CBSG News

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

CBSG Newsletter Expands Communication Role

There have been more than 150 written responses to the first issue of this newsletter and all have been positive. We are strongly encouraged to continue the development of the CBSG newsletter as a means of building a global communication network for all institutions and agencies involved in captive propagation programs for conservation of the endangered fauna of this planet. About 2,000 copies of this second issue will be distributed in more than 120 countries.

Our masthead carries the names of supporters of the core budget of the CBSG. Benefactors contributed $10,000 or more for the first year and have pledged to contribute the same for a total of three years. Contributors are those who contributed and pledged other amounts. More information will be available in a special report, in the newsletters, and in the CBSG annual meeting book.

A meeting of 41 representatives of zoo associations from all over the world was held on 23-25 April at Front Royal, VA (USA) under the auspices of the AAZPA and Smithsonian Institution. The participants had an opportunity to discuss the many common problems zoos everywhere share. A report and resolutions from that meeting are in this newsletter. The need for development of continuing communication links was emphasized. To assist in this process we will continue to offer space for brief reports from national and regional zoo associations in this newsletter.

A common need of all captive conservation programs is the establishment of national and regional programs for collaborative management of healthy populations of threatened species held in captivity. This requires development of regional studbooks and record keeping for following the individual animals as part of a collectively held population. Such record keeping requires identification and marking of individual animals so that genetic and demographic management can be accomplished. Marking of individual animals has been difficult to accomplish and has required many different methods. The recent improvements in transponder technology offer the promise of a single unique lifelong internal mark that will be applicable to all of the vertebrates. A summary of a report prepared for the upcoming CBSG meeting is presented in this newsletter. I anticipate that we will agree on an international standard for the devices to be used in captive animals. A full report will be presented in the next issue of the newsletter.

Our captive propagation programs for conservation of endangered species are designed to provide animals for re-establishment species in the wild and for support of small and fragmented wild populations. Thus we need to include continuing monitoring of the status of the species and its habitat as part of a species survival program. With this commitment, it becomes reasonable to include as broad a range of fauna as possible in the program for monitoring a particular park, reserve, or protected area for occurrence of the species of primary interest. These thoughts are leading programs that have been primarily focused on a single species to expand to include all of the fauna of a country or region. A report here on Madagascar is an example of such a program which now includes an international collaborative program with habitat protection, field research, and captive propagation components for mammals, birds, and reptiles. I expect that this approach will be adopted more widely and result in closer working relationships with professionals in the wildlife management and ecology professions.

Ulysses S. Seal, CBSG Chairman

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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. Contributions and comments are welcome. Send materials to: CBSG News, 12101 Johnny Cake Ridge Rd., Apple Valley, Minnesota 55124 USA. Fax (612) 432-2757.

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News Bites...

Tom Foose Named CBSG Executive Officer

Dr. Thomas J. Foose has joined the staff of the Captive Breeding Specicalist Group (CBSG) as its executive officer. This position was created in response to the increasing workload and activities of the CBSG office. His primary responsibilities will be 1) to coordinate the development of captive action plans; 2) to develop mechanisms and protocols for coordination of the various regional captive breeding programs, 3) to improve the linkage between field and captive programs; and 4) to assemble biological information for Heritage Species candidates. Dr. Foose joined the CBSG in May, 1990 after spending the last nine years with the American Association of Zoological Parks and Aquariums (AAZPA) as its conservation coordinator/director. In that capacity, Dr. Foose was responsible for the development and coordination of North American Species Survival Plans. Dr. Foose received his Ph.D. in biology from the University of Chicago and has a special interest in the conservation of rhinos and other large mammals. He has served in curatorial positions in both the Philadelphia and Oklahoma City zoos and has field experience in Africa and Asia. He has extensive acquaintances with members of the world zoo community. The staff at the CBSG office extends a warm welcome to Tom.

New Species of Lion Tamarin Found in Brazil

A new species of tamarin, the black-faced lion tamarin, has been discovered on an island south of Sao Paulo, Brazil. The squirrel-sized tamarin has a golden pelage with a black face, forearms, and tail. The tamarin was named *Leontopithecus caissara* after the caicaras, or local fishermen, who live on the island where the tamarin was found. It was found in spring, 1990 on the island of Superagui in the Brazilian state of Parana. Parana is a highly-developed area which retains only three percent of its original forests. Part of the island is a national park, but the black-faced lion tamarin was located outside of this park. Preliminary surveys indicate that only a few dozen of these animals exist. There three other lion tamarins, the most famous of which is the golden lion tamarin which has been bred in captivity and successfully reintroduced into wildlife reserves in Brazil (see page 3 for related article). The golden lion tamarin is all golden, whereas the other two species are either all black or black with a golden head. All of the tamarins are endangered due to their inhabiting coastal forests which are highly developed.

AP Photo

Northern Spotted Owl Officially Classified as Threatened Species

The northern spotted owl has been officially classified as a threatened species under the Endangered Species Act of 1973 after years of conflict between environmentalists and loggers. The decision was announced by the United States Fish and Wildlife Service in June, 1990. This decision recognizes that the owl is threatened with extinction and requires protection from activities which threaten its viability. There are about 3,000 pairs inhabiting "old growth" forests of the northwestern coastal forests of the United States. The species has lost habitat due to logging activities in the forests. The threatened status of the owl may now halt logging in these old, mature forests with the potential loss of thousands of jobs. In a recent development, President George Bush intervened in the process and requested a review of the economic impact such a classification would have on the local economy. A specific management plan for the owl has not yet been adopted.

In Vitro Fertilization Produces First Tiger Cubs

The first tiger cubs born as a result of *in vitro* fertilization and embryo transfer occured at the Henry Doorly Zoo in Omaha, Nebraska USA on 27 April 1990. A team of physiologists from the National Zoo in Washington, D.C. in collaboration with researchers and veterinarians from Henry Doorly Zoo, the Minnesota Zoo, and the CBSG, hormonally-stimulated a female Bengal tiger to ovulate. These ova were surgically removed from the tiger and combined with sperm from an electroejaculated male. The fertilized egges were then transplanted into a surrogate Siberian tigress who delivered three cubs. Two of the cubs died within a few weeks of birth, but the surviving female cub appears to be doing fine. *In vitro* fertilization of felids is a difficult process, at best, and this success greatly advances the use of this technology in the felid management.

Status of Free-ranging Viet Nam Primates Assessed

A field survey was conducted in July-October, 1989 to assess the conservation status of certain primates in Viet Nam. The survey was conducted by Radoslaw Ratajszczak (Wielkopolski Park Zoologiczny, Browarna, Poland), Roger Cox (London, U.K.), and Ha Dinh Duc (University of Ha Noi, Ha Noi, Viet Nam). The species of interest were Francois' leaf monkey (*Trachypithecus francoisi*), Tonkin snub-nosed langur (*Rhinopithecus avunculus*), Concolor gibbon (*Hylobates concolor*), and other gibbons. The purpose of the survey was to 1) establish the present distribution and status of the target species in Viet Nam, 2) determine the population sizes and densities of each species, 3) determine current threats to each population, and 4) determine whether any viable populations exist in protected areas of Viet Nam.

The initial impetus for this project was provided by Roland Wirth (Zoological Society for the Conservation of Species and Populations, Munich, Germany) and Simon Stuart (IUCN, Gland, Switzerland). Financial assistance was provided by the Zoological Society for the Conservation of Species and Populations and the World Wildlife Fund International. Many individuals in Viet Nam were also essential for the success of this study. A summary of the report is provided below.

Francois' Leaf Monkey

Species: Trachypithecus francoisi delacouri
Distribution: Cuc Phong National Park; a range of hills northwest of Cuc Phuong National Park; Thuong Xuan and Quan Hoa districts, Thanh Hoa province
Protected Areas: Cuc Phong National Park
Status: Endangered
Threats: Hunting and habitat loss
Remarks: May occur in Laos; not held in captivity
Conservation Recommendations: Increase patrol personnel in Cuc Phong National Park to decrease hunting and habitat loss; relocate the remaining Muong village in Cuc Phuong's central valley, if possible; restrict agricultural expansion by villagers; conduct field studies of the species within the park; educate local inhabitants of the role of the park; survey populations outside of the park; monitor illegal harvesting for trade of the species; consider a captive breeding program should the park's population decline further.

Species: Trachypithecus francoisi francoisi
Distribution: Hills north of Ra Ban village, Cho Don district, Bac Thai province; Cho Ra district, Cao Bang province
Protected Areas: Ba Be National Park
Status: Endangered
Threats: Hunting and habitat loss
Remarks: Approximately 600 T. f. francoisi may occur in China. About 100 animals are held in zoos in U.S.A., Japan, and China.
Conservation Recommendations: Additional surveys to locate other populations of T. f. francois; increase national park personnel to patrol for hunting, logging, or illegal agricultural clearing; develop the park for tourism to increase income for the park; educate local human populations on the purpose and value of the park

Species: Trachypithecus francoisi hatinhensis
Remarks: No information relating to this subspecies was obtained during the survey

Species: Trachypithecus francoisi poliocephalus
Distribution: Cat Ba island, Hai Phong province
Protected Areas: Cat Ba National Par
Status: Endangered
Threats: Hunting and habitat loss
Remarks: Does not occur on the mainland of Viet Nam; not held in captivity
Conservation Recommendations: Increase personnel and equipment (boats) to patrol Cat Ba National Park to decrease hunting, logging, and human encroachment; establish a captive breeding program; educate local human populations on the purpose and value of the park

Tonkin Snub-nosed Langur

Species: Rhinopithecus avunculus
Distribution: Restricted to small, fragmented patches of mixed broad-leaved and bamboo forest on hills northwest of Bac Thai province and adjacent areas of Ha Tuyen province
Protected Areas: None
Status: Endangered
Threats: Hunting and habitat loss
Remarks: Species endemic to Viet Nam; not held in captivity; most threatened primate in Viet Nam; highest priority for conservation action

Conservation Recommendations: Establish captive breeding program; protect remaining areas of natural habitat against further exploitation; control hunting throughout this species' range; educate local people on the effects of hunting and to minimize conflicts between this species and farmers; instigate field surveys in other areas to locate other populations; study the ecology of the species; retain IUCN endangered status

Black Gibbon
Species: Hylobates concolor concolor
Remarks: No information relating to this species was obtained during the survey. Most of the natural vegetation throughout the range of the black gibbon in north Viet Nam has either been lost or is very fragmented. There are probably few forest areas of sufficient size able to support gibbon populations

White-cheeked Gibbon
Species: Hylobates leucogenys leucogenys
Distribution: Que Phong and Quy Chau districts, Nghe Tinh province; Quan Hoa, Ngoc Lac, and Thuong Xuan districts, Thanh Hoa province
Protected Areas: None
Status: Endangered in Viet Nam
Threats: Hunting and habitat loss; pet trade of young
Remarks: Also inhabits China and norther Laos; approximately 100 animals held in captivity worldwide
Conservation Recommendations: Control hunting; increase management of habitat; consider creation of reserves; survey for suitable habitat for such reserves; control trade wherever possible of young gibbons; confiscate young gibbons as they appear on the market and transfer to qualified zoos participating in a captive breeding program; instigate further field surveys

Species: Hylobates leucogenys siki
Distribution: Anh Son, Tuong Cuong, and Tuong Duong districts, Nghe Tinh province
Protected Areas: None
Status: Endangered in Viet Nam
Threats: Hunting and habitat loss; pet trade of young
Remarks: Probably also inhabits parts of eastern Laos; four animals held in cap tivity
Conservation Recommendations: Control hunting; increase management of habitat; consider creation of reserves; survey for suitable habitat for such reserves; control trade wherever possible of young gibbons; confiscate young gibbons as they appear on the market and transfer to qualified zoos participating in a captive breeding program; instigate further field surveys

Phayre's Leaf Monkey
Species: Trachypithecus phayrei
Remarks: Not observed in the wild during the survey, however, two individuals (1.1) were confiscated during this period and are now held in captivity. This species should be considered vulnerable to extinction.

