

CBSG News



*Volume 1
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*Newsletter of the
Captive Breeding
Specialist Group,
Species Survival Commission,
International Union for the
Conservation of Nature
and Natural Resources*

Premier Issue of CBSG Newsletter

This is the first issue of a newsletter for the CBSG. This issue is being distributed to all members of the CBSG, to the Chairpersons of the other Specialist Groups of the SSC, to agencies and wildlife departments known to have captive breeding programs, and to all zoos listed in the 1988 volume of the International Zoo Yearbook and to all International Species Information System (ISIS) participants. If you would like to continue receiving CBSG News, please fill out and return the form on page 23.

It is our goal that this newsletter serve as a timely means of communication and distribution of information among people with a special interest in the uses, resources and problems of captive breeding as a tool for the conservation of endangered species. This issue contains examples of some of the problems, activities, and programs in which the CBSG is involved. We welcome suggestions and comments and ask you to share this newsletter with others.

Captive propagation of endangered plant and animal species has become an essential part of the effort to protect many species from extinction and to provide stock for return to the wild. Animal species and particularly vertebrates are the primary species for which the CBSG has responsibility in the SSC. The International Union for the Conservation of Nature has adopted a policy on the use of captive breeding as a tool to prevent extinction of some species and to provide animals for return to the wild. This policy is printed on page 4 of this newsletter.

The CBSG has the responsibility to advise the SSC and the IUCN on captive breeding matters and to assist in developing international captive breeding programs. This issue of the newsletter includes examples of some of these activities.

Every country on earth has animal species which are declining in numbers, are endangered, or already near extinction because of human activities. Nearly every country has zoos or wildlife departments with collections of native species for exhibit, wildlife translocation, and recovery programs. Private organizations and individuals play an important role in many countries. These collections and the people managing them are an essential resource for the use of captive breeding for conservation of genetic diversity. Problems of managing captive populations of a species for survival and for reproduction and to retain the genetic diversity of the species are common to all of these programs. Solving these problems through a variety of resources is a part of the activities of the CBSG.

Members of the CBSG are developing captive breeding action plans for groups of species with recommendations of priority species for captive breeding programs. These are being developed in collaboration with the appropriate Species Survival Commission and International Council for Bird Preservation Specialist Groups. There are plans currently in development for primates, parrots, carnivores, and antelopes. CBSG is assisting collaborating international groups of zoos and wildlife departments with programs for conservation of particular species and groups of species. Such programs are in progress for the Sumatran rhinoceros, kouprey, and lemurs. We are also conducting workshops on conservation biology and population viability analysis for individual species and preparing detailed reports with recommendations for the species or





population from these working sessions. Examples include the Javan rhinoceros, Puerto Rican parrot, and Florida panther. The membership of the CBSG is listed on page 22. It includes zoo and wildlife professionals, specialists in many areas of biology (including genetics, demography, behavior, ecology, veterinary medicine, wildlife biology, reproductive biology, nutrition, and population biology), small population specialists, educators in captive management and conservation biology, and zoo directors. The membership is international in scope. We especially welcome new members from countries and regions not yet represented. There is a general meeting of the CBSG once a year (1990 in Copenhagen and 1991 in Singapore) just before the annual meeting of the International Union of Directors of Zoological Gardens. Special and regional meetings are also held each year as the need and opportunity arises. Participation in the CBSG does not require attendance at any of these meetings. Most of our activity is by telephone, correspondence, and fax communication. I would appreciate your comments and suggestions for this newsletter to make it useful for you and as a means of communication for the CBSG. My thanks.

U. S. Seal, Chairman CBSG



1989 CBSG Meeting Held in San Antonio, Texas

The annual meeting of the CBSG was held on September 16-17, 1989 in San Antonio, Texas USA. Approximately 125 individuals representing 32 countries met to discuss conservation topics ranging from fish to rhinos. Below are listed the action items developed by specific working groups and the general membership:

1. A proposal for redefinition of the IUCN 'Threatened Categories' based upon operational population biology criteria has been prepared by Drs. Mace and Lande. Send comments to Dr. Mace. This proposal will be considered for formal adoption by the IUCN during 1990.
2. Invite studbook keepers and species coordinators from local region to attend CBSG meetings and have a working group session for this group on matters concerning the problems and needs they have. Develop periodic meetings of regional coordinators in conjunction with other meetings. (All regional coordinators have been invited to join CBSG).
3. Note the PVA documents and the recommendations that were developed in these workshops. We are planning to expand this process as rapidly as possible since it has provided a technique for resolution of conflicting agendas among multiple participants. We are now referring to the process as Viability Assessment and Survival Planning to encompass the fact that models and recommendations for management actions are developed on the basis of available information. Copies of the PVA documents for the Florida Panther, Puerto Rican Parrot, and the Javan Rhinoceros are available at a cost of \$10 each from the CBSG office.
4. There is a need to rapidly expand the number of International Studbooks, probably at a minimum to 250-300 by the year 2000. This is based upon the growing number of regional studbooks and the rapidly growing number of species that are declining in the wild. This is going to require systematic methods of data collection for studbooks, the management and editing of the data, data analysis and master planning, coordination of propagation programs, planning for reintroductions, and publication and distribution of the information. Annual updating will be important. Increased computerization of the mechanics of the process is essential.
5. The North American SSP has requested its member institutions to contribute \$500 for development of a global tiger masterplan. This process will be designed to provide the tools and information, linked to maps, necessary for continuing assessment of the status of a species in the wild and in captivity. Contributions from other zoos would be welcome.
6. The Kouprey program will need to expand to other species (see list in the report) and to add additional institutions. Interested institutions should contact the Coordinator (Dr. Lee Simmons, Omaha Zoo) and the CBSG office.
7. The Madagascar Fauna Group has initiated a program for lemurs that includes support of activities in Madagascar. It is

planning to expand its activities to other mammalian, avian, reptilian, and aquatic fauna. Interested institutions should contact the coordinator, David Anderson (San Francisco).

8. Initial contacts in the Philippines, an area of high endemism, on the Tamaraw indicate that there is a potential for programs for a number of interesting species that are declining. There is a need for several more institutions to join London and Bristol in initiating this effort. There is a specific need to assist in a proposed visit in January to conduct another on site review and a VASP (PVA) workshop on the Tamaraw. Please contact David Jones (London) and the CBSG office.

9. Preliminary arrangements for a workshop in Ethiopia are underway with specific assignments made. Once this workshop is held we will have a better sense of the opportunity to develop an ongoing program. Proposed dates are June 6-13, 1990.

10. The continuing decline of black rhinos has encouraged formation of a Survival Trust of captive propagation institutions with the goal of establishing a globally managed captive population. An initial agreement is being developed with Zimbabwe.

11. The Mediterranean Monk seal continues its decline. Efforts to establish a captive population have been controversial. We have recommended a VASP (PVA) workshop that includes both biologists and policy level managers from appropriate range countries. Suggestions on encouraging such a process are welcome. Contact either Simon Stuart in the SSC office or the CBSG office. An initial meeting with European biologists will be held at the 1990 CBSG meeting in Copenhagen.

12. Note that the scimitar-horned oryx (likely extinct) and addax are near extinction in the wild. The last remnants are likely to be lost to hunters and poachers. Release programs are being initiated and will benefit from cooperation and collaboration by multiple institutions. Contact David Jones (London), Dale Tuttle (Jacksonville), or John Knowles (Marwell). There is a need (because of limited founders) for more regional programs, molecular identification of bloodlines, and exchange of bloodlines. Workshops were held in Niger in February-March, 1990.

13. Many programs have urged the need for more reproductive biology research and the development of technologies for reproductive enhancement, preservation of genetic materials, and for transfer of genetic materials (embryos, semen) between populations. Similar needs for molecular genetic work, particularly the DNA techniques have been expressed. It is likely that programs for both areas will continue to expand and require zoo support. More reintroduction programs are being supported financially and with participation of zoo professionals. There is a need for more such professionals on the staff of zoos.

14. The Aridland Antelope Workshop conducted just before the CBSG meeting will result in a more detailed document on the status and plans for the Arabian Oryx, Scimitar-horned Oryx, the Addax, and the gazelles. A document was distributed to workshop participants and is available from the CBSG office for \$20.00 (U.S.).

15. Action Plans and studbooks are needed for a number of the gazelle species. A workshop cosponsored with the Antelope Specialist Group is planned.

16. The preparation of Action Plans (in collaboration with appropriate Specialist Groups) is leading to recommendations for captive populations and propagation plans for high priority species. A list of these is given for each plan. The lists are long and increasing from year to year. We need to develop more details for each species, begin establishment of studbooks, and prepare survival plans. Coordinators and studbook keepers will be needed for each species or species group. The Primate Plan is the most advanced and we plan to produce a document with supporting information on each species. People will be needed to assist. Some of the species are in urgent need of attention and will receive highest priority.

17. The Avian working group is rapidly expanding its network and information base. Please help in this process (see page 6). Volunteers are needed to undertake development of avicultural skills with grebes. One species has been lost and more are in a precarious position. Regional studbooks are needed for the Waldrapp, Ibis, and Nene. Action Plans are being initiated for the storks and cracids.

18. 'Aquarium' Group recommends organization along taxonomic lines which will be done in consultation with the working group. Studbook for *Tursiops truncatus* needs to be established - a studbook keeper is needed. Plans are needed for aquatic turtles. Emergency actions are recommended for the Mediterranean monk seal. A *Tursiops* database has been prepared.





