North to ensure that developing countries have access to the financial resources and technologies they require to make the transition to sustainable development. Under current difficult economic conditions this will not be easy. The rich have never felt so poor. Yet, it will take but a modest portion of the resources now being released

through reductions in military expenditures to meet what is clearly the greatest insecurity ever — the risk to life itself and to the capacity of our Earth to continue to provide a secure and hospitable home for our species and the other forms of life which share our planetary home. I am persuaded that the re-ordering of priorities and re-deployment of resources required to ensure this is achievable. The real issue is one of political will.

This Congress provides persuasive evidence of the need for the leaders of the world gathered in Rio to commit themselves to the measures which will ensure the future of life on our planet. It is an historic opportunity, one we cannot afford to miss. I am greatly encouraged to have you as our partners on the road to Rio and in the road beyond Rio in translating its decisions into the concrete programmes and actions which will shape our common future.



Closing Ceremony

Closing address

By
Carlos Andrés Pérez
President
The Republic of Venezuela

Venezuela is lucky to have hosted the IVth World Congress on National Parks and Protected Areas and to have received in Caracas 1500 specialists from over 130 countries which, together with ours, are facing with fortitude the greatest challenge of mankind: the preservation of the essential elements and systems of the biosphere which make life on Earth possible. Their participation has enriched us with deep knowledge and experiences, and they deserve our gratitude.

I believe that the meeting has been very productive, due to its extraordinary ecological, economic and sociocultural thematic scope. It will certainly be an important step towards the strengthening of the institutions linked to the natural and human order, and the consolidation of the great universal alliance on behalf of this noble cause.

It has been exalting and gratifying to take this step in our capital city, not only for the honour that this implies, but also for the great

opportunity it represents for us to contribute to international cooperation.

"The Caracas Declaration" is one of the most significant results of the deliberations carried out during this Congress. It is a clear and coherent expression of ethical principles and sensible warnings for communities to decide about living in harmony with nature. It acknowledges that the sustainable development we all long for depends on that harmony, and it strongly emphasizes the pressing need to eradicate the critical poverty because, as long as it lasts, there will be no conservation, no justice, no freedom and no peace in this world. This declaration also states the need to adopt new patterns of growth that do not waste or damage the natural resource base, and that the technologies may represent new equitably accessible options for the entire international community, especially for the developing countries.

No less valid are the reaffirmations, calls and exhortations to governments, local authorities,

international institutions, non-governmental organizations and the private sector on the geopolitical, cultural, economic and social importance of national parks and other protected areas. We all agree that they should be part of plans, programmes and development projects, ensure the participation of the communities, and be well managed. This is one of the most underestimated and neglected aspects of this issue in many of our countries.

Other guiding key comments of the declaration are those which refer to the support of a policy on protected areas that takes into account the customs, traditions and interests of ethnic groups, and that values the importance of the role played by women. Other goals are to allocate enough financial resources for an effective development and protection of the said areas, to participate in global and regional agreements to encourage and consolidate them, and to strengthen technical and financial cooperation as fair and unconditional aid to the developing countries.

As I stated in my speech on the occasion of the opening of this great event, Venezuela has been continually supportive of global and regional conservation efforts in the past decade. Based

on this background, and in closing this IVth World Congress on National Parks and Protected Areas, I can pledge my Government's political will and that of the Venezuelan people, to support, in the most positive way, the contents of the Caracas Declaration and the Action Plan that has been adopted.

It was with pleasure that I handed over the Caracas Declaration to Mr Maurice Strong, Secretary General for the United Nations Conference on Environment and Development, to be included in the documentation of the Earth Summit next June.

I hope that the Declaration and recommendations arising from this Congress are taken up among all nations, and given the attention they deserve for prompt and effective implementation.

I would like to congratulate the World Conservation Union and other international and national organizations that participated in the organization and fulfillment of this Congress, for the success achieved.

I declare this Congress formally closed, wishing all our visiting friends a happy trip back home and, to all our compatriots, to work !