Red-shanked Douc Langur
Species: Pygathrix nemaeus
Distribution: Indochinese peninsula of central Viet Nam
Status: Endangered
Threats: Loss of habitat to agriculture
Remarks: Reliable reports of the existence of this primate were obtained by the survey team and is apparently locally common in some areas

Wildlife 2001 Conference

Wildlife 2001 is scheduled to be held in Oakland, California, USA on 29-31 July 1991. This conference is modeled on the highly successful Wildlife 2000 held several years ago. Wildlife 2001 will focus on population biology whereas the previous conference concentrated on modeling habitat relationships of terrestrial vertebrates. The initial sponsors of the conference are the Bay Area Chapter of The Wildlife Society and the Department of Forestry and Resource Management, University of California, Berkeley.

The objective of the conference is to bring together international authorities to address the most current knowledge and techniques in wildlife population dynamics. The conference will seek to combine theory and pragmatism to develop scientifically sound solutions to real-world problems. The focus of the conference is on wildlife populations, but other elements relevant to population dynamics, such as predation, competition, parasitism, disease, physiology, and genetics, are included. Topical sessions tentatively scheduled include: methods, marine mammals, waterfowl, overpopulations, modeling, herptiles, large herbivores, game birds, seabirds, threatened populations, passerine birds, large carnivores, raptors, and furbearers. For conference information, contact:

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Madagascar Fauna Captive Propagation Group Formed

Over the last four years, zoos and other institutions in the United States, continental Europe, and Great Britain have sought to form a group to assist Madagascar lemurs. In 1987, an accord was signed between many of these institutions and officials from the government of Madagascar wishing to collaborate in protection, captive breeding, and training. More recently, several North American zoos enlisted the major parties in a concerted effort to negotiate formal agreements with the Malagasy government to assist conservation of all fauna through training, furnishing materials and capital funds, education, surveys, linkages with universities, and captive breeding.

Meetings held in 1988 resulted in an outline to coalesce the interested concerns from North America, Great Britain, and continental Europe. A steering committee was formed to create a document formalizing the Madagascar Fauna Group (MFG) and to approach the Malagasy government to explore an accord to further previous agreements. The MFG Steering Committee met with officials in Madagascar in June, 1989. An accord was signed and plans made to place personnel in Parc Tsimbazaza in Antananrivo and at Ivoloina Field Station in Tamatave.

In November, 1989, technical advisors were placed in Ivoloina to oversee specific projects of the MFG including creating spaces to breed and exhibit greater numbers of animals; creating space to hold a greater number of animals in transit; establish quarantine facilities for animals entering Madagascar for release programs; establish a mechanism for reintroduction programs in reserves of Madagascar; formalize a training program for Malagasy staff; monitor results and encourage surveys of all classes of animals; and collect the best data possible on populations, sizes, and distribution. Technical advisors have been selected to be placed in Parc Tsimbazaza in Antananarivo and will arrive there in spring, 1990 to undertake duties similar to those in Ivoloina.

The MFG has assisted with the review of the IUCN Lemur Red Data Book and has helped with the publishing costs. The MFG has funded captital projects in Parc Tsimbazaza and at Ivoloina. The MFG has helped fund a conservation pamphlet written in French to be distributed to the people of Madagascar. The MFG Steering Committee in cooperation with specialist groups of the IUCN has begun establishing lists of species of mammals, birds, reptiles, and fish and then prioritizing those which need the most critical attention. All of the work of the MFG has been in concert with national and international conservation groups so that a network of information and efforts is made in the most efficient manner.

Individuals desiring more information about the MFG should contact: David Anderson, Project Coordinator, Madagascar Fauna Group, San Francisco Zoo, 101 Zoo Road, San Francisco, CA, USA 94132

Madagascan Herpetofauna Recommendations Made

In January-February, 1990, four representatives of the Madagascar Fauna Group (MFG), the CBSG, and other institutions visited Madagascar and met with several individuals there regarding herpetofauna conservation. The representatives were John Behler (New York Zoological Society), Rick Hudson (Fort Worth Zoological Park), John Iaderosa (St. Catherine's Island Wildlife Survival Center), and John McLain (San Antonio Zoological Gardens).

Herein is a summary of their report made to David Anderson , MFG, and Ulie Seal, CBSG. Their report listed reptiles and amphibians which 1) are important elements of Madagascar's herpetofauna, 2) are viewed as the highest priority for zoological park exhibition, propagation, and research, and 3) should receive the highest priority for developing long-term conservation programs.

Plowshare Tortoise (*Geochelone yniphora*).

The status of the world's most endangered tortoise continues to decline. Considerable habitat has been lost since Curl's et. al. evaluation in 1985. The tortoise facility at Ampijoroa Forest Preserve held 5.4.20 specimens as of 25 January 90. Recommendations:

1. Transfer one male to St. Catherine's Island tortoise facility where 1.2 adults are held.
2. Additional specimens should be recruited from the tortoise population in the village of Cape Sada where 20-40 are estimated to be held as pets. Perhaps Radiated Tortoises could be exchanged for Plowshare Tortoises. Radiated Tortoises might be available from the confiscated population held at Ivoloina.
3. Support the development of an Angonoka reserve on Cape Sada. It appears that the Malagash would welcome a reserve within the species' natural range if monies were available.
4. Improve security at the Ampijoroa tortoise facility in anticipation of increased tourism.
5. Design a plan for dispersal of young tortoises since all offspring are currently held at a single location.

6. Diets of young tortoises should be reviewed by a nutritionist. Some young appeared underweight and their shells were somewhat less ossified than expected.

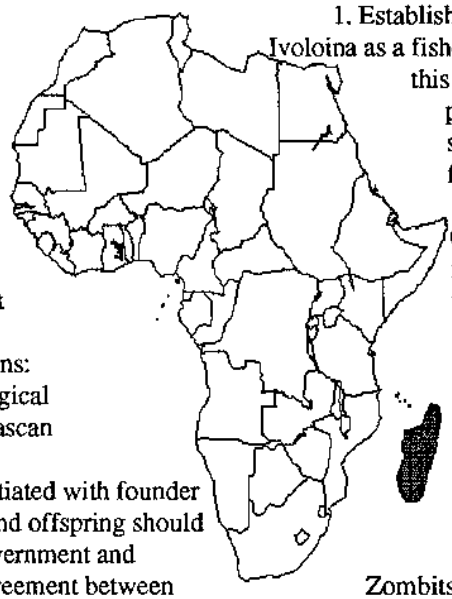
Radiated Tortoise (*Geochelone radiata*)

This species is currently not endangered. Although excellent habitat and a large number of tortoises were observed, the species has been severely depleted and some populations extirpated from the extremes of its range. This species is widely regarded as the world's most beautiful tortoise and the group believes that it should continue to receive special attention and that the SSP program should be advanced. Recommendations:

1. Recruit 20.10 additional founders for the SSP from among the confiscated individuals maintained at Ivoloina.

2. Greatly reduce the herd size at Ivoloina and disperse to other facilities.

3. Formalize a rehabilitation-reintroduction program for confiscated radiated tortoises.



Spider Tortoise (*Pyxis arachnoides*)

This species is poorly represented in zoological collections. The Spider Tortoise is listed as Indeterminate by the IUCN and has been reported to be declining as a result of over-collecting for the pet trade and human-caused brush fires. Recommendations:

1. Establish breeding groups at zoological parks with demonstrated interest in Madagascan herpetofauna and tortoise husbandry.

2. A captive population should be initiated with founder stock from one known locality. Founders and offspring should remain the property of the Madagascan government and disbursement of progeny be directed by agreement between all concerned parties.

3. Field research should be conducted to determine distribution, status, ecology, and reproductive biology. Such research should complement captive studies.

Flat-tailed Tortoise (*Pyxis planicauda*)

The outlook for this small resident of dry, lowland deciduous forests is bleak. The total remaining habitat appears to be about 15,000 ha. Although population data are not known, increasing human activities could degrade what habitat remains and it is possible that this species will not survive in nature. Almost nothing is known of the flat-tailed tortoise's biology and little work has been done in captivity. Recommendations:

1. In addition to the captive breeding conducted at Ampijoroa, additional propagation trials should be initiated at other zoological parks under an agreement similar to that recommended for *Pyxis arachnoides*.

2. The "Swiss Forest" (Amborompotsy) as currently managed should be secured as an officially-protected reserve for this species.

3. Life history, ecology, and status studies should be greatly expanded and encouraged.

Madagascan Side-necked Turtle (*Erymnochelys madagascariensis*)

This endemic aquatic species is of great zoogeographic interest because it is most closely related to South American turtles in the genus *Podocnemis*. The biology and status of this turtle remains poorly known despite some recent investigations. Its numbers are believed to be declining over much of its range in western Madagascar because of habitat degradation and exploitation for food. Very few specimens are held in captivity. Recommendations:

1. Establish a quasi-natural population at Ampijoroa or Ivoloina as a fisheries research project. Since exploitation of this species will probably increase, it seems prudent to investigate its farming potential to see if sustainable yield management is feasible.

2. The Turtle and Tortoise Advisory Group should evaluate interest among zoos for this species and develop a coordinated project with the Ivoloina Zoo.

3. Additional field work on the biology and nutrition of this turtle needs to be conducted and coordinated with captive data.

4. A current status survey is needed.

Standing's Day Gecko (*Phelsuma standingi*)

This species is endemic to the 21,500 ha Zombitse Forest region in southwestern Madagascar which has been designated as an area of special biologic interest. The limited range and distribution of this species coupled with increased exportation by reptile dealers, places this species in a potentially vulnerable position. Recommendations:

1. Initiate and support field research to determine current status and distribution, basic ecological data, degree of environmental damage, and extent of specimen collection for the pet trade.

2. Provide the above data to the Malagasy government as justification for curtailing trade of this species.

3. Recruit additional founder breeding stock for the United States zoo population which has a low level of genetic diversity. New recruits could be obtained from future confiscations.