IUCN Policy Statements Approved

The following IUCN Species Survival Commission position statements were approved at the 22nd and 23d annual meetings of the IUCN/SSC:

SUMMARY OF CAPTIVE BREEDING STATEMENT

Habitat protection alone is not sufficient if the expressed goal of the World Conservation Strategy, the maintenance of biotic diversity, is to be achieved. Establishment of self-sustaining captive populations and other supportive intervention will be needed to avoid the loss of many species, especially those at high risk in greatly reduced, highly fragmented, and disturbed habitats. Captive breeding programmes need to be established before species are reduced to critically low numbers, and thereafter need to be coordinated internationally according to sound biological principles, and a view to the maintaining or re-establishment of viable populations in the wild.

STATE GIFTS OF ANIMALS

The IUCN Species Survival Commission (SSC) recognizes that state gifts of threatened living animals is a long-standing tradition. The SSC notes, however, that the increased restrictions on the transfer of animals under a wide range of legislation both for species conservation and for veterinary health reasons has reduced, but not completely stopped, transfers of this kind.

All parties are urged to bring to the attention of their governments the need to ensure that state gifts of threatened living animals should only be made or received if they can be completely compatible with ongoing conservation programmes for the species involved, including captive breeding programmes.

INTRODUCTION OF EUGLANDINA ROSEA AND OTHER CARNIVOROUS SNAILS

The plight of many species of land snails endemic to islands in the Pacific and Indian Oceans is receiving increasing attention. The Hawaiian genus Achatinella is listed on the United States Endangered Species list, and Achatinella and Partula are included in IUCN's Top 12 Endangered Species Priority List of 1984 and 1986 respectively. In many cases, the major threat to these, and other, less well documented land snails is the presence of an alien carnivorous snail, Euglandina rosea,

introduced since 1955 to more than 20 island sites as a biological control agent for another alien mollusc, the Giant African Snail, Achatina fulica.

Euglandina was introduced to Hawaii from Florida in 1955. Since then it has caused the extinction of a population of the endemic land snail Achatinella mustelina on Oahu and is implicated in the extinction of several of the 21 endemic species of Achatinella which are now extinct. Euglandina has caused the extinction in the wild of seven species of the endemic land snail Partula on Moorea and is responsible for the extinction of several endemic species of Partula in Tahiti. It is implicated in the extinction of several land snail species on Mauritius.

Euglandina was introduced to Guam in 1958 and to American Samoa in 1979 despite opposition from ecologists and conservationists who pointed out that there was no evidence that Euglandina has any impact on the Giant African Snail, but that there was abundant evidence of its adverse effect on native land snails. Euglandina also represents a potential hazard to human health in that it is an intermediate host for Angiostrongylus cantonensis which causes eosinophilic meningoencephalitis.

With the continuing extinction of Pacific and Indian Ocean land snails by Euglandina, it is imperative that a new initiative be launched to prohibit the use of Euglandina rosea and other carnivorous snails as biological control agents. Highest priority must be given to ensuring that Euglandina is not introduced to any island where it is not now present.

Relevant government departments and agricultural institutions must be circulated with information explaining the importance of preventing such introductions. Regional organisations concerned with agriculture and the environment, such as the South Pacific Commission, should be charged with circulating the necessary information. In areas where the Giant African Snail is still a pest, other control methods should be investigated. Collecting by hand is particularly recommended and has the added advantage that the snails can be consumed locally or exported.

In conclusion, scientific evidence is lacking that introduction of Euglandina provides effective control of the Giant African Land Snail. Instead, it has a devastating effect on rare, endemic snails, some of which are now extinct.

The IUCN Species Survival Commission therefore recommends strongly that there be no more introductions of Euglandina rosea and other carnivorous snails into habitats with endemic snail species.



Re-introductions...

Amur Leopard

An initial collaborative agreement has been made to reintroduce Amur leopards (*Panthera pardus orientalis*) into their native habitat in the Soviet Union. Zoos in Helsinki and Frankfurt have agreed to supply male animals for reintroduction. The target site is the Lazovsky State Reserve (1,165 km²) where the last free-ranging leopard from this area may have been killed in 1956. The area currently supports a diverse array of ungulates including high populations of Sika deer and goral which are the main prey species of the leopard. Initially, male leopards from the zoos will be brought to the site for an acclimatization/adaptation period. Then wild female leopards hopefully can be collected from remnant populations as they disperse from occupied territories. These can be collected without impacting the wild population as these dispersers invariably leave their protected areas, encounter humans, and are killed. Institutions interested in this project should contact Alan Shoemaker, Riverbanks Zoological Park, 500 Wildlife Parkway, Columbia, SC 29210, USA.

Przewalski Horse

Since 1987, a national program on the reintroduction into the wild of the Przewalski horse has been underway in the Soviet Union. The organizations currently involved in this effort include the All-Union Research Institute of Conservation of the State Committee for Conservation of Nature of the USSR, the Institute of Evolutional Morphology and Animal Ecology of the Academy of Science of the USSR, the Moscow Zoo, the Bukhara Persian Gazelle Breeding Station, the Askania-Nova Zoo, the Institute of Zoology of the Academy of Science of Kazakhstan and the State Committee for Conservation of Nature of Kazakhstan. The program is directed by V. E. Sokolov and V. E. Flint. The program is being developed in four stages:

Stage 1. This is the experimental stage to check the adaptability of zoo-born horses to arid conditions. Since the spring of 1987, a stallion (Studbook #1152) has been kept at the Bukhara Breeding Station where it has adapted to eating desert vegetation. The horse apparently tolerates heat well as it does not seek shade under 42 C. Seasonal molts were normal and timely. This pilot project has indicated that horses raised in temperate climates can adapt to desert conditions.

Stage 2. This stage is intended to establish semi-wild groups of horses in large enclosures. Introduced horses will come from the zoos of Moscow, Leningrad, and Askania-Nova. Initially, 7 horses from Askania-Nova will be delivered to the Kapchagajski State Zakaznik, where a 4,500-ha fenced

enclosure will contain the animals.

Stage 3. An experimental wild population of horses will be established in 1989-95 at the Kapchagajski State Zakaznik where no hunting is allowed. This 3,850,000-ha area has natural boundaries formed by a mountain range and a reservoir.

Stage 4. This will be the stage of general reintroduction into the wild. Problems that need addressing prior to this step include defining migration activity and patterns, hybridization with domestic horses, and the animals' ability to survive snowless winters. Suitable territories have been selected in Kazakhstan, Uzbekistan, Turkmenia, and southern Siberia.

Pere David's Deer

The Da Feng Milu (Pere David's deer) Reintroduction Project is the result of cooperation between the Ministry of Forestry and the People's Republic of China and the World Wildlife Fund (WWF). Scientific support was given by the Zoological Society of London. The deer were donated by a consortium of British zoos including Whipsnade, Chester, Marwell, Longleat, and Glasgow zoos. Thirty-nine deer were shipped in August, 1986 and the majority were released into a 120-ha initial release area in May, 1987. Eventually, the deer are to be released into a 1000-ha site. A management plan was developed based on three months of observation of the deer and their habitat following their release. Management of these animals presents some unique problems as there is virtually no information on their ecology before they became extinct in the wild.

Re-introduction Meeting Held in Rome

The first meeting of the IUCN/SSC Re-introduction Specialist Group (RSG) was held in Rome, Italy on August 25, 1989. The chairman (Dr. Mark Stanley Price) and seven original members were present at the meeting as well as 32 other interested people. The function of the RSG will be to develop a world-wide network of members actively involved in, or concerned with, re-introductions of any plant or animal with the following functions:

1. To document, collate, and analyze past re-introduction efforts, whether successes or failures.
2. To make available results of past experiences to those planning or carrying out a re-introduction.
3. To provide technical advice and evaluation for re-introduction planning, design, and monitoring and in defining objectives and measures of success.
4. To encourage site visits by specialists when possible.

Reintroductions...

5. To keep members and others informed on activities in re-introductions, probably through a newsletter,
6. To promote soundly-planned, legitimate reintroductions as a modern, multi-disciplinary management tool by constantly assessing their utility and cost effectiveness.
7. To identify which species in which areas are suitable candidates for re-introduction with appropriate priority for conservation resources and where there is a reasonable chance of success and then to promote these projects.
8. To assess the ecological, scientific, and educational value of each re-introduction and to take maximum advantage of each case.
9. To promote communication and collaboration between captive breeders, field workers, and researchers interested in small population biology.
10. To promote understanding and incorporation of results of simulations and predictions into field management methods on re-introduction projects.

Monk Seals Successfully Released

Two monk seal pups were accidentally caught by fishermen in October, 1987. They were brought to the Seal Rehabilitation and Research Center (SRRC) where they were taught to catch live fish. In April, 1988, the pair were equipped with radio transmitters and released within a marine park located in the Aegean Sea off the eastern coast of Greece. The maximum distance that radio signals could be received was 40 nautical miles. The seals apparently adapted quickly to life in the wild; their activity pattern changed to being primarily nocturnal and their diving capacity improved with diving time almost doubling. Information about activity patterns, diving, and feeding behavior are important in finding solutions for the serious conflicts that exist between seals and fisheries. This endeavor has demonstrated that monk seals can be successfully held in captivity for extended periods and released back into the wild. It has also shown that radio telemetry can safely and effectively providemuch data on the life history of these endangered seals.