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**International and Venezuelan participants in
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IVth WORLD CONGRESS ON NATIONAL PARKS AND PROTECTED AREAS

10-21 February 1992, Caracas, Venezuela

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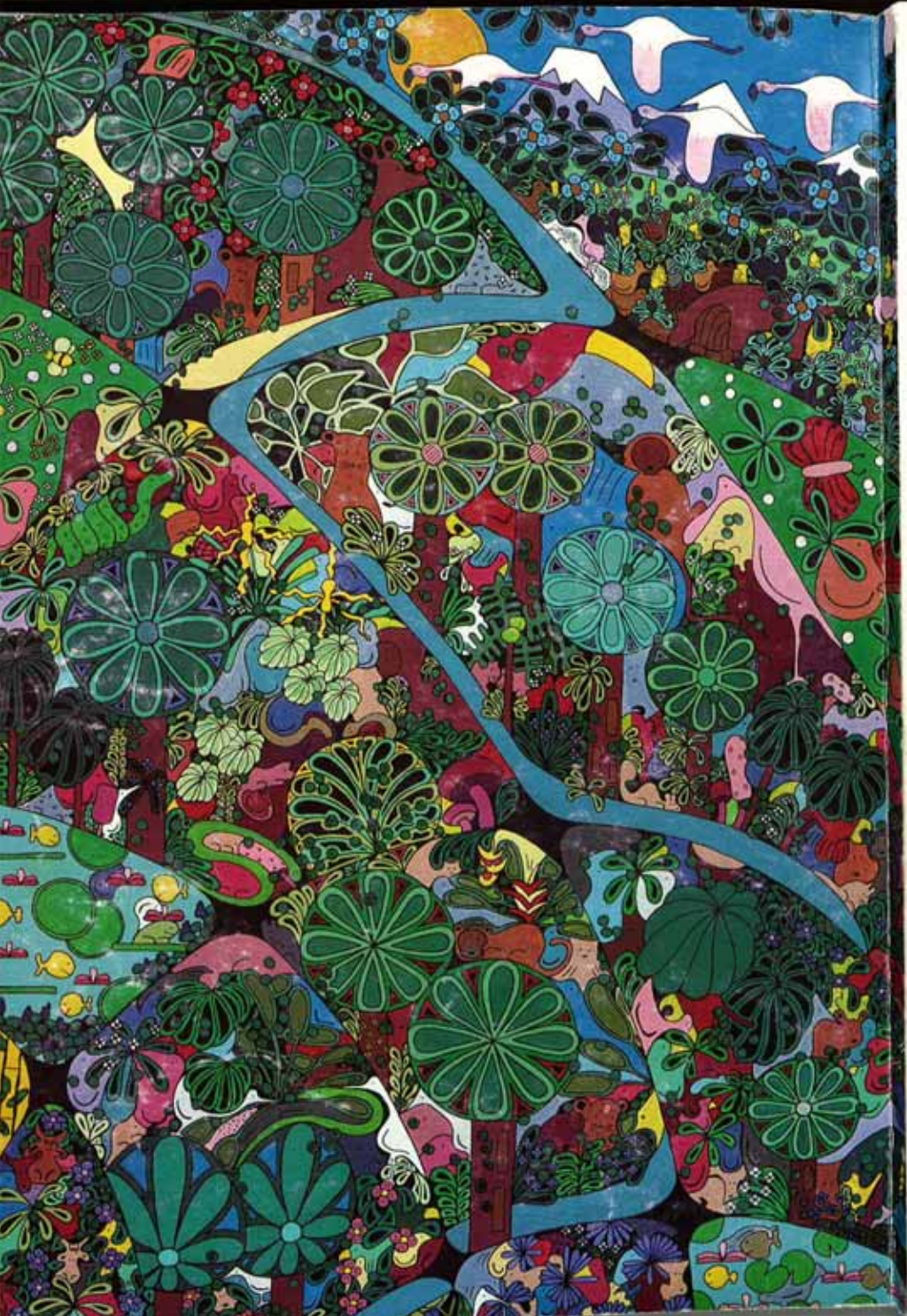
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