Leaf-tailed Day Gecko (*Phelsuma serraticauda*)

The status of this gecko is poorly known.

Herpetofauna...

Unsubstantiated reports claim that the entire range has been reduced to one small forested region. The lizard continues to be exported by reptile dealers. Recommendations:

1. Field research and a status survey are needed to determine the extent of its range, its distribution, and threats to survival.

2. Establish a large self-sustaining captive breeding population.

Yellow-throated Day Gecko (*Phelsuma flavigularis*)

This is another poorly-known day gecko from the Perinet region of eastern Madagascar. This gecko could be the rarest *Phelsuma* in Madagascar. Recommendations:

1. Field research and a status survey are needed to determine the extent of its range, its distribution, and threats to survival.

Dwarf Chameleons (*Brookesia spp.*)

The biology of these small chameleons remains poorly known. Recommendations:

1. Improve knowledge of biology and husbandry requirements in order to have this information available should a *Brookesia* species becomes threatened in nature.

Dumeril's Ground Boa (*Acrantophis dumerili*)

The status of wild populations of this boid is poorly known. The snake is accorded CITES Appendix I protection and the Malagasy government does not allow its exportation. Dumeril's boas are found primarily in the arid southwest which has low human population densities. However, there is an acctive trade in skin products from this boa. Recommendations:

1. Refine and continue implementation of the SSP Masterplan for the snake's long-term management in captivity.

2. Acquire eight mew effective founders from a wide range of localities so as to fulfill SSP genetic objectives and to increase representation of the wild gene pool.

3. Expand programs into other institutions such as Parc Tsimbazaza.

4. Acquire adequate funding and initiate field studies concerning the autoecology and distribution of this boa.

5. Redesignate the existing regional studbook as an international studbook.

Madagascar Ground Boa (*Acrantophis madagascariensis*)

This snake is accorded CITES Appendix I protection and the Malagasy government does not allow its exportation. Nonetheless, illegal smuggling has been reported in Europe recently. This boa is not considered rare, but is subject to more exploitation for skin products. Recommendations:

1. Organize a functional studbook

2. Identify potential effective founders and arrange relocations so as to maximize reproductive potential and attempt to propagate as many of these specimens as possible.

3. Organize this species into an international studbook and propagation program for all Madagascan boids.

4. Utilize funds generated for the Dumeril's Boa SSP to provide field studies of this species as well.

Madagascar Tree Boa (*Sanzinia madagascariensis*)

This is the most common boid, although wild population numbers are unknown. The snake is accorded CITES Appendix I protection and the Malagasy government does not allow its exportation. This snake is found throughout the island except for the southwest and is generally not exploited for its skin. Recommendations:

1. Organize a functional studbook.

2. Analyze the existing captive population so as to identify potential founders and surviving progeny of decreased effective founders.

3. Relocate specimens so as to optimize reproductive potential and avoid potential inbreeding.

4. Organize this species into an international studbook and propagation program for all Madagascan boids.

Madagascar Tomato Frog (*Dyscophus antongili*)

Wild populations of this frog are declining. This species is accorded CITES Appendix I protection. Because of its large size, brilliant coloration, endangered status, and taxonomic uniqueness, the Tomato frog represents a potential "flagship" amphibian species for the MFG. Recommendations:

1. Continue efforts to organize a studbook.

2. Terminate uncontrolled institutional breeding and arrange for existing wild stock to be propagated as potential founders.

3. Complete analyses needed to establish an effective captive conservation program at MFG institutions.

Golden Mantella Frog (*Mantella aurantiaca*)

This frog is restricted to the distinctive swamp rain forest in the area of Antaniditra. The status of wild populations is unknown. The species has been intensively collected for the pet trade in recent years. Recommendations:

1. Prepare an analysis of the existing captive population and organize a program of husbandry and propagation research.

2. Initiate a field survey to determine the existing status of wild populations and evaluate the impact of commercial exploitation.

Progress Made on Indonesian Rhino Conservation

President Soeharto, President of the Republic of Indonesia, has given formal support to the Points of Agreement for Javan and Sumatran rhino conservation. The Points of Agreement were reached at a meeting held at the BIOTRAP Institute in Bogor in June, 1990 between the IUCN and the Directorate General of Forest Protection and Nature Conservation (PHPA). President Soeharto has "requested the Minister of Forestry to take the necessary steps and the Minister of State for Population and Environment to coordinate our efforts in saving and enhancing our rhino population." The agreed upon points are as follows:

General Points:

1. The recovery of the populations of the Javan and Sumatran rhinoceroses to levels that would ensure their long-term survival is among the highest conservation priorities in Indonesia.

2. The responsibility for saving these species and their natural environments rests with the authorities and people of Indonesia. However, the survival of these species are of importance and interest to the whole world and hence the international community should also contribute to the conservation of these species and their habitats.

Javan Rhinoceros

3. The long-term goal is to save the Javan rhino in its former and present natural habitat. This will entail the establishment of a total population of at least 2000 rhinos distributed over 10 to 20 viable populations (i.e., populations of 100 animals or more) in secure areas throughout the former range of the species (including in countries outside Indonesia). This means identifying and adequately protecting natural forests in advance of reintroductions or translocations.

4. To achieve this goal, the first priority is to provide strict protection for the surviving population in Ujung Kulon National Park, ensuring that the level of poaching is zero. Methods for bringing this about are given in Annex 1.

5. Another priority is to identify and protect potential forest sites for re-establishment of rhino populations in the future.

6. However, the population of rhinos in Ujung Kulon is not, and never can be, of sufficient size to secure the species for the long-term. It is too small for long term viability in ecological, demographic, and genetic terms. Plainly, it is vulnerable to catastrophic events or circumstances. In short, the Javan rhino is now in the process of becoming extinct and will be extinct unless we take action now.

7. It is likely that the population in Ujung Kulon is at, or is approaching, carrying capacity of the environment, and cannot be expected to increase much further.

8. The response to this dilemma by removal of animals from Ujung Kulon to establish other populations can be supported by decision analysis, and population viability analysis indicates the level of removal that can be sustained without impairing the survival of the Ujung Kulon population. As a matter of high priority, it is therefore recommended that two additional populations be set up in Indonesia as soon as feasible by removing animals from Ujung Kulon. The biological and management arguments are given in Annex 2. The capture protocol is given in Annex 3.

9. The greatest concern for the genetic and demographic survival of the species is to increase rapidly its numbers and to establish populations in other locations. This means that a closely managed situation is preferable initially, and therefore a captive breeding program is indicated. One of the initial captive propagation sites could be situated in or adjacent to a prime translocation or reintroduction site in Sumatra. The other captive propagation site should be located near Bogor based upon a detailed site analysis. The full list of candidate sites for captive management is given in Annex 4.

10. Before removal of animals from Ujong Kulon can take place, it is essential that the receiving sites be adequately prepared, and that all the necessary aspects of protection are in place.

11. Identification, preparation, and protection of additional proposed relocation and reintroduction sites should be started as soon as possible, otherwise such sites might be lost, thereby jeopardizing the long-term goals of the recovery programme. A preliminary assessment of such sites is given in Annex 5, and protocols for reintroduction are given in Annex 6.

12. Based on a risk analysis of advantages and disad-

Indonesian rhino...

vantages of potential sites, the first removals and transfers to the receiving sites should take place in 1990, provided advance rehabilitation and protection of these sites is carried out. Removals and transfers should continue in 1990 and 1991 until the required numbers of animals are obtained. Procedures for capture and captive management are given in Annexes 3 and 7.

13. Additional captive breeding facilities should be considered in relation to the conservation needs of the species as the captive bred population expands (see Annex 4).

14. All aspects of the conservation work on the Javan rhino should be accompanied by appropriate monitoring and research, including monitoring of the Ujung Kulon, captive, translocated, and reintroduced populations. Guidelines for research are given in Annex 8.

15. Similarly, all conservation projects on the Javan rhino should include a training component, including captive breeding projects. Guidelines for training are given in Annex 9.

Sumatran Rhinoceros

16. The long-term goal for the species in Indonesia is to secure viable populations in the wild amounting to at least 1000 animals in Sumatra and 300-500 animals in Kalimantan.

17. The top priority is to enforce strict protection and anti-poaching measures in Kerinci-Seblat, Gunung Leuser and Barisan-Selatan National Parks. The guidelines given in Annex 1 for the Javan rhino apply to the Sumatran rhino as well, except that specific anti-poaching units are needed in addition to normal reserve guards.

18. Surveys are needed to locate additional viable populations for protection in Sumatra (perhaps in northern Aceh and Gunung Patah), and in Kalimantan (perhaps along the border with Sarawak).

19. The existing capture programme for doomed animals for captive breeding should be continued until such time as sufficient founder animals are available for zoos, both in Indonesia and in the United States and the United Kingdom. The current status of the capture programme is outlined in Annex 10.

20. The captive breeding programmes should not only secure the total population adequately for long term survival, but also to provide animals for selective reintroductions, and a programme for such reintroductions should be developed as appropriate.

21. The Sumatran Rhinoceros conservation programme has similar training, monitoring, and research needs to the Javan Rhinoceros Programme. Training, in particular, should be an integral part of each project (see Annexes 8 and 9).

22. If no viable population can be found in Kalimantan, a long-term activity would be to enter into an agreement with Malaysia to seek animals from the Sabah captive breeding programme.

Closing Points

23. A Rhinoceros Conservation Unit should be established within the PHPA to have responsibility for all operational aspects of rhino management in Indonesia.

24. The effectiveness of protection measures for important rhinoceros populations is closely related to the attitude of the local people towards the protected areas. Similarly, education and awareness programmes are needed in all parts of Indonesia, emphasizing the country's importance and responsibility for both species of rhinoceros.

25. Appropriate rural development projects in the buffer zones around the reserves are an important means of avoiding and resolving conflicts over resource use.

26. Continued vigilance is needed to eliminate the illegal trade in rhinoceros products, and to bring offenders to justice. Increases of penalties and other appropriate actions are recommended to enhance the enforcement of the laws pertaining to these crimes.

27. International cooperation on rhinoceros conservation with other Asian countries should be pursued, with a view to sharing information and uncovering illegal trading routes.

28. An international awareness and fund-raising programme on the conservation needs of Indonesia's rhinos should be launched as soon as possible.

Another workshop to develop further plans for the implementation of the Indonesian rhino conservation programs will be conducted in Bogor, Indonesia 5-7 September 1990

Rare Black-necked Cranes Hatched in Captivity

Two, rare black-necked crane chicks were hatched almost simultaneously in the United States and West Germany in July, 1990. The West German chick was born just hours before the one born in the U.S. This was the first hatchings of these birds in captivity in North America. The eggs were produced by two separate pairs of black-necked cranes given by the government of China to the International Crane Foundation in Wisconsin USA and Vogelpark Walsrode in West Germany. Scientists at the two preserves are planning to breed the Wisconsin-hatched male to the female chick in Germany.