CBSG Avian Advisory Group

The Avian Advisory Group of the CBSG will soon be contacting the majority of the world's zoos in an effort to network their captive bird collections. The first phase of this effort will involve identifying those individuals who are responsible for the management of these bird collections. Once this has been accomplished, the Avian Advisory Group will prepare a master list of collections and responsible individuals who shall serve as a foundation for the networking system. The second phase of this effort will entail the solicitation of information concerning each of the institutions' inventories and in-house avicultural programs. The success of this activity will depend on each institutions' cooperation and participation. When your zoo is contacted, please assist the Avian Advisory Group and the CBSG by responding to our inquiry. Your support of this activity will be greatly appreciated.

Stephen Wylie
Oklahoma City Zoological Park

Conservation Consultancy Fund Established

Two trust funds have been established by Finland and Norway to provide Finnish and Norwegian experts for field conservation activities. SSC Specialist Groups can draw on this fund to cover the total costs of using these consultants on missions, projects, or other IUCN assignments. Persons wishing to make use of this facility should send a short description of the proposed assignment, an indication of the special qualifications sought, and the proposed date and duration of the assignment to Dr. Stephen R. Edwards, Coordinator, IUCN/SSC, Avenue du Mont-Blanc, CH-1196 Gland, Suisse/Switzerland.

Workshop Focuses on Small Population Biology

A workshop on Research Priorities for Single Species Conservation Biology was held on November 13-16, 1988 in Washington, D.C., USA. The workshop was sponsored by the National Science Foundation and the National Zoological Park (NZIP) and was organized by David Wildt of the NZIP and U. S. Seal of the CBSG. The workshop focused on single species approaches to conservation and was preceded by another workshop on general research priorities in conservation biology organized by Dr. M. Soule in April, 1988. The following summarizes the four topic areas addressed at the meeting:

Natural Populations and Release Biology

Conservation Biology is multidisciplinary in nature, sharing a fundamental structure with many branches of the life sciences. Its overall goal is to understand taxa and natural and human systems sufficiently to permit modifications allowing maintenance of biodiversity. Natural population studies addressing a broad spectrum of disciplines are preferable including population dynamics, habitat assessment, interspecific interactions, physiological ecology, reproduction, behavior, spatial requirements, and disease. However, only long-term, multi-generational projects can yield answers to many key questions. Priority should be given to rational and strategic sampling so that generalizations can be made from a few well-conducted studies. Reintroductions will be increasingly important to bolster numbers, genetic diversity, and geographical distribution of threatened species. The great strengths of reintroduction are its power to rally public support for conservation and to test hypotheses about managed ecosystems.

Small Population Biology

The basic issue of population biology pertaining to species conservation is the understanding of processes which dictate why some species survive and some become extinct. More strictly formulated, it is critical to identify those factors which influence the viability of modern and historic populations, species, and subspecies. The 5 most important areas warranting attention are studies of population vital rates, population-genetic structure, the interaction of genetics and demographics, the impact of catastrophes, and the influence of habitat patterns. The primary focus should be on the many new tools associated with molecular biology, physiology, and theoretical population biology. When combined with field studies of target species, these techniques offer infinite promise for revealing the ecological and evolutionary processes responsible for controlling species survival and extinction.

Reproduction

Maintenance of species diversity depends on the process of reproduction. Habitat destruction usually results in deleterious demographic, epidemiological, physiological, and behavioral changes which compromise reproductive performance. Rare species, and especially those in chronic decline, deserve immediate attention to identify and characterize factors influencing reproduction. Results are important from a basic and comparative knowledge perspective and will be dependent on studies of reproductive demography, basic reproductive patterns, the influence of nutrition, season and disease, the monitoring and control of ovulation-gestation-parturition, gamete and developmental biology, and the collection, evaluation, and long-term storage of genetic material including gametes and embryos. The information derived can be applied to improving and formulating plans for enhancing propagation either by natural or artificial methods. The long-range benefits of this strategy will be a greater understanding of reproductive diversity as it relates to speciation and evolution.

Stress and Disease

Wild taxa are forced to survive and thrive in rapidly diminishing natural habitats and artificial, captive environments. One measure of adaptability in either environment is the ability to reproduce. Ultimate success is measured by the ability of offspring to achieve sexual maturity and continue to reproduce for species perpetuation. This criterion is valid for mammals, birds, fish, reptiles, amphibians, and invertebrates. Both stress and disease can severely compromise an animal's ability to reproduce. Presently, no effective measures are available for qualifying or quantitating the effects of stress on physiological or behavioral performance or survival ability. To understand the impact of this topic on conservation biology, research efforts should be directed at characterizing "normal" population data, developing quantitative methods for assessing stress, evaluating the etiology of infectious disease, determining disease prevalence within populations, and defining the interrelationships of stress or disease with behavior, reproduction, nutrition, demography, and various environmental factors.

(The complete report on this workshop is available from the CBSG office.)



Training Program Established for Endangered Species Management

The Jersey Wildlife Preservation Trust, the Wildlife Preservation Trust International, U.S.A. and the Wildlife Preservation Trust, Canada, together comprise *Wildlife Preservation Trust*, a non-profit organization founded by Gerald Durrell and dedicated to the conservation of endangered species through captive breeding and field work. It pursues these objectives by establishing controlled breeding programs and conducting captive and field research in addition to training techniques and principles associated with successful captive breeding.

The Trust's headquarters are situated on the island of Jersey in the Channel Islands, British Isles. The zoo includes facilities for research and training with mammals, birds, reptiles, amphibians and molluscs - many species of which are endangered and some of which are on loan from their respective governments around the world.

Since 1978, the Trust has conducted training programs in conservation and the captive breeding of endangered species. These are intended for individuals who have shown a commitment to conservation and require experience in the methods and techniques necessary to put their commitment into action. Certain training programs conducted at the Jersey Wildlife Preservation Trust can become a course leading to a Diploma in Endangered Species Management. This university diploma is validated by the University of Kent, Canterbury, England.

For further information contact either of below individuals:

Dr. David Waugh
Training Officer
Jersey Wildlife Preservation Trust
Les Augres Manor
Trinity, Jersey, Channel Islands

Mr. William Konstant
Executive Director
Wildlife Preservation Trust International
34th St. and Girard Avenue
Philadelphia, PA 19104



Computerized Conservation News and Information Service to be Established

The James Smithson Society has awarded a grant to the National Zoo's Conservation and Research Center to establish a computer bulletin board as an "international biological conservation news and information service." In its final form, this would constitute an interactive, continuously updated electronic newsletter making international conservation news immediately available to Smithsonian Institution bureaus and other users in the conservation community.

The first objective in the development of the conservation bulletin board (CONSBIOL) is to provide an outlet for this information for Smithsonian Institution personnel and in return make it available to the whole Smithsonian Institution community. An electronic mailing list of users interested in receiving news items on a regular basis will be developed. Once this network has been established, an open discussion group on biological conservation and a bulletin board that allows up- and downloading of news items will be created within the Smithsonian Institution's electronic mail network, PROFS.

An expansion of the "working" Smithsonian Institution discussion group to include the international academic computer network BITNET is also planned. SI-OIRM is providing PROFS with a gateway to BITNET. Once established, the Smithsonian Institution discussion group can go world-wide and include the international BITNET community.

Also planned is the transfer of the BITNET discussion group and the bulletin board to a public network like ECONET which potential users without access to BITNET can use. While the previous services were free for the user, this would require sign-up and on-line fees. This step will therefore only be undertaken when enough interest has been generated, the merits of the system have been confirmed, and sponsors have been found to assume the financial burden of the users. If you have a general interest, would like to contribute, and/or would like to receive news items, contact:

Michael Stuwe, Conservation and Research Center
National Zoological Park, Smithsonian Institution
Front Royal, VA 22630, USA
Telephone (703) 635-4166
BITNET: NZPEMOOI @ SIVM

SI-PROFS: M-STUWE



Survival Plan Developed for Florida Panther

The population of the Florida panther (*Felis concolor coryi*) consists of 24 animals that are monitored with radio collars and perhaps another 10 - 25 animals that have evaded capture or that occupy private lands. The population may have numbered 500+ in Florida at the turn of the century but has declined steadily since that time with the expansion of the human population and activities. The distribution of the panther is now limited to south Florida in the Big Cypress and Everglades physiographic regions.

The Florida panther was placed on the endangered species list on March 11, 1967 as the subspecies *Felis concolor coryi*. A recovery team was appointed in 1976 and the first Recovery Plan was approved in 1981. A revised version was approved June, 1987. A Population Viability Analysis Workshop was conducted by the CBSG in January 1989 in Naples, Florida with participation by all agencies, field biologists, and other interested parties. Another workshop was convened to revisit the simulations and analyses conducted in the January PVA workshop in light of the reviews and recent developments in population biology. This Viability Assessment and Survival Plan and Species Survival Plan meeting was held October 31 - 2 November, 1989 in Gainesville, Florida. Following is the executive summary of the Florida Panther Species Survival Plan:

The objective of this plan is to prevent the certain extinction of the Florida panther and to provide for its recovery in the wild through the establishment of 130 breeding animals in a combination of wild and captive populations by the year 2000 and increasing to 500 breeding age panthers by 2010. Implementation of the captive population recommendations in this plan are contingent upon the continuation and, in some cases expansion, of the existing capture and tracking program. The current wild population is estimated at 30-50 animals.

The recommendations in this plan call for:

- 1) immediate initiation of a captive breeding program as called for in the approved recovery plan dated June 22, 1987,
- 2) continuation and expansion of management and monitoring of the wild population,
- 3) continuation and expansion of the reintroduction program and
- 4) continuation and expansion of the habitat conservation program.

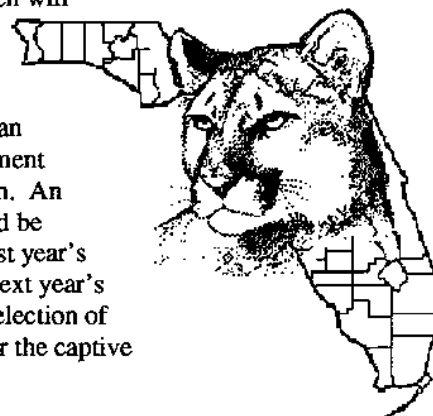
The purpose of the captive

breeding program is to place in captivity representative individuals from the wild population which would be selectively bred to expand their numbers. This population would serve to enhance the genetic and demographic structure of the Florida panther in captivity and serve as a source of individuals which may be used in prescribed management interventions of the wild population, as well as serve as a source of stock for re-establishment of the panther into its historic range.

The captive breeding program would take from the wild 4 adults, and 6 kittens in 1990 and 1 pair of older animals (adults or juveniles) and 6 kittens per year through 1992. The purpose is to obtain genetic representation from each of the known remaining potential founder animals. There are estimated to be 19 potential founder lineages represented in the living wild population. Requirements for additional animals (1 pair of older animals and 2-4 kittens per year for 3 years may be needed) in future years (1993-1995) would depend on whether there is sufficient representation of this wild founder stock in the captive population.

The captive populations would be managed cooperatively through the Captive Breeding Specialist Group of the IUCN, the participating zoos and the Florida Panther Inter-agency Committee (FPIC). A SSP working group comprised of biologists from these organizations would work under the leadership of the Technical Subcommittee of the FPIC. All activities would be conducted through the oversight of the FPIC consistent with the approved recovery plan and species survival plan.

This approach will allow us to evaluate experimentally what the results of the program are without an irretrievable commitment of the wild population. An annual meeting would be held to review the past year's results and plan the next year's activities including selection of individual animals for the captive program.



Panthers This plan will require an initial investment of \$50,000 above existing expenditures by the involved agencies. In addition, it will be necessary to construct an expanded conditioning facility at White Oak Plantation over the next 3 years which would cost approximately \$200,000. Finally, the participating zoos contribution would be approximately \$1,000,000 in facilities and \$500,000 per year in operating costs towards the captive breeding program. This major contribution to the public interest should be fully recognized.

The result of this investment would be to prevent the certain extinction of the Florida panther and provide for its recovery. Once the objective of 500 breeding adults is achieved, consideration would be given to removing the species from the Endangered Species list.

It should be clearly understood that this plan represents a biological compromise necessary to maintain the existing wild population while developing a captive population to ensure long term survival of the taxon. There is a clear biological tradeoff involved. If all the Florida panthers were removed from the wild immediately then there would be less of a loss of genetic diversity because most of the remaining

founders would be protected. Our proposed strategy would capture animals at a slower rate over a 3-6 year period and it is likely that mortality of some founders would occur during this time. This loss would be minimal but clearly represents a loss of genetic diversity that could be preserved if all animals were taken immediately.

Implementation of the Species Survival Plan would mean that: (1) the initial minimal negative impact of animal removal on the wild population to the captive breeding program would be fully offset by 1995 through management actions and reintroductions, (2) the overall population would expand at a rate of 15 -20% a year and the goal of 500 animals would be met by the year 2010, (3) the projected rate of loss of genetic diversity would be less than 0.1% per generation once the population objectives of 500 animals are achieved. This would allow genetic evolution to occur to maintain viability, (4) the probability of extinction would be close to zero for at least 200 years, (5) functional breeding subpopulations would be restored in the Everglades National Park and the Raccoon Point area of the Big Cypress National Preserve, and (6) 90% of the current genetic diversity would be retained for 100 years or longer if fully implemented over the next 20 years.



Recommendations Made for Recovery of Puerto Rican Parrot

The Puerto Rican Parrot (*Amazona vittata*) is an endangered parrot existing in the wild only as a single small population and numbering less than 40 birds. A captive population has been established. The wild population has increased slowly from a low of 13-17 birds and the captive population has a low rate of increase with incomplete founder representation. The basis for the limited recruitment in the wild and in captivity is not understood. These conditions favor continued loss of genetic diversity and potential extinction in the wild from random environmental events.

After several meetings with several concerned agencies, the CBSG has made the following recommendations concerning management of this species:

- Establish a collaborative Recovery and Captive Masterplan program in 1989.
- Establish a captive population on the mainland as soon as possible to protect against catastrophic loss of the species and to assist in analysis of the reproductive problems.
- Provide further support for the field program at Luquillo.
- Establish a captive population of Puerto Rican parrots at Rio Abajo in the summer of 1990.
- Develop long range plans to establish five independent wild populations of the Puerto Rican parrot on Puerto Rico.
- Initiate a vigorous program to investigate the causes of

breeding failure and to capture the founder contributions of the Puerto Rican parrot stock.

- Do not initiate any timber removal operations in the Rio Abajo forest intended for maintenance or release of Puerto Rican parrots until an adequate review of impact has been done.
- Begin planning a release and monitoring program for the wild population at Rio Abajo.
- Establish an 'external' independent review group for the parrot programs.
- Do not use captive production for supplementation of the Luquillo wild population until the net increase in the captive population is more than six birds per year. Then use no more than half of the number above six.
- Conduct a literature search and review of all available information on diseases of free-ranging birds, reptiles, and mammals in Puerto Rico.
- Do further molecular genetic work for estimation of possible past losses in diversity and close kin relationships in the wild and captive populations.
- Tighten restrictions on visitors to the Luquillo aviary.
- Do not selectively cull birds or lineages with presumed genetic defects.
- There are multiple management needs for the captive flock and the facility itself is in serious need of maintenance.



CBSG Herpetology Group

John McLain
San Antonio Zoological Gardens

The Herpetology Group was initially organized at the 1989 annual CBSG/IUDZG meeting held in San Antonio, Texas. The group was formed at the direction of Dr. Ulie Seal and charged with three primary objectives including: (1) the formation of an international network of specialists versed in the captive propagation and management of amphibians/reptiles, (2) the development of specific action plans for a given herpetofauna as dictated by CBSG zoogeographic and/or taxonomic priorities, and (3) the provision of a technical resource to CBSG and other SSC Speciality Groups with regards to the captive propagation and management of endangered herpetofauna. At the present time, thirty colleagues from North America, the United Kingdom, Europe, South Africa, India, and Australia are being solicited with respects to group membership. Upon initial formation, we hope to expand the international scope of the group.

The first objective of the Herpetology Group will be the draft of an action plan for the herpetofauna of Madagascar (Malagasy Republic). The herpetofauna of Madagascar is characterized by a high number of endemic and poorly-known species threatened primarily by habitat destruction or alteration. Preliminary analyses have been undertaken and forwarded to the Madagascar Fauna Captive Propagation Group (MFG) for their consideration. John Behler and John Iaderosa (New York Zoological Society), Rick Hudson (Fort Worth Zoological Park), and I have scheduled a trip to Madagascar so as to evaluate the potential for additional propagation programs and field research concerning this unique fauna. Such programs, coordinated by the MFG, could supplement the existing vital efforts of the Jersey Wildlife Preservation Trust and the World Wildlife Fund.



Additional objectives of the group include participation in a workshop concerning conservation of reptiles and amphibians of the West Indies to be held in Gainesville in April, 1990. This workshop will be held in conjunction with meetings of the SSC Crocodile Specialist Group and AAZPA Herpetology Advisory/Interest Groups. Taxa of particular concern to the CBSG include several species of rock iguana (*Cyclura*) and boa (*Epicrates*) as well as other reptiles and amphibians to be reviewed at this workshop. Analyses of the herpetofauna of Vietnam and

the Phillipines will be undertaken subsequent to activation of the Madagascar/West Indies projects. The Herpetology Group plans to be interactive with the objectives of other CBSG Speciality Groups so as to facilitate the organization of unified vertebrate action plans.

In addition to these regional initiatives, the Herpetology Group plans analyses of taxa known to be threatened or endangered in the wild. Initially, we plan to examine endangered chelonians as identified by the SSC Tortoise and Freshwater Turtle Specialist Group. These analyses would be utilized to identify those taxa that could be propagated and managed in a coordinated program so as to supplement the recovery of wild populations.

As the Herpetology Group has just been activated and is presently being organized, it will be difficult to ascertain whether its initial objectives can be realized within the coming year. Several experienced CBSG colleagues have generously offered assistance as well as advice. We would particularly like to thank the contributor of "identify your objectives before Ulie identifies them for you!" However, we failed to act on this sage-like wisdom in the first hour and now lack the time to worry about it!