Fewer than 1,000 cranes are believed to exist. Most are found in the wetlands of western China where their habitat has been diminished by agriculture and human development.

PVA Workshop Held for Lion Tamarins

A Population Viability Analysis (PVA) workshop on the genus, *Leontopithecus*, was conducted 20-22 June 1990 in Belo Horizonte, Brazil. The four species of lion tamarin (*Leontopithecus rosalia, L. chrysomelas, L. chrysopygus*, and the newly discovered *L. caissara*) are all threatened in the wild. Following is a summary of the PVA workshop.

Objective:

Recommend actions and schedule needed to assure the long-term survival of each species of *Leontopithecus* as an evolving species in the wild, with greater than 98% probability of survival for 100 years.

Current and Potential Status of the Four Species:

The four species of lion tamarins are threatened in the wild. Their historical habitat has been reduced to only 2% of its original area and is fragmented to such a degree that the most abundant species (*L. chrysomelas*) numbers less than 600 in the protected areas. Parts of this habitat and individual populations of each species are in immediate danger of being lost. This will further reduce the viability of these species and increase their risk of extinction. Survival and conservation of these species in the wild will require:

1. Immediate actions to secure and protect habitat;
2. Inventorying and protection of the wild population;
3. Maintenance of scientifically managed captive populations;
4. Upon completion of the above, restocking of suitable habitat lacking tamarin populations.

Based upon the detailed information received and condensed during the Population Viability Workshop, the following recommendations are made for the conservation of the *Leontopithecus* species:

All Species:

1. Establish each species in the wild with a total population size of at least 2000 by the year 2025.

2. Establish the population of each species in three or more separate subpopulations, each with at least 100 breeding age adults, separated sufficiently to minimize (<5%) the probability that they will be affected by the same catastrophe in the same year. Smaller subpopulations will require more intensive monitoring and management.

3. Identify, secure, and protect sufficient habitat for each species to provide the carrying capacity for a population of at least 2,000 animals.

4. If the risk of extinction of a species in the wild is greater than 5% in 100 years establish a captive population of sufficient size to be demographically secure and to retain 90% of the genetic heterozygosity of the species for 100 years. Do not use this population for reintroduction until it is demographically and genetically secure.

5. Undertake inventories for tamarins in all areas that are suitable for protection and that might contain tamarins. If the areas contain *Leontopithecus*, a census and habitat evaluation should be conducted to provide the information for development of a management protocol.

6. Develop a population model and management plan for each of the subpopulations and protected areas as well as each captive population as a part of the conservation plan for each species of *Leontopithecus*.

7. Develop a metapopulation model and plan for each species of *Leontopithecus* which integrates the conservation strategies for all of the wild subpopulations and the captive populations.

8. In the event that captive animals are used to reinforce wild populations, prevent the introduction of infectious, metabolic or developmental conditions that may have adapted to or developed in captive animals.

Fire Threatened Tamarin Reserve

A fire in the Poco das Antas Federal Biological Reserve threatened the last sizable refuge of the endangered golden lion tamarin. The fire has destroyed at least 30% of the reserve, mostly in degraded areas. The reserve is the site of the Golden Lion Tamarin Conservation Project, a highly-successful reintroduction effort. The forested areas where the tamarins live were not affected by the fire and no animals were known to have been injured. The areas affected were regenerating and could have served as future tamarin habitat. During the last two years, the reserve has reached its maximum carrying capacity for tamarins and animals have been subsequently placed on private farms in isolated patches of forest near the reserve.

The fire is a good example of stochastic environmental catastrophes that can threaten critical populations located in single areas.

Information to be Gathered on Tropical Field Stations

Information on tropical field stations or facilities for ecological research is being sought by the National Zoo. Individuals associated with such facilities are encouraged to contact the below individual. You will be sent a detailed questionnaire. The compilation of this information will be useful in the coordination of and communication between tropical field stations/ecological research facilities. Please contact: Dr. Chris Wemmer, Conservation and Research Center, National Zoological Park, Front Royal, VA 22630 USA, FAX: (703) 635-4166, BITNET: NZPEMOO1@SIVM

Giant Panda Born in Captivity in Mexico

A giant panda was born in captivity at the Chapultepec Zoo in Mexico City on 1 July 1990. The mother was a female (Tohui) bred at Chapultepec who was naturally bred by a male (Chia Chia) on loan from the London Zoo. The giant panda was born as a result of a precedent-setting loan of a giant panda by the London Zoo to the Chapultepec Zoo after the death of their breeding male.

In other news, a sister (Xiu Hua) to Tohui was inseminated by London Zoo and Chapultepec veterinarians using semen collected from Chia Chia on 21 April 1990. The staff at Chapultepec believes that she may be pregnant with delivery expected in mid-August.

Checklist of Threatened Birds Available

The 1990 second edition of the *World Checklist of Threatened Birds* by John Norton, Simon Stuart, and Tim Johnson contains information on exploitation, live animal trade, and collections on almost 2,220 species, including those listed in CITES appendices and in the IUCN Red Data Book. It also contains scientific synonyms, a 459-citation bibliography, and a scientific and common names index.

This edition is available for £20 from the Nature Conservancy Council, Northminster House, Peterborough PE1 1UA, United Kingdom.

Symposium to be Held on Biotechnology and Genetic Diversity

A symposium entitled, "Biotechnology and the Conservation of Genetic Diversity" will be held 4-5 September 1990 in London, United Kingdom, The symposium, sponsored by the Zoological Society of London, will feature several international experts. Program titles will be:

- Setting the scene
- Developments in artificial insemination and semen freezing in exotic species
- Preservation and transfer of eggs and embryos
- Monitoring and managing fertility *in vivo* and *in vitro*.
- Genetic challenges in long-term population management
- The role of DNA technologies
- Integrating technologies into breeding programs

Individuals interested in attending this syposium should contact the Zoological Society of London at the address given in the Meetings column.

There's Still Time..

Persons interested in attending the 1990 annual meeting of the Captive Breeding Specialist Group may still have time to register by the time that you receive this newsletter.

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:

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

Chairman's Report from Ethiopia

1. We traveled extensively to parts of the Bale Mountain National Park and saw many mountain nyala, simien jackal, other mammals, wattled crane and more than 70 other bird species. We all agreed that the trip was worthwhile and valuable for our understanding of the activities of the Hillmans and the EWCO in wildlife conservation and management in Ethiopia. Indeed, all considered the trip a unique experience which could not be replaced by verbal descriptions or video documentaries. A briefing book was prepared for the workshop largely based upon materials received from WCMC.

2. The Ethiopians suggested that their conservation priorities, in order, are:

- Public Education (John Osborne projects - WWF and WCI funding),
- Staff Training
- Area Protection - Conservation area system in place; highlands of especial importance. Greatest need is meeting and incorporating needs of local peoples as participants and recipients of benefits.
- Individual Species - need to use PVAs, multiple species distribution, and monitoring information to identify priority areas. Need for mapping, monitoring, and modelling tools and analyses.
- Utilization and Sustainable Conservation - this is largely in the hands of other departments and EWCO can act primarily as management authority. Civet pilot project needed.
- An aircraft is needed to replace one lost earlier this year. ($250,000). Two Alaskan bush pilots have volunteered one year.

4. Our knowledge of the status of several species was updated at the workshop:

Mountain Nyala (*Tragelaphus buxtoni*)

The mountain nyala occurs only in Ethiopia in a total population of about 4,000 animals. There are about 2,500 in Bale MNP. There are two relict isolated populations of about 500 and 200-300. These populations have been effectively isolated from one another since at least 1970. These populations are controlled, but there is no management. There were 50 hunting licenses issued last year but only 15 animals were taken. The population was increasing at 20-23% per year in 1985 (Hillman, pers. com.) but appears to be no longer increasing. Droughts occur every 6-7 years and during the last event 3-5% of the population died.

Swayne's Hartebeest (*Alcephalus buselaphus swaynei*)

This subspecies was once distributed in Somalia and Ethiopia. Its extinction in Somalia and severe reduction in Ethiopia in the 1930's was the result of disease (rinderpest), poaching, and agricultural expansion. It now occurs primarily in the Senkelle Game Sanctuary (perhaps 2,500) with very small populations (<30) in the Awash and Nechisar National Parks. These populations are separated from each other so that natural exchange cannot occur between the populations. The Senkelle population is in an area of 36 sq km. The sanctuary has a designated area of 56 sq km. This population has increased from about 440 in 1978 to about 2,350 in 1990. The sanctuary has no free-standing water and is buffered by a state farm. The sanctuary is utilized by the local people for cattle, wood, and thatch. There is no significant poaching of hartebeest in this sanctuary..

Simien Jackal (*Canis simiensis*):

The Simien jackal is considered a true jackal. The species has been divided into two subspecies *C. s. simiensis* comprising the northern populations centering in the Simen Mountains region and the southern race, *C. s. citernii*, in the Bale Mountains National Park and the Arussi Mountains. The northern race is nearly extinct, numbering perhaps less than 15 animals. It is likely that the populations were separately established at the time of the last glaciation event 10-12,000 years ago. The species occurs above 3,000 meters in Ethiopia. It is estimated that there about 800 animals in Ethiopia. About 500-700 are estimated to be in 1,000 sq km of suitable habitat in Bale Mountain National Park. This population appears to have been stable or perhaps declining slowly since 1986. A 'major' die-off was noted six years ago which was suggested to be due to disease although no specific diagnosis was made. There appear to be numerous feral dogs in the region. Recently, evidence for hybridization of the Simien jackals with domestic dogs in Bale MNP has been reported.

Walia Ibex (*Capra ibex wali*)

The Wali Ibex exists as a single population of perhaps 350 animals in the Simen Mountain National Park which is isolated from other subspecies of ibex. It is most closely related to the Nubian ibex. It was probably isolated 10-12,000 years ago during the last glaciation event although its mode of establishment in the Simen mountains is uncertain. It has been limited in distribution for hundreds of years. The Simen MN Park is vulnerable to expanding agricultural. We were not able to visit this area.

5. The possibility of a Zoo - Ethiopian National Park adoption relationship needs to be explored. As little as US $5-10,000 a year would double the operating budgets in some parks. It will be useful to bring some of the EWCO people to visit and train in other zoos.

European Breeding of Endangered Species Program

by Gunther Nogge

The EEP Conference 1990 took place 11-13 June 1990 at Cologne, Germany. Sixty-five delegates from 13 European countries attended. The main conference objective was to bring together all species coordinatiors in order to exchange thoughts and experiences and to discuss mutual problems including the use of computer software in breeding programs. Formal presentations were given on genetic and demographic aspects of breeding programs and general problems like founder representation, implementation of social structures in breeding programs, and genetic and biochemical techniques for assessing (sub)specific status of breeding program taxa.

To strengthen links between EEP and other regional coordinated breeding programs, reports were heard on the progress on the Joint Management of Species Group (JMSG) presented by Dr. Miranda Stevenson and on recent developments of the Species Survival Plans (SSP) as well as the Captive Breeding Specialist Group presented by Dr. Tom Foose.