CBSG Chairman Attends Indian Zoo Director's Meeting



CBSG chairman, Ulysses Seal, received an invitation from Mr. Raval, director of the Sakkarbaug Zoo, to attend and participate in a meeting of the All-India Zoo Association and workshop being hosted by the zoo. He was invited to make presentations on the function and activities of the CBSG and discuss population viability analysis and species survival planning and the role of zoos in conservation of wild species.

There were about 75 participants in the meetings held on January 12-20, 1990. Non-Indian participants included Roger Wheater, Jeremy Mallinson, Rolin Wirth, Fred Swengel, Michael Ounsted, Nick Ellerton, and Sally Walker. There were invitations to other foreign zoo and conservation people who were not able to attend.

Each of the foreign guests made presentations and several chaired sessions. S. K. Patnaik, director of Nandankanan Zoo, was elected president of the Association. One notable feature was a series of round table discussions on problems such as writing off the value of dead animals, lack of readily-available drugs to transport animals coupled with airline difficulties, the need for training courses for zoo personnel, and courses being prepared by the Wildlife Institute at Dehra Dun. The first regional studbook prepared in India for the Asiatic Lion (currently limited to the >220 animals that are or have been at Sakkarbaug Zoo) was presented to the group by Raval and Walker. This studbook will be placed into SPARKS (the North American studbook is already entered). Data will be collected from the other Indian Zoos for a complete regional studbook.

The Asiatic Lion was selected as Animal of the Year by the Directors. The Asiatic lion served as a focus for many of the discussions and for the resolutions adopted by the workshop participants. There was also a local bank-sponsored event recognizing the transfer of two pairs of lions to other zoos. A number of lions have been placed in Indian zoos but the space at Sakkarbaug remains full. Dispersing and man-eating lions are also being captured each year and held at the Zoo. An urgent need was expressed for shipping lions to zoos outside of India as soon as possible. Strong recommendations were made to avoid placing Gir lions in collections that hold African lions and to stop breeding hybrids. The importance of establishing additional wild reserves was also discussed and accepted. A special talk was given by Shri S.A. Chavan (Con-

servator of Forests) on the Gir lion. He supports a number of conservation measures for the lion and is seeking increased international attention to the needs of the Gir Sanctuary and the lion. A set of 12 resolutions were adopted. There was substantial interest in advancing the participation of the zoos in organized conservation programs and an interest in what was being done elsewhere.

Also, there is a 'headstart' sea turtle (Green sea turtle and Kemp's Ridley turtle) egg hatching and rearing program in progress, supervised by Mohan Lal Sharma, Conservator of Forests, Junagadh Circle, Junagadh, Gujarat INDIA. He would like more information and correspondence on the subject.



Info Sought on Impact of Global Climate Change on Species

The World Wildlife Fund (WWF) periodically produces special reports on topics of crucial conservation interest with the aim of persuading decision-makers to support WWF aims. The WWF is currently developing a special report on global climate change and its implications for conservation. Although there is much material available relative to the effects on protected areas, coastal zones, and other habitats, there appears to be very little information on the effects of climatic changes as a potential threat to individual species. The WWF is seeking such information and has asked the CBSG for any information. Individuals having information on the effect of climatic changes on individual species are urged to contact Adam Markham, Campaigns Officer, WWF International, CH-1196 Gland, Switzerland, telephone: (022) 64 71 81.

Update on Kouprey Conservation Efforts

Lee Simmons
Project Coordinator
Kouprey Trust
Director, Omaha Zoo, Omaha, Nebraska, USA

In January 1988, a meeting was convened by Prof. Vo Quy, University of Hanoi, to further efforts to conserve the Kouprey (*Bos sauveli*). Below are a summary of activities since that meeting:

1. An IUCN Action Plan has been adopted.
2. The Kouprey Trust was formed. The Trust consists of the London, New York (Bronx), St. Louis, San Diego, Cincinnati/King's Island, and Omaha Zoos with informal support from the National Zoo (U.S.). A new member, WoodHaven Farms (Gainesville, Florida) has recently been added.
3. The Kouprey Conservation Cooperative Agreement between the Kouprey Trust and IUCN was adopted.
4. An agreement with Vietnam for the program is pending and a contract between IUCN and Vietnam for implementing the first phases of the action plan is in place.
5. A planning visit to Hanoi by Simon Stuart (IUCN) and Lee Simmons (Omaha Zoo) was made in January 1989.
6. Three Vietnamese scientists attended the training course sponsored by the National Zoo in Malaysia in 1988.
7. Three Vietnamese scientists traveled to the U.S. in March and April, 1989 for six weeks of training and experience in reproductive, managerial, and immobilization techniques at the National Zoo, St. Louis Zoo, and Omaha Zoo.
8. Bruce Read (St. Louis Zoo) and Jim Dolan (San Diego Zoo) traveled to Vietnam in March, 1989 to assist in the planning and construction of a holding station near Ban Me Thuot in the Daklak province.
9. The first phase of that station consisting of a substantial barn and holding stalls is now complete. Partial funding and hard-to-get materials were furnished by the Trust, with labor and locally-available materials furnished by the Vietnamese.
10. Andrew Laurie traveled to Vietnam in April, 1989 to conduct a field survey of the Yok Don Reserve in cooperation with Vietnamese personnel. No kouprey were seen due to the annual migration of much wildlife during the dry season from the highlands of Vietnam into lower, wetter areas of Cambodia. However, a wealth of information was obtained and it is felt that there is a strong probability of kouprey returning to Vietnam during the rainy season.
11. A six-week rainy-season survey, scheduled to start September 6, 1989, was cancelled by the Vietnamese at the

last minute due possibly to troop movements in the area. This could delay the program by one year.

12. The consensus of opinion at the San Antonio CBSG Kouprey meetings was that the next steps are to:

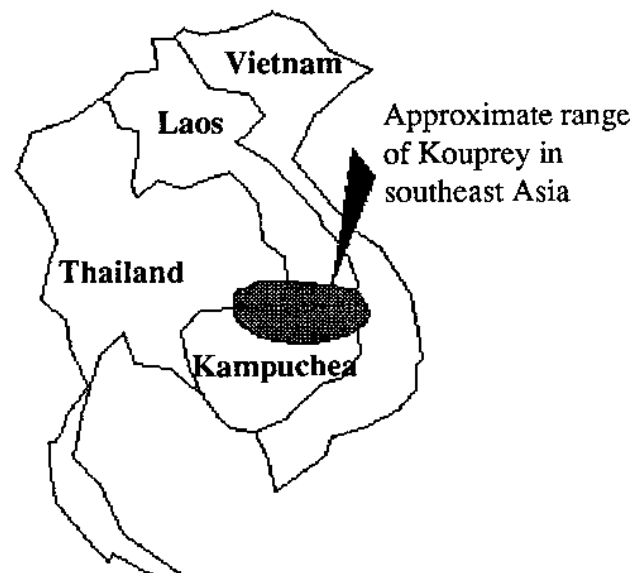
- a. solve the problems of access to Vietnam
- b. reschedule and complete the wet season survey
- c. schedule a capture operation
- d. establish one or more captive populations

In the interim, the Trust's efforts will be directed to continued and expanded training of Vietnamese, U.S., and possibly Malaysian personnel.

Expanded planning and attention will be paid to logistical and personnel problems involved in eventual capture, captive management, quarantine, and transportation operations.

13. There has been a considerable amount of interest in expanding the scope of the Trust's activities to include other species, such as Eld's deer, Hog deer, Banteng, Gaur, Javan Rhino, pheasants, and primates. The members attending the kouprey meetings supported this provided additional institutions and adequate resources for support of each new activity can be found. Each new species group should not totally duplicate efforts, resources, personnel, and facilities.

An Eld's deer program and construction of holding pens will begin in February, 1990, supported by the San Diego Zoo.



Recommendations of Aquarium Working Group

Les Kaufman
New England Aquarium

The Aquarium Working Group convened at the annual CBSG meeting held last September. Below are extracts from their report to the Group.

Historically, aquariums and aquatic zoos have lagged behind terrestrial zoos in the percentage of captive-born specimens displayed and also in the number of programs undertaken for rearing endangered species to maturity. The cause for this is economic because of the very high costs associated with obtaining and rearing fishes and aquatic invertebrates.

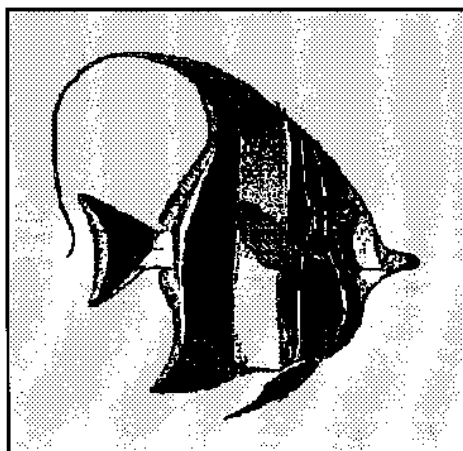
These have restrained the commitment of governing authorities. We in this working group are convinced that this situation must change. We see a "Faunal Recovery Program" as multi-faceted, involving the following elements: conservation research, captive propagation, and habitat preservation.

1. Conservation Research.

The basis of all advances in conservation biology of aquatic species must rest on a firm understanding of the life history of the fauna involved, plus the technology necessary for captive propagation and restoration.