Presently, there are EEPs for 58 species including mammals, birds, and reptiles. More than 190 institutions from 25 European countries take part in one or more EEPs. Some of the EEPs are based on very low numbers of founders, so that global management was recommended for several species such as the Black Gibbon, Moloch Gibbon, Pileated Gibbon, Douc Langur, Sloth Bear, Anoa, and Dama Gazelle. A number of new EEPs was proposed including Sumatran Tiger, Clouded Leopard, Grevy Zebra, Great Indian Rhinoceros, and Pygmy Hippopotomas.

The expanding number of EEPs makes an executive office for the EEP necessary. However, in contrast to other regional programs, such as SSP and JMSG, there is no organization behind EEP. The EEP is a voluntary form of collaboration between zoological gardens in Europe. For the purpose of an EEP executive office, the EEP coordination committee now believes a formal all-European zoo federation has to be established. The European Association of Zoological Gardens and Aquaria (ECAZA) may serve as a nucleus for this. Zoos in countries outside the European Community and zoo federations will also be approached. Another opportunity to discuss a more structured cooperation of zoos in Europe will be the annual conference of IUDZG held in August in Copenhagen which is attended by representatives from all European countries. The next EEP conference will be held in Budapest, 13-15 May 1991.

News from "Down Under"

AZDANZ Conference

At the 1990 Annual Conferences of the Association of Zoo Directors of Australia and New Zealand, major changes to regional organization were agreed upon. These recommendations are subject to approval by the Boards of AZDANZ zoos along with requests for funding support for the new bodies. These changes included:

1. Establishment of a Council of Governing Bodies of the Statutory Zoos of Australia and New Zealand with Boards to be represented as council meetings by the chief executive officers.
2. Formation of the Australasian Regional Association of Zoological Parks and Aquaria (ARAZPA) with full membership open to persons employed in zoological parks and aquaria who are interested in the professional management of zoos.
3. Formation of a Species Management Co-ordinating Council made up of three nominees of statutory zoos with one from New Zealand and three nominees of ARAZPA with one from New Zealand and one representing private zoos.

Species Management Workshops

A series of workshops was conducted this year to review Species Management Plans and the Species Managment Program. A workshop for Species Coordinators was held at Healesville Sanctuary in February, 1990. The first day was devoted to discussion of population genetics and the SMP/Studbook procedures for those who had not had any formal previous training. The second day was devoted to reviewing priorities for SMPs and to discussions on individual species, including proposals to develop management plans for three new species. Recommendations were developed for consideration by the AZDANZ Business Meeting.

The Regional Coordinator subsequently extended the review to all Catagory 2 taxa and circulated a comprehensive set of recommendatiuons. These were considered at a Species Management Workshop held in March. This meeting went even further by drastically pruning the list of species to be collectively managed.

The recommendations that resulted from these two workshops were adopted by the final AZDANZ Business Meeting held in Christchurch in March, 1990. These included reclassification of 46, Category 2 species to Category 3 because 1) their small populations are not viable on their own and are best managed as sub-populations of other regional or international programs and 2) the current registered populations are not viable or are of uncertain ancestry and require proposals for viable programs, including importation of new stock or capture from the wild of animals of known provenance, before reinstatement.

International Workshop Held for Zoo Associations

On 23-25 April 1990, 41 representatives from zoo associations, zoological gardens, and other interested organizations met for a workshop in Front Royal, Virginia, USA sponsored by the American Association of Zoological Parks and Aquariums (AAZPA). The purpose of the workshop was to more efficiently coordinate zoo international wildlife conservation efforts both in captivity and in the wild. There has been a global need to interface zoo conservation and education efforts between developing and industrial nations. The International Zoo Aiation Workshop was sponsored by the Pew Memorial Charitable Trust, the AAZPA, and the Smithsonian Institution. A series of resolutions were prepared and are listed below:

Preamble:

The rapid loss of natural environments is a global concern that threatens the quality of life in all its dimensions. National and international bodies are attempting to arrest the resulting decline of biological diversity through a variety of conservation initiatives.

Resolution 1: The Need for Collective Conservation Efforts Among Zoos Worldwide

The International Zoo Association Workshop recognizes the importance of zoo associations as coordinating bodies which can and should promote the conservation of biological diversity through education, captive propagation, and research. We urge that the coordination of these activities be achieved through national and regional zoo associations, and that formalized channels of communication be established.

Resolution II. Improvement of Communications with Zoos and Aquaria

It is recognized that regional information transfer points (or communication gateways) are necessary to collect and dissminate information, and to deal with linguistic differences. The establishment and success of these communication gateways must be determined on the basis of personal commitment and resources. Every effort must be made to insure that communication prevails in the most effective way.

Improvement can be immediately achieved by requesting international organizations, IUDZG, CBSG, IZE, and other relevant institutions, and regional and national associations to circulate newsletters and other relevant documentation to all national associations, and regional and international groups. The workshop therefore calls on all such associations to extend their circulation lists to include all regional and national associations.

It was noted within the context of improved communication, IUDZG's recent initiative in proving a liaison function for regional, national, and other organizations. The workshop calls on IUDZG to include within its development the support and evaluation of this communication system. (*Editor's Note:* The IUDZG has initiated its liason function with a letter to all known regional and national zoo associations encouraging them to exchange information. The IUDZG has also arranged for Fred Daman to personally contact these associations to monitor and facilitate an international communication network).

Resolution III. The Importance of Environmental Education

Public awareness is crucial to the successful implementation of programs for environmental conservation and conservation of endangered species. Zoological Gardens and Parks, by their very nature, are potentially the most effective and efficient means of reaching the greatest number of people of every age and economic level. Zoos in less affluent nations whose wildlife and habitats are often the most at risk do not have the resources to develop the educational facilities needed. Zoo associations, and international education associations such as the International Association of Zoo Educators (IZE) should encourage their members to share guidelines, materials, expertise and funds for promoting educational activities with zoos in developing countries.

Resolution IV. The Importance of Training

The workshop recognizes the need for training of zoo personnel at all levels, and recommends the involvement of

Workshop...

national, regional, and international zoo associations in the training of zoo personnel, specifically the identification of appropriate topics and individuals. Every effort should be made to train local zoo biologists as instructors, and to seek their assistance in the preparation and implementation of training programs.

Resolution V. The Need to Support Future Training Programs

The Workshop, recognizing the need and the costs for training and future meetings, requests the affluent nations in different regions such as the United States and Japan, consider hosting future events to facilitate progress in achieving these important objectives.

Resolution VI. Need for More Organized Captive Breeding Programs Worldwide.

The Workshop recognizes that many species need the assistance of captive propagation if they are to survive. Developing populations that insure long term survival for these species will require worldwide participation in organized scientific and coordinated captive breeding programs. Therefore, the Workshop encourages national and regional zoo associations to continue to develop these vital programs.

Resolution VII. The Need for Prioritization of Spatial Resources and Species

In view of the limited space for *ex situ* propagation of endangered species by the world zoo community, the pressure on the zoos of developing countries to accommodate animals of species that are not appropriate to their management strategy should be reduced. Zoo associations in these countries may suggest ways and means of distributing surplus animals in collaboration with their official wildlife establshment, animal welfare organizations, and conservation groups.

The Workshop further recognizes the importance of zoos in these countries to concentrate their efforts on species native to their region.

Resolution VIII. The Need for Increased National Recognition of International Conventions

This International Zoo Association Workshop recognizes the crucial importance of international conventions (such as C.I.T.E.S. and other important wildlife conventions) which support wildlife conservation. Therefore, we appeal to National governments to ratify conventions having an impact on the world's faunal, floral and ecological heritage. We further resolve that zoo associations insist on strict adherence to the spirit of C.I.T.E.S. in the non-signatory nations or where adequate wildlife legislation is lacking.

Resolution IX. The Need for Increased National Recognition of the Importance of Zoos and Aquaria

The Workshop agreed that national governments in regions of high biological diversity should recognise the potentially significant role their zoological gardens and aquariums can play in the global effort to conserve wildlife species through captive propagation and education. Therefore, the workshop urges national governments to make every effort to assist them to evolve standards required for successful propagation of endangered species, for conservation education, and for scientific research. This may include the allocation of resources designated specifically for biological conservation.

Summation:

This first workshop urges the zoological parks and aquaria of the world, and those governmental and non-governmental parties whose activities have a conservation impact, to utilize zoo and aquarium associations as an effective means of fulfilling the above resolutions. It is particularly important to recognize the immense education and conservation potential of the newly-emerging zoo associations in Africa, Latin America, Asia, and other regions of great conservation need. This workshop marks a new level of cooperation that can lead to a global zoo and aquarium community with fundamental contributions to environmental education and the conservation of endangered species.

Declaration I

Appreciating the excellent examples of AAZPA zoos with respect to the stimulation of cooperation between zoos in developing and developed countries, the Indonesian Zoological Parks Association and the Dutch Federation of Zoos - both present at the International Zoo Association Workshop in Front Royal - intend to start bilateral cooperation involving zoo education programs in the field of nature conservation.

Electronic "Tatoos" Offer Accurate, Versatile Animal Identification

Accurate, long-term animal identification is a continuing problem both for captive and free-ranging animals. Some of the more common marking methods include ear tags, tattoos, ear notches, neck or leg bands, etc. Each of these have unique advantages and disadvantages. The development of implantable, inductive transponder microchips promises to be a viable alternative to the previous marking methods.

"Transponders" are small (~1.0 cm) microchips embedded in a compound that does not cause tissue reaction. The transponder is placed under the skin or into muscle. Its small size makes this process relatively atraumatic for the animal. Each transponder contains an unique "electronic number." The transponder transmits this number when it receives a signal from an external device called a reader. There are over 34 billion possible number combinations available with current transponders. A disadvantage of their use is that the reader must be relatively close (< 10 cm) to the transponder in order to initiate and receive its signal. The advantage of this system is that marking animals is relatively fast and easy, permanent, and precise. Most animals can be implanted with transponders. They have been used on animals ranging in size and taxa from frogs to polar bears.

The most common system used is one manufactured by Destron/I.D.I. of Boulder, Colorado, USA. It is distributed worldwide by a several distributors. Most North American transponders operate at frequencies of 400 kHz, whereas European transponders operate at 125 kHz. Destron/I.D.I. is currently developing readers that will activate both frequencies. Several firms are developing competitive transponders, but are not yet available. Some of the major issues that need to be resolved concerning the widespread use of transponders are:

• Reliable product supply. Some smaller firms have gone out of business; some take orders, but are slow to fill them.

• Unique numbers. As long as only one firm produces transponders, this should not be a problem as the firm knows what numbers have already been assigned. Should manufacturers proliferate, duplicative numbers would be possible.

• Standardized implant sites. Since transponders lie under the skin and are invisible, implantation sites need to be standardized for each taxonomic group.

• Selection of marked animals. Certain animals, such as those managed by SSPs or equivalent plans, might need to be regulated by an internationally-accepted set of rules.

• Number registration. The International Species Information System (ISIS) currently provides space for transponder numbers in its record-keeping system (ARKS). Thought should be given to recording implantation site and transponder manufacturer as well.

• Medical concerns. Implantation of any device usually causes concern. However, in a two-year study of transponders, no adverse medical effects have been recorded. The Destron/I.D.I. transponder is also available with an anti-migration feature.

• Frequency discrepencies. As stated previously, North American and European transponder frequencies are different. An international frequency standard (probably 125-128 kHz) should be adopted.

At the 1989 annual meeting of the CBSG, a working group was formed to evaluate the use of transponders on an international basis. A survey for transponder users has been prepared by this group. If you are using transponders or have had experience with them, it would be greatly appreciated if you would contact this working group to obtain a copy of the survey. Please write to: Evan S. Blumer, VM.D, Fossil Rim Wildlife Center, PO Drawer 329, Glen Rose, TX 76043 USA.

Material for this report was originally prepared by and submitted to the CBSG by Dr. Evan Blumer, Fossil Rim Wildlife Center, Susan Elbin, New York Zoological Society, Bronx, NY, USA,P. Van den Sande, Royal Zoological Societ of Antwerp, and Lola D. Curtis, Audubon Park & Zoological Garden, New Orleans, LA, USA.

Transponder Manufacturers/Distributors

Destron/IDI, 2545 Central Ave., Boulder, CO 80301 USA, Telephone: 303-444-5306.

American Veterinary Identification Device, Inc., 3179 Hamner, Suite 5, Norco, CA 91760 USA, Telephone: 714-371-7505.

Biomedic Data System, Inc., 255West Spring Valley Ave., Maywood, NJ 07607 USA, Telephone: 201-587-8300.

InfoPet, 5137 N. Clareton, Suite 110, Agoura Hills, CA 91301 USA, Telephone: 800-463-6738.

Bio Sonics, 3670 Stone Way North, Seattle, WA 98103 USA, Telephone: 206-634-0123.

Texas Instruments, multiple addresses, Telephone: 508-699-1639.

Conservation Education News

Education Congress Held in Venezuela

The first Pan American Congress on Conservation of Wildlife Through Education was held on 23-27 January 1990 in Caracas, Venezuela. The five-day congress included workshops, paper presentations, poster sessions, discussion groups, and receptions. Participants contributed creative ideas and methodologies toward improving wildlife conservation education throughout the Americas. Sponsors included the New York Zoological Society, Wildlife Conservation International, the Bronx Zoo Education Department, and the International Association of Zoo Educators (IZE). Venezuelan sponsors included the Ministry of Environment, PROFAUNA, ODEPRI, Environmental Education Divisions, the National Parks Institute, and MARAVEN. For more information contact the Bronx Zoo Education Department.

Zoo Education Congress to be Held in Belgium

An international zoo education congress is scheduled to be held in Antwerp, Belgium on 9-14 September 1990. This biennial International Association of Zoo Educator's congress provides the opportunity for zoo educators from around the world to come together and share ideas and programs focusing on zoo education. For more information, contact: Magda DeGroeve, Head of Educational Service, Royal Zoological Society of Antwerp, Koningin Astridplein 26, B-2018 Antwerp, Belgium, Telephone: 00-32-3 231.16.40.

Training Materials Requested

In collaboration with the Education Department at the Minnesota Zoological Garden, the CBSG is requesting copies of any wildlife conservation training materials that you are using in your institution. The goal is to establish a small resource set of quality materials currently in existence. Training materials do not have to be large or sophisticated to be valuable. These materials will provide valuable references for requests by developing zoos and wildlife parks for assistance or networks. If you don't have materials together, but do offer zoo management training programs, please send the course outline or other relevant descriptive materials. We will put together a resource list and publish it in a future CBSG News for your information. An example of such materials that we have received was the Golden Lion Tamarin Conservation Program (a slide presentation) sent us by Jon Ballou. Please send training materials to: Steve Hage, CBSG, 12101 Johnny Cake Ridge Road, Apple Valley, MN USA 55124.

Zoo Biology Course Given in Indonesia

The sixth Zoo Biology Training Course was given at the Kebun Binatang Ragunan, Jakarta from 11 May to 3 June 1990. This course was hosted by the Indonesian Zoo Association (PKBSI) and was funded by the Sumatran Rhino Trust. The class consisted of 24 mid-level zoo professionals from 14 zoos in Java and Sumatra. The course instructors were Chris Wemmer, Charles Pickett (National Zoo, Washington, DC USA), Tom Foose (CBSG), J. Andrew Teare (Milwaukee County Zoo, Wisconsin USA), James Murphy (Dallas Zoo, Texas USA), and F. William Zeigler (Miami Metrozoo, Florida USA).

The course curriculum consisted of daily lectures, demonstrations, class problem-solving exercises, and periodic quizzes. Lectures were delivered in English and translated into Indonesian. Each training course generated a list of prime candidates for regional studbooks of endemic species, as well as potential studbook keepers. The black palm cockatoo, Indonesian hornbills, maleo, babirusa, the anoas, the Moloch gibbon of Java, and the Komodo monitor were identified as taxa of high priority. The long-term goal of the program is to encourage the development and implementation of cooperative breeding programs within the country or region.

Two class projects focused on daily encounters between male and female Sumatran rhinos and arboreal behavior of young monitors. A cooperative agreement for Komodo monitor conservation between the Komodo Monitor Consortium and the Indonesian Department of Wildlife and Nature Conservation (PHPA) was also drafted, reviewed, and signed.

The Zoo Biology Training Program was organized by the National Zoological Park and has been presented in Thailand, Malaysia, Singapore, Brazil, Guatemala, and China. Future courses are scheduled for Mexico (Guadalajara Zoo) in October, 1990 and Morocco (Rabat Zoo) in November-December, 1990. In 1991, courses are tentatively scheduled for northern South America (Columbia or Venezuela), Argentina, China, and Brazil. Requests for information about the training program should be sent to Dr. Chris Wemmer, Conservation and Research Center, National Zoolgical Park, Front Royal, VA 22630 USA.

Scientific Summit Held on Red-cockaded Woodpecker

In March 1990, 24 experts on the red-cockaded woodpecker (RCW) convened in Live Oak, Florida USA to address issues crucial to the recovery of this species. The summit was conducted to examine the scientific basis of management decisions affecting the RCW. The intent of the summit was to develop consensus about the biological needs of the RCW and make recommendations for managing its recovery.

Numerous areas of consensus emerged concerning the biological characteristics and needs of the RCW. In addition, several management initiatives were recommended to enhance the condition of the RCW. Both short-term and long-term needs of the species were discussed, as well as the varying characteristics of different forest types in different regions of the RCW's range. The primary management initiatives recommended were:

1. Begin managing the RCW on an areawide basis rather than the current system of managing areas contiguous to colony sites.
2. Incorporate the changes to the Recovery Plan recommended by the summit, then provide sufficient resources to implement the plan in full.
3. Develop an emergency action plan to stop the decline of small and sensitive colonies or populations.
4. Form a broad-based Technical Advisory Committee to assist government agencies in developing management guidelines for the RCW.

The implementation of these recommendations will likely require new or re-allocated resources and managment guidelines. Nonetheless, summit participants strongly expressed the need for new initiatives to reverse existing trends in RCW population dynamics under most conditions.

Inventory of *Partula* Snails in Captivity

An inventory of *Partula* snails held in captivity has been prepared by Simon Tong, Jersey Wildlife Preservation Trust. The count represents their status as of January, 1990 and covers all collections currently known to hold *Partula*. A total of 4,077 snails are recorded of which 3,864 are from Moorea, 140 from Tahiti, 63 from Huahine, and 10 from Saipan. There has been an overall 3.1 % decrease in the population compared to the 1989 captive population. Based on current population sizes and percentage change from last year, Tonge categorized the species of *Partula* in captivity according to the prospects of their long-term survival.

SPECIES	TOTAL POP	STATUS*
Partula suturalis	1565	B
P. taeniata	1608	A
P. mooreana	514	B
P. tohiveana	145	B
P. mirabilis	31	C
P. aurantia	1	D
P. rosea	44	C
P. varia	19	C
P. gibba	10	D
P. otaheitana	24	C
P. affinis	3	D
P. nodosa	11	D
P. clara	2	D
P. hyalina	100	C

*Prospects for long-term survival coded as:
A = Large population; good percent increase; long-term prospects good
B = Medium to large population; small percent increase or decrease; long-term prospects moderate
C = Small population; medium to large percent increases; long-term prospects poor
D = Tiny population; large percent increase or decrease; probability of extinction very high

Crocodilian Population Summary Report Developed

A crocodilian population summary report prepared by Bill Ziegler (Miami Metrozoo, Florida USA) was recently received by the CBSG office. As of 23 April 1990, the population of captive crocodilians was as follows:

Species	Male:Female:Unk	B.P.*	HI/BP*	B.I.*	Eggs
Alligator mississippiensis	337.188.341	Yes	19	5	199
A. sinensis	5.20.49	Yes	2	1	0
Caiman caiman apaporiensis	0.0.0	No	0	0	0
C.c. fuscus	3.4.4	Yes	1	0	0
C.c. crocodilus	9.6.28	Yes	3	0	0
C.c. vacare	12.11.55	Yes	4	1	0
C. iatirostris	3.1.21	Yes	1	1	0
C. spp.	2.0.5	?	0	0	0
Crocodylus acutus	14.20.7	Yes	8	2	47
C. cataphractus	12.4.10	Yes	2	1	21
C. intermedius	1.1.3	Yes	0	0	0
C. johnsoni	2.2.1	Yes	1	1	13
C. moreletii	5.23.175	Yes	5	4	39
C. niloticus	8.14.169	Yes	4	2	162
C.n. mindorensis	1.0.1	?	0	0	0
C.n. novaeguineae	4.1.3	Yes	1	0	0
C. palustris	6.7.8	Yes	2	0	0
C. porosus	6.7.0	Yes	2	1	0
C. rhombifer	12.23.8	Yes	4	2	0
C. siamensis	8.10.48	Yes	5	3	25
Gavialis gangeticus	6.12.0	Yes	4	0	0
Melanosuchus niger	2.4.0	Yes	1	0	0
Osteolaemus t. osborni	0.0.0	No	0	0	0
O. t. tetraspis	27.25.12	Yes	9	4	31
Paleosuchus palpeorosus	27.15.43	Yes	9	5	38
P. trigonatus	14.14.7	Yes	3	0	0
Tomistoma schlegelii	11.17.3	Yes	6	2	6

*B.P. = Breeding Potential; HI/BP = Housing Institutions having Breeding Potential; B.I. = Breeding Institutions (institutions actually breeding specimens)

Publications of Interest...

Marine Mammal Research and Conservation in Sri Lanka 1985-1986. Marine Mammal Technical Report Number 1. (1989). S. Leatherwood and R.R. Reeves.