In the case of aquatic organisms, we are particularly deficient in our capabilities for rearing all marine species, the bulk of which have minute pelagic larvae. In addition, the plasticity of fishes and aquatic invertebrates raises serious problems for long-term maintenance of genetic characteristics.

2. Captive Propagation. The objectives are: a) to reduce dependence on wild populations for species displayed. Though not presently a problem of extreme urgency, many general solutions to husbandry problems can be found if aquariums start now to develop the skills and technology needed to rear all types of aquatic species. This is particularly urgent as regards coral reef fishes; and b) preserve endangered species with the ultimate goal of reintroduction. To do this, not only must the general husbandry techniques be employed, but a careful analysis must be made to identify which of the endangered species deserve priority attention.



The means for achieving our goals are by: a) practicing rearing techniques; b) communications within the profession to disseminate lessons learned; and c) improve general understanding of nutrition, pathology, and reproductive science.

3. Habitat Preservation. This is accomplished by at least three distinct approaches: a) influencing public policy, through organizational action to enhance grass roots efforts, to promote environmental legislation and enforcement and to bring political pressure to bear; b) education of visitors, leading ultimately to their empowerment and participation in habitat preservation; c) direct action, where the institution actually undertakes programs to prevent and/or mitigate ecological stress on specific environments.

To help accomplish the above, we feel that the working groups should be organized taxonomically rather than grouped under the general term "Aquarium." Accordingly, we propose the formation of the following discreet groups: a) Fishes and Aquatic Invertebrates: this will be a new group; b) Aquatic

Mammals: pinniped, cetacean, and "other." This also is a new group; c) Aquatic Herptiles: coordination with the existing group for herptiles; d) Aquatic Birds: coordination with the existing avian group.

Also, we feel it worthwhile to adopt the existing SSP and studbook structures, notwithstanding the substantial biological difference between most aquatic animals and the terrestrial tetrapods that are presently the focus of most SSP programs. This will be further studied and recommendations submitted to the WCMC and CBSG. There are at present three initiatives for the establishment of fish faunal studbooks and SSP masterplans: a) Lake Victoria Fishes: draft masterplan and studbook petitions have been submitted, reviewed, and are presently under revision. Field research program has been funded and is in progress. Proposed studbook coordinator is Les Kaufman, New England Aquarium; b) Desert Fishes: we

Aquarium...

recommend the expansion of this program from North American forms to globally-endangered desert fishes. Paul Loiselle, New York Aquarium, is the proposed studbook coordinator, aided by Doug Sweet of the Belle Isle Aquarium; c) Appalachian Stream Fishes: this program is presently under development by Jackson Andrews, National Aquarium in Baltimore, aided by John Tullock and Dave Etnier, University of Tennessee.

We propose that similar initiatives be undertaken for the following additional programs: a) *Tursiops truncatus* (studbook only): this should be done in order to enable a long-range plan for captive bottlenose populations and it is necessary for planning space to deal with truly endangered small odontocetes; b) Faunal Recovery Plans for all aquatic turtles with immediate priority for marine turtles and the South American river turtles.

In addition to the above-mentioned SSP/studbook actions, several emergency actions need to be taken:

1. Mediterranean Monk Seal. The Mediterranean monk seal is in imminent danger of extinction. We recom-

mend a three-pronged approach to Captive Propagation Rescue: a) secure the natural population in Mauritania, presently threatened by impending compromise to national park protection. Because of its political implications, this requires address by the IUDZG at its San Antonio meeting; b) mobilize space in existing institutions qualified to hold warm-water pinnipeds with emphasis on European institutions, but possible participation from North America. Obtain necessary permits and take action to establish brood stock in these institutions; c) establish a minimum of three dedicated facilities for captive propagation and recovery with at least one each in France, Spain, and Greece.

2. Cetaceans. Develop and implement a research program to produce the husbandry techniques and field methods necessary to institute CPR programs for small odontocetes: e.g., *Inia*, *Lipotes*, *Cephalorhynchus*. A major component of this is providing technical assistance to host countries.

In summary, the above action plan is totally dependent on the following: a) recognition of the problem by individual institutions; b) commitment of such necessary resources as space, staff, time, and funds.



Working Groups Report on Madagascar Fauna

The Madagascar Fauna Captive Propagation Group (MFG) met at the 1989 CBSG annual meeting in September. Following are the results of that meeting.

MFG has retained Andrea Katz of the Duke University Primate Center to work of its behalf in Ivoloina. Interviews will be complete and a decision made in October to retain an individual to represent MFG in Parc Tsimbazaza.

Fifteen of the most endangered lemurs were targeted for action programs. Five species were selected for immediate action, that is for collection and importation to breeding colonies under accords of MFG member institutions. Those species were: aye-aye (*Daubentonia madagascariensis*), red-bellied lemur (*Lemur rubiventer*), broad-nosed gentle lemur (*Hapalemur aureus*), white sifaki (*Propithecus v. coronatus*), and Tattersall's sifaki (*Propithecus tattersalli*). The MFG also recommended SSP and Europaisches Erhaltungszucht-Programm inclusion of these five species for captive breeding and recommended a population biologist to assist in determining the number of founders necessary for these five species.

A list of Malagasy birds has been compiled and Bruce Bohmke will help prioritize this list. John McLain and colleagues have produced a master list of reptiles and amphibians in Madagascar and given priority to a top ten group. Les Kaufman and colleagues will provide a list of fish and

designate those in need of eventual or immediate captive breeding assistance.

A masterplan for Tsimbazaza has been created by Missouri Botanical Garden (MBG) and will be reviewed by MFG for comments on zoological aspects and on priority of construction. MFG and MBG will commit funds to begin construction this year. MFG, through its member institutions, will undertake in-country and out-of-country training of veterinary staff in Tsimbazaza and in Ivoloina. The Red Data Book for lemurs has been completed but funds are required for publication. MFG has agreed to provide half the cost for this. One important goal of MFG is returning specimens of fauna to demonstrate the serious interest for long-term reinforcement of Malagasy animal populations. MFG will try to return specimens of reptile species in January, 1990 and will try to return species of lemurs in late 1990. MFG will provide funds for an off-exhibit complex for lemurs in Ivoloina, a veterinary complex, equipment, zoo office, and partial cost of a pickup truck.

MFG will work with CBSG on the Primate Action Plan for Madagascar. MFG will also work with Duke Primate Center to assist distribution of some specimens there including Coquerel's Mouse Lemur, Lemur mongoose, and Propithecus. MFG will maintain liason with World Wildlife Fund,

Madagascar...

Wildlife Preservation Trust International, Conservation International, and IUCN.

MFG made contact with officials of the World Bank before and during a steering committee trip to Madagascar. MFG was requested to make application through World Bank for funds to carry out the captive breeding component of biodiversity section of their program. This application was made and has been included for consideration of funding next year. Five more institutions will be added to the MFG for the upcoming year.

David Anderson, Chairman
MFG Steering Committee

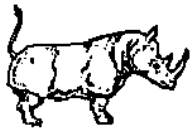
Madagascar Herpetofauna:

The establishment of a priority list for Malagasy reptiles and amphibians is difficult as there is a paucity of information concerning the vast majority of the herpetofauna. However, the Madagascar Fauna Captive Propagation Group (MFCPG) has a defined need for such a list in the development of its overall action plan for the conservation of the island's vertebrate fauna. Therefore, the following "top 15" list is offered for their consideration. Taxa were selected with respect to the following factors: (1) degree of endangerment; (2) taxonomic uniqueness; (3) existing and future propagation/

management potential; (4) representation of biodiversity; and (5) perceived recognition by Malagasy citizens of these animals as "living symbols" of their countries natural heritage. Numbers do not imply priority.

1. Tortoises
 - Geochelone radiata* (Radiated tortoise)
 - Geochelone yniphora* (Angonoka tortoise)
 - Pyxis arachnoides* (Spider tortoise)
 - Pyxis planicauda* (Flat-tailed tortoise)
2. *Erymnochelys madagascariensis* (Madagascar sideneck turtle)
3. *Lygodactylus arnouliti* (Mt. Ibity gecko)
4. *Phelsuma serraticauda* (Leaf-tailed day gecko)
5. *Amphiglossus stumffi* (Stumpff's skink)
6. Boas:
 - Acrantophis dumerili* (Dumeril's ground boa)
 - Acrantophis madagascariensis* (Madagascar ground boa)
 - Sanzinia madagascariensis* (Madagascar tree boa)
7. *Liophidium apperti* (Madagascar colubrid)
8. *Langaha nasuta* (Madagascar leaf-nosed snake)
9. *Mantella aurantiaca* (Golden mantella)
10. *Dyscophis antongili* (Madagascar tomato frog)

John McLain
San Antonio Zoological Gardens



Rhino Update...

As one of the most endangered families of mammals, rhinos continue to receive much attention from the CBSG. A number of recent developments with the various species are worthy of note:

Sumatran: There are currently 18 Sumatran rhino in captivity in four countries (Malaysia, Indonesia, the U.K., and the U.S.A.). A summary of the captures, movements, deaths, and status of the captive population is provided in the accompanying table. The AAZPA Sumatran Rhino Trust has recently arranged for extension of their agreement with Indonesia for their cooperative project on this species. Under the renewed agreement, the SRT will expand its operations to try to rescue doomed rhino anywhere in Sumatra.

Javan: A Population Viability Workshop for this species was conducted in Indonesia during June by the CBSG in collaboration with the Indonesian Directorate of Forest Protection and Nature Conservation (PHPA). This Workshop strongly recommended that there be immediate action to

establish two more populations, initially captive, of this endangered species that survives in Indonesia in a single population estimated to be about 50 rhino. Ultimately, the goal is to restore 10-20 populations throughout the species range with a total population of at least 2000 animals. The report of this PVA is available from CBSG.

Indian: Cooperation between Nepal and the *ex situ* captive community continue with excess animals from Chitawan National Park being placed in zoos to reinforce the captive population and support from the captive community be committed to Nepal for its in situ programs. A number of such cooperative projects have occurred with individual zoos. The AAZPA SSP is now trying to arrange a more collective and coordinated relationship with Nepal.

Black: Attempts progress to organize an International Survival Trust for the Southern Black Rhino as a partnership between the *ex situ* captive community and the Government of Zimbabwe where the largest and most viable


Tom Foose
AAZPA Conservation Director
CBSG Executive Officer Designate

**Summary of Captive Programs for the Sumatran Rhino
1984 to 1990**

<u>COUNTRY</u>	<u>CAPTURED</u>	<u>BORN</u>	<u>IMPORTED</u>	<u>EXPORTED</u>	<u>DIED</u>	<u>ALIVE</u>
P. MALAYSIA	2/9	0/1	1/0	0/2	2/2	1/6
SABAH	3/1	0/0	0/0	0/0	2/0	1/1
INDONESIA	4/7	0/0	0/1	2/5	0/1	2/2
THAILAND	0/0	0/0	0/1	0/0	0/1	0/0
U.K.	0/0	0/0	1/2	0/0	0/1	1/1
U.S.A.	0/0	0/0	0/3	0/0	0/0	0/3
TOTAL	9/17	0/1	2/7	2/7	4/5	5/13

populations of this species survive. The Trust would be a mechanism to reinforce and better coordinate the global captive population and to provide a vehicle to provide more support from the captive community for *in situ* conservation.

White: A trio of Northern White rhinos have now been translocated from Dvur Kralove to the San Diego Wild Animal Park through the auspices of the CBSG to establish a second captive nucleus of this subspecies.

Anyone desiring further information on the captive programs for these species should contact the CBSG Office. 

Don't Forget!



...to attend the 1990 annual meeting of the
Captive Breeding Specialist Group.

This year's meeting will be held in Copenhagen, Denmark on August 25-26, 1990, just prior to the annual meeting of the International Union of Directors of Zoological Gardens (August 26-31). An informal reception will be held on the evening of August 24. Everyone is invited - you do not need to be a CBSG member to attend! For information and registration materials, please contact either of the below individuals:

Bent Jorgensen
Copenhagen Zoo
Sdr. Fasanvej 79
DK-2000 Frederiksberg
Denmark
Telephone: +45 31 30 25 55
Fax Number: +45 36 44 24 55
Cables: Zoogarden

Judi Mikolai
CBSG
12101 Johnny Cake Ridge Road
Apple Valley, MN 55124
USA
Telephone: 612-431-9325
Fax Number: 612-432-2757

Activity Report of the CBSG Chairman

September 1989 to February 1990

The broad base of financial support from the captive breeding community, developed since the meeting in San Antonio, has meant that I have been able to recruit a full-time senior staff person as well as to continue to support a personal assistant. Dr. Tom Foose will join the staff of CBSG from his position as Conservation Director of the American Association of Zoological Parks and Aquariums (AAZPA) around 1 May 1990. We will assist the new person being recruited by the AAZPA during the transition and training period prior to the move of the AAZPA Conservation Office to Washington, D.C. Tom will continue with the CBSG in his role as a coordinator and facilitator of international collaborative projects and will provide the needed guidance and organizing oversight needed for the urgent development of our Captive Breeding Action Plans for the vertebrates. Judi Mikolai continues as my personal assistant and is providing the needed support and presence for response to the many and rapidly evolving projects being undertaken by the CBSG. There has now been committed \$613,558 (over a 3-year period) by 37 institutions and organizations. We have received \$100,188 to date from 22 institutions and organizations.

The assurance of support for the CBSG has allowed me to begin expanding our contact with the wildlife and zoo community in several high-priority countries (India, Indonesia, Brazil) and to undertake a series of population viability analyses (PVA) and Conservation Planning Workshops with the production of published documents, including a population biology overview. Copies of these documents will be made available from the CBSG office.

The potential for increasing the scope of the contribution of small population management and captive propagation to the preservation and conservation of the rapidly expanding array of endangered species has led me to a personal decision to make this work a full-time activity. I have begun the process of closing my research laboratory with the Veteran's Administration (VA) and will probably retire from the VA at the end of 1990 after 32 years with them. I will retain my academic connections with the University of Minnesota. This change will allow me to focus more energy and time on the activities of the CBSG and explore and develop the many opportunities for expanding the contribution of captive propagation to conservation of endangered species which are rapidly emerging. I will continue my work on

contraception with the implants and some newer methodologies and with wild animal reproduction through collaboration with several zoos and laboratories.

The following summary is a combination of CBSG projects, activities, and chronology:

1. Attended the annual AAZPA meeting on 22-26 September 1989. There, I was involved with the following meetings:

- Attended approximately 20 Species Survival Plan (SSP) sessions as well as conducted the tiger SSP. Presented rationale for support of Global Tiger Masterplan by SSP institutions which was supported by the propagation committee.
- California Condor - suggested the need for a PVA/SSP plan and made tentative arrangements for first meeting.
- Bali Mynah SSP - a report by Bob Seibels indicated that the wild population (18-25 birds) of the Bali mynah has continued its sharp decline over the past two years and is in imminent danger of extinction in the wild. Substantial discussions led to a commentary suggesting the need for a PVA and rapid action to avoid extinction. The outcome has been a PVA scheduled for 22-24 March in Surabaya. There will be a need for sustained support of the program and one of the objectives of the PVA will be to recommend priorities for action and suggest a budget. The issue of birds in private hands in Indonesia (possibly illegal but representing a significant fraction of the gene pool) and elsewhere will need to be considered. The identifiable founders represented in the captive population appears to be small. The role of captive propagation in bird conservation remains an issue.
- Maned wolves appear to be in deep trouble in North America due to prolonged reproductive failure in the population, perhaps from multiple causes. Indications from the studbook are that similar problems are emerging in the European population as well. Maternal destruction of young needs to be addressed. This SSP group is making an intense effort to address the problems.
- Meeting of black rhino working group continued development of a process to recruit additional-founder stock from the rapidly diminishing wild populations. Consortium formed under umbrella of CBSG. Foose will provide coordination activity.
- Attended avian and herpetology groups meetings.

Activity Report...

2. Presented a paper on Fertility Control for Regulation of Wildlife Populations to a wildlife meeting in Madison, Wisconsin, USA, 28 September 1989.

3. I was involved with several activities related to the Florida Panther (FP):

- Attended a meeting in Atlanta, Georgia, USA on 29 September 1989. The January, 1990 PVA report was reviewed. A decision was made to undertake a revision and update of the PVA and to develop scenarios for initiating a captive population. Also provided a basis for an SSP plan and to establish a studbook.

- Attended a Florida Panther PVA/SSP workshop (Gainesville, Florida, USA) on 31 October through 2 November 1989. A plan has been produced (copies available from the CBSG office) and distributed to all participants in November. Detailed recommendations were made on initiation of a captive population including selection of individual animals. This elicited substantial further discussion in all of the agencies.

- Attended a FP meeting to develop consensus set of recommendations (Tallahassee, Florida, USA) on 15 December 1989 which led to the production of a sign-off document for the agency heads. Copies on file and will be in 1990 CBSG book.

- Attended a FP meeting with agency heads for final round of presentations, discussions, and media exposure on 8-9 January 1990. The recommendations were approved.

- Attended a FP public meeting arranged by the citizens Committee, "Save the Panther" (Fort Lauderdale, Florida, USA) on 1 March 1989. The meeting was held to comment on the FP plan in a public forum and respond to questions and concerns about removal of animals from the wild. The Committee strongly supports the plan (they have been aware of the process from the beginning and have reviewed copies of each of the PVAs).

- We have produced a draft studbook of data on individual panthers in the wild population based upon data supplied by the biologists. Copies are being provided to the biologists, agencies, and to the four Florida zoos planning to participate in the captive propagation program. Representatives of the four zoos (Lowry Park, Miami, White Oak, and Jacksonville) participated in both PVA sessions and in some of the other meetings. Their participation was an essential part of our ability to develop a workable plan. The strong support available from the zoo community was a continuing source of amazement to most of the agency people. There is a limited awareness of the scope of zoo expertise in small population biology or of their willingness to undertake captive propagation programs for conservation.

4. I made presentations on conservation issues at the below places and times:

- Indianapolis Zoo, 20-21 October 1989.
- St. Thomas College, 10 October 1989
- University of Wisconsin- Stevens Point to School of Wildlife, 9 November 1989 .
- University of Michigan, 6 December 1989.
- Indian Zoo Directors meeting.
- University of Minnesota College of Veterinary Medicine, 25 January 1990.

5. Attended a Population Biology Workshop on 22-27 October 1989 at Front Royal, National Zoological Park, proceedings of which will be forthcoming. I also met with several Regional Coordinators of SSP programs.