Proceedings of the Second International Symposium on Giant Panda (1990). Tokyo Zoological Park Society, Ueno Zoo, Ueno Park, Taito-ku, Tokyo 110 Japan..

Consortium of Aquariums, Universities and Zoos 1989-90 Directory. Write: Donna FitzRoy Hardy, CAUZ Network Coordinator, Dept. Psychology, California State University, 18111 Nordhoff St., Northridge, CA, USA 91330

Monotreme and Marsupial Breeding Programs in Australian Zoos (1990). G. G. George. Australian Journal of Zoology 37: 181-205.

Conservation and Captive Management of Storks (1989). M.C. Coulter, S. Balzano, R. E. Johnson, C. E. King, P. W. Shannon (eds.) Write: M. C. Coulter, University of Georgia, Savannah River Ecology Laboratory, Drawer E, Aiken, GA, USA 29802.

Specialist Group on Storks, Ibises and Spoonbills Newsletter. Write: M. C. Coulter, University of Georgia, Savannah River Ecology Laboratory, Drawer E, Aiken, GA, USA 29802 or Koen Brouwer, National Foundation for Research in Zoological Gardens, P.O. Box 20164, 1000 HD Amsterdam, The Netherlands.

Activity Report of the Captive Breeding Specialist Group

March - July, 1990

Ulysses S. Seal
Thomas F. Foose

A report for September 1989 - February 1990 was distributed as a midyear report to the AAZPA and to CBSG members in the first issue of the CBSG Newsletter. Dr. Tom Foose joined CBSG as the executive officer on 1 May 1990. This was made possible by the contributions and pledges, totaling about $200,000 for the first year of operation, from zoos and aquariums, zoo associations, and individuals from all over the world. Tom will take an even more active role in the several international rhino consortia. He will also be working on the development of active collaboration between the regional conservation coordinators and management plans. We have been conducting numerous PVA and other workshops. The process is underway for a more formal development of the CBSG Captive Breeding Surveys and Action Plan Recommendations for groups of vertebrates. The development of a prototype biological plan for a Global Heritage Species candidate, the Sumatran Rhinoceros, is underway. The material that follows is intended to give a general overview. More details on all subjects will be available in the annual CBSG meeting book and in individual reports.

CBSG NEWSLETTER (Kreeger, Mikolai, Seal).

Distribution of the first issue began on 20 March 1990. About 1,600 copies have been mailed. Distribution included CBSG members, SSC Specialist Group Chairpersons, and about 1,000 zoos and aquariums. The intention is to develop a mailing list of all public zoos and aquariums worldwide. The newsletter will also be available in an electronic format. We have received over 150 written responses to the Newsletter from non-CBSG members - all positive. The next issue will be produced in July 1990 and the third will be this fall after the meetings.

POPULATION VIABILITY ASSESSMENTS (Seal, Mikolai, Foose).

Workshops have been conducted for the Florida Panther (2), Puerto Rican Parrot (2), Javan Rhinoceros (a second scheduled for September), Bali Starling, Key Deer, *Leontonithecus* (4 species), Przewalski's horse, three Ethiopian species (drafts for mountain nyala, Simien jackel, Swayne's hartebeest), and aridland antelopes (addax, scimitar-horned oryx, white oryx). Documents have been produced or are being completed for each of these workshops. Others are planned during the next six months for the Mexican wolf, African wild dogs, and Asian rhinos. More details are given under comments on the individual species or trips.

GLOBAL HERITAGE SPECIES PROJECT (Seal, Foose).

Seal, Foose, and Flesness met with George Rabb, Gaig Pugh, and Pam Parker on 30 April 1990. We discussed the Global Heritage Species proposal as well as the comments we had previously made on the program. There was general agreement that the analysis was a reasonable summary of the status of the program and of the immediate needs to move it forward. Specific recommendations were to use several of the upcoming PVAs as a basis for developing several prototype species programs for review at Copenhagen (CBSG meeting) and at the SSC Steering Committee meeting in Australia. The upcoming PVAs include *Leontopithecus* in Brazil, the Javan rhino (and Sumatran rhino, in part) in Bogor in September 1990, and the African wild dogs, Asian elephant, and Indian rhinos in early 1991. We are also in the process of developing similar material for tigers. A partial plan has been prepared for addax. The choices to be made are intended to cover several continents and have a relatively high profile. A marketing person is to attend several of the PVAs so that the person will have a strong personal experience of the details, complexities and depth of the problems, need and process.

VIETNAM

Kouprey project. Several visits and field surveys were mad. Construction of holding and management facilities in Vietnam are progressing. Field surveys have provided additional evidence for the presence of kouprey. Detailed reports can be found in the this newsletter and in the upcoming CBSG annual meeting book.

MADAGASCAR

Several visits with reports found elsewhere in this newsletter. Several projects are being supported in Madagascar including two facilities. Additional founder stock for several species have been secured. These actions were recommended in several of the workshop reports.

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PHILIPPINES

Several visits relative to the Tamaraw and several other species were made and reports will be included in the CBSG annual meeting book.

NIAMEY, NIGER (Seal).

A full report on the addax and scimitar-horned oryx reintroduction project meeting will be made in the CBSG annual meeting book.

FLORIDA USA (Seal; March 1).

Attended a public hearing on the PVA recommendations to bring some Florida panthers into captivity.

WASHINGTON, D.C. USA (Seal; March 16-18).

AAZPA Planning Committee and SSC Steering Committee. This was the first of three meetings of the 'Nuclear Planning Committee' to prepare a strategic plan for the AAZPA. They were led by a professional facilitator.

BOGOR, INDONESIA (Seal; March 19-25).

Bali Starling PVA workshop. The Bali Mynah PVA workshop was held in a forestry service building adjoining the Botanical Gardens. CBSG prepared a briefing document for the workshop (25 copies, one on file but no more available for distribution). The meeting was opened with an address by the Director-General of PHPA. Opening remarks by Effendi (Director of Wildlife), Ashare (President of the Indonesia Zoo Association), and Grimmett (ICBP). There were about 25 Indonesians in attendance throughout the workshop including people from PHPA, University faculty, several of the zoos, and Bali Barat National Park. They all actively participated. Effendi and Ashare attended and participated in most of the meetings. Minutes with attendance list are on file in the CBSG office and will be in the PVA report on the Bali Mynah which will be distributed in April after a final review by the participants. A copy of the recommendations from the meeting is available and will be included in CBSG annual meeting book. These were the product of separate working groups and multiple cycles of review by the entire group. I feel that the workshop went very well and the analyses provide some clarification of the problems and strongly pointed to needed areas of work.

Problem: The Curik Bali (Jarak Bali, Bali mynah or Bali starling) (*Leucopsar rothschildi*) is endangered. About 24-31 birds were counted in the last census of the only wild population in Bali Barat National Park. Continuing decline of the population with losses of birds to poachers and natural causes, the primary restriction of the population to a single reserve, and chance environmental events put the population at critical risk of immediate demographic extinction. The small population will rapidly lose genetic variation even if sustained at current levels. These conditions favor early extinction in the wild. The species meets all of the criteria to be designated 'Critically Endangered' which is a new category proposed for use by SSC/IUCN.

Points of Agreement: The recovery of the Curik Bali (Bali starling) to levels that ensures its long term survival as a wild species is a high conservation priority in Indonesia and is of the highest priority for the province of Bali. The responsibility for saving this species and its natural environment rests with the authorities and people of Indonesia. However, the survival of the Bali starling is of importance and interest to the whole world and hence the international community should also contribute to the conservation of the Bali starling and its habitat including Bali Barat National Park.

NEW ZEALAND (Seal; March 28-April 4).

AZDANZ meetings. Attended the zoo directors meeting in Christchurch where I gave the opening address (copy on file). I also gave six media interviews (radio, papers, and TV). I met with David Givens (botanist, SSC regional representative) and I purchased a copy of his book on threatened plants of New Zealand. He feels the need for application of small population biology concepts to plants and is interested in pursuing the matter. He has the final draft of a large book on the plants which includes much consideration of population biology. After the meetings, I went to Wellington on 29 March for a tour of the zoo (Kerry Muller, director) and attended several individual meetings. I met with a representative of the New Zealand government concerning a project in Ujong Kulon. The New Zealand government, through its Ministry of External Relations and Trade, Development and Assistance Division, has an agreement with Indonesia to provide on-site experts and assistance totaling NZ $400,000 towards the development of Ujong Kulon as a National Park. They have completed a feasibility study. They also have a Land Resources Mapping Project underway on which they will provide more details. Then attended a meeting of Australasian zoo keepers in Auckland. Richard Bloch gave the banquet talk for the zookeepers meeting which was well done and supportive of zoos in relation to WWF as a vehicle for public eduction and information. The meetings were held to establish new organizations for institutions and zoo professionals in Australia and New Zealand. I made two presentations (opening paper and a longer one on

population biology and small populations) and had three media interviews. Three new zoo organizations were formed during these meetings. One was for the Conservation Coordinator (CC) functions. This was established as a trust with a six-member board (Species Management Board) with three from the institutional organization and three from zoo professionals organizations. Funding is to come from the institutions. Graeme George is to serve as the CC. The zoo professionals organization will include people from the private sector as well as the public zoos. Laura Mumaw was elected the first president of the organization. This process occupied much of the time and attention of the meetings in each of the cities.

ZIMBABWE (Foose; 1-8 April).

International Southern Black Rhino Trust. The delegation (Foose representing both AAZPA and CBSG) presented the proposal for the International Southern Black Trust to the Government of Zimbabwe. The plan will integrate both *ex situ* and *in situ* efforts to provide helicopters with 7-10 years operating and maintenance support and to reinforce the global captive population with 40 more rhinos from Zimbabwe. Twenty will go to the AAZPA SSP program and 20 to the Australian SMP (Species Management Plan) program. A change of Ministers has delayed approval of the proposal by Zimbabwe but a decision is expected soon.

KNOXVILLE, TENNESSEE USA (Seal; April 9-11).

Red Wolf Recovery Team meeting. This reintroduction program will be a model program for camivores. There has been successful reproduction in the wild with long-term survival. The program has engendered great public interest and substantial commitments for large new protected areas (>100,000 hectares in North Carolina and national parks in other states) with the result that this species may well have habitat sufficient for 1,000 animals by the year 2000. These accomplishments were considered inconceivable only three years ago.

DENVER, COLORADO USA (Seal; April 16-17).

Seal attended the AAZPA Second Nuclear Planning Committee meeting where I was assigned to chair the subcommittee (with Read, Doherty, Krantz) to prepare the conservation goals draft.

NAIROBI, KENYA (Seal; April 20-28).

Conservation and Sustainable Utilization of Wildlife Symposium. Seal made a presentation on CBSG and its activities. Seal also met with many of the wildlife and conservation biologists active in African country programs.

FRONT ROYAL USA (Foose; April 22-26).