6. Attended the Reintroduction of Captive Bred Animals Symposium on 24-26 November 1989 in London. Met with the Partula working group on 27 November. I also met with the World Conservation Monitoring Centre (WCMC) review group on 27-29 November at Kew. This meeting and review is of particular importance to the CBSG and other Specialist Groups because WCMC could be a major information support service on endangered species. They are in the process of redesign. We have multiple data needs which cannot be satisfied by WCMC as it presently functions. We are in the process of developing our own programs of information collection, handling, and distribution. The outcome of the WCMC review could have a significant impact on how we approach these needs.

7. Travelled to the Palm Desert Zoo on 1-3 December 1989 for talks and discussion of Captive Action Plans with Karen Sausman.

8. Attended the AAZPA Conservation Director selection committee in St. Louis on 8 December 1989 to review applicants. An advertisement in the journal, *Science*, was recommended. The final selection is to occur in February, 1990. The AAZPA Conservation Office is to be moved from Minneapolis, Minnesota to Washington, D.C., USA by 1 June 1990 or sooner, if appropriate.

9. Attended a Przewalski Horse meeting in San Diego, California, USA for the preparation of a draft Global Masterplan on 9-11 December 1989. The document produced is to be used as basis for discussion by an international meeting of holding institutions in Leipzig on 18-23 May 1990. Copies with recommendations are being distributed and are available from the CBSG office.

Activity Report...

10. Attended the Indian Zoo directors meeting in Junagarh (Sakkarbaug Zoo), India on 12-20 January 1990. There, I chaired a session, made a presentation on small population management and the role of CBSG, and chaired the resolutions committee. Extensive contacts with people involved with the Asian lion were made.

11. Reviewed a proposed breeding center at New Orleans Zoo on 23-24 January 1990 and at the Columbus Zoo on 25-26 January 1990. The review included a discussion of problems, species selection, and preparation for release programs. Minutes were prepared and are available from the CBSG office.

12. Visited the State of Minnesota Geographical Information System (GIS) and Land Management Center and saw demonstrations of software, applications, and programs. Discussed our interest in map-based data on species and reserves. They have a software package that might be useful (EPPLE 7) which we will test. We are in the process of evaluating a range of low-end software packages that might be useful in an international program for species monitoring. We will describe and discuss these at the annual CBSG meeting in Copenhagen. These applications are potentially important for the Heritage Species Program.

13. Visited the The Nature Conservancy (TNC) on 5-6 February 1990 at the invitation of Bob Jenkins to allow us (CBSG and ISIS) to become familiar with the TNC database and data collection apparatus (State Heritage Programs). The ARKS and SPARKS programs were demonstrated to them. We discussed the needs of CBSG and other Specialist Groups and the SSC. It became clear that we cannot directly use their software and that our data needs cannot be met from their databases. An agreement was made to keep them informed of our activities and programs. Their data collection software and system might be directly useful to WCMC.

14. I have been invited to participate on the Strategic Planning Committee of the AAZPA as a part of its long term planning process. This will involve three meetings.

15. An intense travel schedule is being undertaken in 1990 to increase our network of zoos and biologists and to gain diverse experience as rapidly as possible with the application of the PVA approach to species problems. We are striving to include as many people as possible and to develop a pattern of procedures, products, and skills that might be more widely applied. I am writing a book on our experience with this process in an effort to make explicit the common patterns that seem to be present.



CBSG Chairman's Schedule

For those having difficulty keeping up with the activities of the CBSG chairman, Ulie Seal, or having trouble believing that Ulie *really* isn't in the office when they call, we offer the below schedule for your information:

1. Attend American Association of Zoological Parks and Aquariums Strategic Planning Committee, March 16-17, 1990, Washington, D.C., USA.
2. Attend Species Survival Commission Steering Committee meeting, March 18-19, 1990, Washington, D.C., USA.
3. Conduct Population Viability Analysis Session for Bali Mynah, March 21-24, 1990, Bogos, Indonesia.
4. Attend meeting of Australian and New Zealand zoo directors, March 26 - April 4, 1990, New Zealand.
5. Attend Gibbon Action Group, April 5-6, 1990, Minnesota Zoological Garden, Apple Valley, Minnesota, USA.
6. Attend American Association of Zoological Parks and Aquariums Strategic Planning Committee, April 16-17, 1990, Denver, Colorado USA.
7. Attend conference on Wildlife Research for Sustainable Development, April 21-28, 1990, Nairobi, Kenya.
8. Conduct Population Viability Analysis Workshop for the Florida Key deer, May 1-3, 1990, Marathon, Florida, USA.
9. Serve on North American delegation for Siberian Tiger Importation from Soviet Union, May 6-12.
10. Attend meeting on Przewalskii Horse Global Management Plan, May 18-25, 1990, Leipzig, DDR.
11. Ethiopia Workshop, June 7-16, 1990, Bali National Park, Ethiopia.
12. Attend American Association of Zoological Parks and Aquariums Strategic Planning Committee, June 18-19, 1990, Tulsa, Oklahoma, USA.
13. Tamarin PVA Workshop, June 21-28, Brazil (tentative).
14. Present paper at conference on Population Ecology and Wildlife Toxicology of Agricultural Pesticide Use, July 22-27, Kiawah Island, South Carolina, USA.
15. Conduct CBSG Annual Meeting and attend IUDZG meeting, August 24-28, 1990, Copenhagen, Denmark.
16. Give presentation at conference on Biotechnology and Conservation of Genetic Diversity, September 5-6, 1990, London, England.
17. Present paper on population viability analysis at conference on Genetics and Wildlife Conservation, September 9-12, 1990, Bologna, Italy.
18. Attend SSP meetings at AAZPA annual conference, September 22-27, Indianapolis, Indiana, USA.



Meetings...

Population Viability Analysis Session for Bali Mynah, March 22-24, 1990, Bogor, Indonesia. Contact: Bas van Balen, PO Box 47, Bogor, Indonesia; or Robert E. Seibels, Riverbanks Zoological Park, P.O.Box 1060, Columbia, South Carolina 29202, USA.

15th Desert Tortoise Council Symposium, March 30-April 2, 1990, Victorville, California, USA. Contact: Secretary, Desert Tortoise Council, 5319 Cerritos Ave., Long Beach, California 90805, USA.

IUCN/SSC Crocodile Specialist Group Meeting, April 23-27, 1990 and SSP Crocodile Advisory Group Meeting, April 24-25, 1990. Contact: Dr. F. Wayne King, Florida Museum of Natural History, Gainesville, Florida 32611, USA.

Amphibian and Reptile Working Meeting for Species Survival Plans, April 28-29, 1990. Contact: Dr. Hugh Quinn, Section of Herpetology, Houston Zoological Gardens, 1513 North MacGregor Way, Houston, Texas 77030, USA.

Wildlife Research for Sustainable Development, April 22-26, 1990, Nairobi, Kenya. Contact: Dr. Peter Kat, Nairobi, Kenya.

Population Ecology and Wildlife Toxicology of Agricultural Pesticide Use: A Modelling Initiative for Avian Species, July 22-27, 1990. Kiawah Island, South Carolina. Contact: R.J. Kendall, The Institute of Wildlife and Environmental Toxicology, P.O. Box 2278, Clemson University, Clemson, South Carolina 29632, USA.

Symposia on Wildlife Conservation, August 23-30, 1990, Yokohama, Japan. Contact: N. Maruyama, General

Secretary of the SWC Organizing Committee, Faculty of Agriculture, Tokyo Noko University, Saiwaicho, Fuchu, Tokyo 183 Japan.

Captive Breeding Specialist Group Annual Meeting, August 24-26, 1990, Copenhagen, Denmark. Contact: CBSG, 12101 Johnny Cake Ridge Rd., Apple Valley, Minnesota 55124, USA.

Biotechnology and Conservation of Genetic Diversity, September 5-6, 1990, Zoological Society of London, Regent's Park, London NW1 4RY England.

Genetics and Wildlife Conservation, September 10-12, 1990, Bologna, Italy. Contact: Dr. Ettore Randi, Istituto Nazionale di Biologia della Selvaggina, via Ca Fornacetta, 9, 40064 Ozzana Emilia (BO), Italy.

American Association of Zoological Parks and Aquariums Annual Conference, September 23-27, 1990, Indianapolis, Indiana, USA. Contact: Travis Edenfield, Indianapolis Zoo, 1200 West Washington St., Indianapolis, Indiana 46222, USA.

European Union of Aquarium Curators, October 14, 1990. Contact: Dr. Chris Andrews, Zoological Society of London, Regents Park, London NW1 4RY England.

Gametes and Embryos of Animals—Storage and Manipulation, November 5-9, 1990, Liblice, Czechoslovakia. Contact: Institute of Animal Physiology and Genetics, Department of Genetics, 277 21 Libechov, Czechoslovakia.

IUCN General Assembly, November 28-December 5, 1990, Perth, Australia. Contact: IUCN, Avenue du Mont-Blanc, CH-1196 Gland, Switzerland.



CBSG News

The CBSG news is published by the Captive Breeding Specialist Group, Species Survival Commission, International Union for the Conservation of Nature and Natural Resources. CBSG News is intended to inform CBSG members and other individuals and organizations concerned with the conservation of plants and animals of the activities of the CBSG in particular and the conservation community in general. We are interested in exchanging newsletters and receiving notices of your meetings.

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