An international meeting of zoo association representatives was attended by representatives of 40 existing or forming national and international zoo associations. Foose again represented both AAZPA (presentation on cooperative breeding programs) and CBSG (presentation about the Group's activities). Foose also arranged a meeting between Mike Hutchins and Bert DeBoer to discuss collaboration among the AAZPA SSP, EEP, and CBSG on production of a basic Species Coordinator Manual that could be used as a standard textbook worldwide. CBSG will try to continue to facilitate and assist meetings among regional conservation coordinators/directors.

KEY WEST, FLORIDA USA (Seal, Mikolai; May 1-4).

Key deer PVA. The Key Deer (*Odocoileus virginanus clavium*) is endangered and numbers about 300 animals in the wild. Continuing losses of young and adult animals to road mortality and natural causes, restriction of the population to Big Pine Key, and continuing habitat fragmentation on Big Pine Key put the population at increasing risk of losing genetic variation and at vulnerability to demographic extinction. These conditions favor at least continued loss of genetic diversity and, at worst, extinction in the wild from random environmental events.

INDONESIA (Foose; May 10 - June 5).

Foose participated in Smithsonian training course as instructor and worked with Mohd. Khan (Chairman of ASRSG) on the agenda and with Sukianto (PHPA) on planning for the Javan Rhino meeting to be held September 1990. Foose also arranged for Sukianto to visit Minnesota in August 1990 as part of our work on developing a prototype of the biological components for the Global Heritage Species project using the Sumatran Rhinoceros. Foose collaborated with Dr. Zainal of Malacca Zoo on International Studbook for Sumatran Rhino. Foose and Zainal are joint Studbook Keepers. The first formal edition will be issued by the end of the year.

LEIPZIG, EAST GERMANY (Seal, Mikolai; May 18-23).

Seal and Mikolai attended the Przewalski horse meeting.

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SAN DIEGO, CALIFORNIA USA (Seal; May 31 - June 1).
Seal attended the Sea Otter Recovery Team meeting.

JACKSONVILLE, FLORIDA USA (Seal; June 2-3).
Maned wolf SSP meeting. This species remains in serious trouble in captivity with unresolved reproductive problems in North America and elsewhere.

ETHIOPIA (Seal; June 7 - 16)
A detailed report of this trip can be found elsewhere in this newsletter. Seal and others traveled extensively to parts of the Bale Mountain National Park and saw many mountain nyala, simien fox, other mammals, wattled crane and more than 70 other bird species. All participants agreed that the trip was worthwhile and valuable for the understanding of the activities of the Hillmans and the EWCO in wildlife conservation and management in Ethiopia. Indeed, all considered the trip a unique experience which could not be replaced by verbal descriptions or video documentaries. All are hopeful that working relationships can be developed with EWCO. A specific wish list of items for field use by the Ethiopian biologists was developed. A detailed PVA report will be available from the CBSG office.
It will be useful to bring several of the second-level EWCO people to the USA to visit some zoos. Their views on zoos and captive breeding are as abstract and concerned as mine were about Ethiopia before this visit. The Ethiopian wildlife people also have concerns about losing control of the animals and losing the attraction of their endemics as possible tourist resources.

COLOGNE, WEST GERMANY (Foose; June 10-13).
EEP Annual Conference. Foose delivered update on the AAZPA SSP and provided an overview of the CBSG mission and activities. The EEP has now adopted the same rhino logo as the SSP. Hopefully, this will evolve further into the international logo for organized captive propagation programs. The EEP programs are progressing at a rapid rate. There are currently 58 programs with another five proposed for immediate development. Recommendations from the meeting included establishment of an executive office for the EEP and formation of an all-European zoo federation as an umbrella organization for the EEP.

LONDON, UNITED KINGDOM (Foose; June 14).
Developmental meeting on data bases and structures for Captive Breeding Surveys and Action Plans.

NORTH CAROLINA, USA (Foose; July 11-14).
AAZPA SSP Chimpanzee Masterplan Workshop. A major objective was to demonstrate to the new AAZPA Conservation Center staff the workshop process that has been used to formulate AAZPA SSP masterplans.

TULSA, OKLAHOMA USA (Seal; June 17-18).
AAZPA Planning Committee. Seal presented the material prepared by his working group on Conservation Plans (Seal, Jenkins, Hutchins with assistance from Foose and Flesness and reviewed by Read, Doherty, & Krantz as members of the AAZPA Planning Committee) . There was considerable discussion and suggested revisions which were noted. Basically, the outline was accepted with some additions. The implications are that action plans will need to be prepared for each on the strategic objectives suggested.

BELO HORIZONTE, BRAZIL (Seal; June 18-26).
The PVA workshop on the *Leontopithecus* species was conducted 20-22 June 1990. Considerable additional work was done on 23 June including completion of subgroup reports and translations into Portuguese. The workshop was a complete success with the development and integration of much information on the species and their available wild habitat that led to unexpected and dismaying results. For two of the species there is not sufficient habitat available even if all patches in private ownership are included as potential protectable habitat. There were more than 45 people in attendance including the top people from IBAMA and most of the Brazilian field workers. The meeting preparations by Ilmar Santos were outstanding and he treated all problems as solvable. As a result, we have excellent range maps of real and hopeful distribution and habitat. A report was made of a new lion tamarin discovered on an offshore island. It has been designated as a new species (*L. caissara*) about which very little is known. It is at one end of what was black-headed lion tamarin range and so additional work will be needed. It currently is being treated as a full species. We received many positive (and no negative) comments on the workshop and strong invitations to return and conduct

Activity Report...

several more while training several Brazilians in the process. Seal also visited the CPRJ (Primate Conservation and Breeding Center) of Coimbra-Filho, outside of Rio de Janero. The facilities are excellent, record keeping is good, there is a complete collection of material from all animals that have died. He also has breeding groups of the three lion tamarin species. There is a need to establish additional colonies of the black-headed lion tamarin.

SAN JUAN, PUERTO RICO (Seal; July 16-19).

Seal attended a meeting concerning the impact of disease risks on movement of Puerto Rican Parrots to a mainland facility as recommended by the PVA. This recommendation served as a focus for objections raised to such a move because of disease concerns.

BRONX ZOO, NEW YORK USA (Seal; July 30-31).

Seal attended a meeting of the CBSG Avian Group

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 meeting to assess the risk of disease in the transfer of Puerto Rican parrots to the U.S. , July 17, San Juan, Puerto Rico.
2. Conduct CBSG Annual Meeting and attend IUDZG meeting, August 24-28, Copenhagen, Denmark.
3. Javan rhino conservation planning meeting, September 4-8, Bogor, Indonesia.
4. Present paper on population viability analysis at conference on Genetics and Wildlife Conservation, September 10-12, 1990, Bologna, Italy.
5. Attend SSP meetings at AAZPA annual conference, September 22-27, Indianapolis, Indiana, USA.
6. JAGZA meeting, October 4-5, Japan.
7. International aquarium meeting, October 11-15, London, United Kingdom.
8. Mexico Wolf PVA, October 22-25, Arizona, USA.
9. SSC/IUCN General Assembly, November 16 - December 9, Perth, Australia.
10. African Wild Dog PVA, January, 1991, Tanzania.
11. Asian Rhinoceros PVA Workshop, January, 1991, Nepal.

Meetings...

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.

International Association of Zoo Educator's Congress, 9-14 September, 1990, Antwerp, Belgium. Contact: Magda DeGroeve, Head of Educational Service, Royal Zoological Society of Antwerp, Koningin Astridplein 26, B-2018 Antwerp, Belgium, Telephone: 00-32-3 231.16.40.

Genetics and Wildlife Conservation, September 10-12, 1990, Bologna, Italy. Contact: Dr. Ettore Randi, Instituto 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.

Agenda for the 1990 CBSG Annual Meeting

Where: Copenhagen, Denmark
When: 25-26 August 1990

FRIDAY, 24 August:

Evening: Informal reception.

SATURDAY, 25 August:

0900 - 1100 AM:

- Introductions, CBSG Books Agenda / Executive Summary / Working Groups (Seal)
- San Antonio Meeting Minutes (Seal)
- Budget and Funding (Roberts)
- Studbooks Review (Olney)
- CITES, IUCN General Assembly - Perth (Rabb, Edwards, Stuart)
- IUCN Red Data Categories (Mace, Stuart, Flesness)
- WCMC and SSC Information Systems (Flesness)
- Herpetology Group (McLain)
- Avian Group (Wylie, Olney)
- Aquarium Group (Kaufman, Andrews)
- Regional Conservation Coordinators

1100 - 1200:

- Working Group Sessions.

1200 - 1300:

- Lunch

1300 - 1430; Reconvene general meeting:

- Regional Coordinators and Coordination (Foose, DeBoer, Hutchins, Princee, George, Bennet, Walker)
- African Rhinos (Knowles, Maruska, Miller, Foose)
- Asian Rhinoceroses (Thomas, Foose, Garland)
- Bali Mynah / Indonesia (Grimmett, Bruning)
- CBSG Action Plans (Foose, Gipps, Andrews)
- Dealer Movement of Animals (Roibedlo, Hutchins, Knowles, Flesness)
- Education and Training (Hage, Wemmer)
- Ethiopia Fauna Group (Dixon, Dolan)
- Genome Preservation
- Giant Panda (Karsten)
- Global Heritage Species - Prototype and Draft
- Indonesia Fauna Group (de Jose, Garland, DeBoer, Hutchins, Foose)
- Invertebrate Group (Andrews)
- Kouprey / Vietnam (Simmons, Stuart)
- Madagascar Fauna Group (Anderson, Mallinson, McLain)
- Marine Mammal Group
- CBSG Newsletter (Mikolai)
- Niger / Oryx & Addax (Dixon, Tuttle, Knowles)
- Primates (Stevenson)
- Philippines Fauna Group (Mace, Jones)
- Przewalski Horse (Knowles, Zimmermann, Ryder)
- Reptiles & Amphibians (McLain)
- Tamarins / Brazil (Mallinson, Ballou)
- Transponders (Blumer, van den Sande)
- Viet Nam Fauna Group

1430 - 1530:

- Working Group Sessions

1530 - 1730; Reconvene General Meeting:

- Working Group Reports
- Population Viability Asessment Workshops

1730:

- Adjourn; evening meetings as convened by working groups

SUNDAY, 17 September:

0900 - 1100; Reconvene general meeting;

- ISIS/ARKS/MEDARKS/SPARKS (Flesness)
- Regional Species Management and Studbook Programs
  - Australasia (George)
  - China
  - EEP (Nogge)
  - INDIA (Patnaik)
  - INDONESIA (Ashari)
  - JAPAN (Nakagawa)
  - UK (Bennett)
  - USA (Hutchins)
  - SE ASIA (Harrison)
- Working group and action plan recommendations

1100 - 1200:

- Working Group Sessions

1200 - 1300: Lunch

1300 - 1430: Reconvene general meeting.

- Final Working Group Reports

1430: Summary and Adjourn