

CBSG News

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*Volume 2
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Preview of Annual CBSG Meeting

The annual meeting in Singapore promises a full three days of discussions and working groups (please see agenda on page 4). If you have items to suggest for the meeting, please write us at the CBSG office. Items of general interest on the agenda include the problem of disease transmission between wild and captive populations, whether with translocations, releases, reintroductions, or acquisition of new founders. There is a need for continuing collection of information from captive collections and on endemic diseases in countries of origin and around captive collections. It will be necessary to develop a process for preparation of protocols and for enhancing diagnostic capabilities. The powerful molecular genetic techniques for DNA sequence analysis have brought new insight into the questions of speciation and the depth of genetic separation of geographic populations. This has required the re-examination of nearly all of our vertebrate conservation programs where subspecies have been named. In some cases subspecies are being elevated to species distinctions and in others the data have supported reduction or elimination of the subspecies. The shortage of laboratory resources to do the needed studies has delayed establishment of some programs and initially has led to the conservative approach of accepting the current taxonomy.

Reproductive biotechnology has generated great professional and public interest for its potential to enhance reproduction and to preserve genetic diversity through cryopreservation of semen, eggs, and embryos. Developments in reproductive biology make it practical for breeding programs for some felid, wild cattle, cervid, and primate species. We are preparing a draft document covering many of the aspects of genome preservation which will be distributed at the Singapore meeting both for discussion and for developing programs for individual species on a regional and global basis. We are testing its application to tigers.

The process of reviewing vertebrate taxa and applying the Mace-Lande criteria for assessment of degree of threat (summarized in Vol. 1 No. 3 issue of CBSG News) and assignment of conservation priorities for involvement and actions by the captive propagation community is progressing rapidly. This is being done in close collaboration and joint meetings with members of the appropriate taxon Specialist Groups of the Species Survival Commission. A full report will be made at the meeting for the Primates, Felidae, Cervidae, and several avian groups. There are plans to test the applicability of these criteria to groups of invertebrate and plant taxa in the near future. More information on this process will be included in the next edition of this Newsletter.

I would like your assistance in gathering information about the field conservation projects supported by the captive breeding community. We frequently encounter questions about the direct contributions of zoos, aquariums, and other captive breeding facilities to conservation of wild habitat and species in the wild. It is my impression from discussions on every continent that there are at least several hundred projects and protected areas receiving such support. We have included a short information request in this Newsletter asking for information on projects supported by your institution and leads to other such projects. The information will be summarized. We would also welcome news reports, like the one from Ron Tilson of the Minnesota Zoo in this issue, from your institution for inclusion in the Newsletter.

Support of CBSG News will help us continue to expand its distribution. We would appreciate a contribution of \$25 (U.S.) per year to help meet the costs of publication. Simply send your contribution to the CBSG office marked, "Newsletter." Thank you.



*Newsletter of the
Captive Breeding
Specialist Group,
Species Survival Commission,
World Conservation Union*

Ulysses S. Seal, CBSG Chairman

Captive Breeding Specialist Group Conservation Advisory Council

Conservators

- American Association of Zoological Parks and Aquariums
- Chicago Zoological Society
- Cleveland Zoo
- Columbus Zoological Gardens
- Dallas Zoological Society
- Denver Zoological Foundation
- Fossil Rim Wildlife Center
- Friends of Zoo Atlanta
- Greater Los Angeles Zoo Association
- International Union of Directors of Zoological Gardens
- Jacksonville Zoological Park
- Lube Foundation
- Minnesota Zoological Garden
- New York Zoological Society
- Omaha's Henry Doorly Zoo
- White Oak Plantation
- Zoological Society of Cincinnati
- Zoological Society of San Diego
- Cologne Zoological Garden
- Copenhagen Zoo
- Dutch Federation of Zoological Gardens
- Givskud Zoo
- Howlett & Port Lympne Foundation
- Japanese Association of Zoological Parks and Aquariums
- Jersey Wildlife Preservation Trust
- The Living Desert
- Marwell Zoological Park
- National Federation of Great Britain and Ireland Zoos
- National Zoological Park, Smithsonian Institution
- North of England Zoo
- Odense Zoo
- Paignton Zoo
- Paradsie Park
- Pencsycnor Wildlife Park
- Philadelphia Zoological Society
- Riverbanks Zoological Park
- Royal Zoological Society of South Australia
- Royal Zoological Society of Antwerp
- Royal Zoological Society of Scotland
- San Francisco Zoological Gardens
- Thrigby Hall Wildlife Gardens
- Twycross Zoo
- Union of German Zoo Directors
- Urban Council Hong Kong
- Washington Park Zoo
- Wildlife Preservation Trust International
- Wilhema Zoo
- World Parrot Trust
- Yong-in-Farmland
- Zoological Society of London
- Zoological Society of Wales

Guardians

- Detroit Zoological Park
- King's Island Wild Animal Habitat
- North Carolina Zoological Park
- Saint Louis Zoo
- Toledo Zoological Society
- Zoological Society of New South Wales

Protectors

- Aalborg Zoo
- Asmode, Jean Francois
- Audubon Zoo
- Banham Zoo
- Caldwell Zoo
- Calgary Zoological Society

CBSG News

The CBSG news is published by the Captive Breeding Specialist Group, Species Survival Commission, World Conservation Union. 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 of \$25 (U.S.) to help defray the cost of publication would be most appreciated. Please send contributions or news items to:

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CBSG Mission Statement

The mission of the Captive Breeding Specialist Group is the conservation or establishment of viable populations of threatened species.

The goals of the CBSG are:



1. Organize a global network of people and resources
2. Collect analyze and distribute information
3. Develop global captive breeding programs
4. Integrate management programs for captive and wild populations



CBSG Captive Action Plans

By Tom Foose, CBSG Executive Officer

The ultimate goal of a Captive Action Plan is to contribute to conservation strategies for taxa based on viable populations, i.e. sufficiently large and well distributed to survive stochastic risks as well as deterministic threats. Such strategies will require that the taxa be managed as metapopulations. The metapopulation will frequently include captive components. The purpose of captive propagation is to reinforce, not replace, wild populations. A Captive Action Plan provides a strategic framework for effective and efficient application and allocation of captive resources to conservation of the broad group of taxa of concern, i.e. an order, family, etc. Toward this end, a Captive Action Plan provides a set of recommendations about:

1. What taxa are in need of intensive management attention, i.e.:
 - a. Captive propagation programs;
 - b. Intensive (captive-type) management in the wild; (The captive community can assist with transfer of technology and limited adopt-a-sanctuary like support) — Natural sanctuaries as megazoo;
 - c. Population Viability Assessment and Conservation Action Plan (PVA/CAP) Workshops.

d. *In situ* and *ex situ* research where the captive community can reasonably assist: e.g., taxonomic clarification, some survey support.

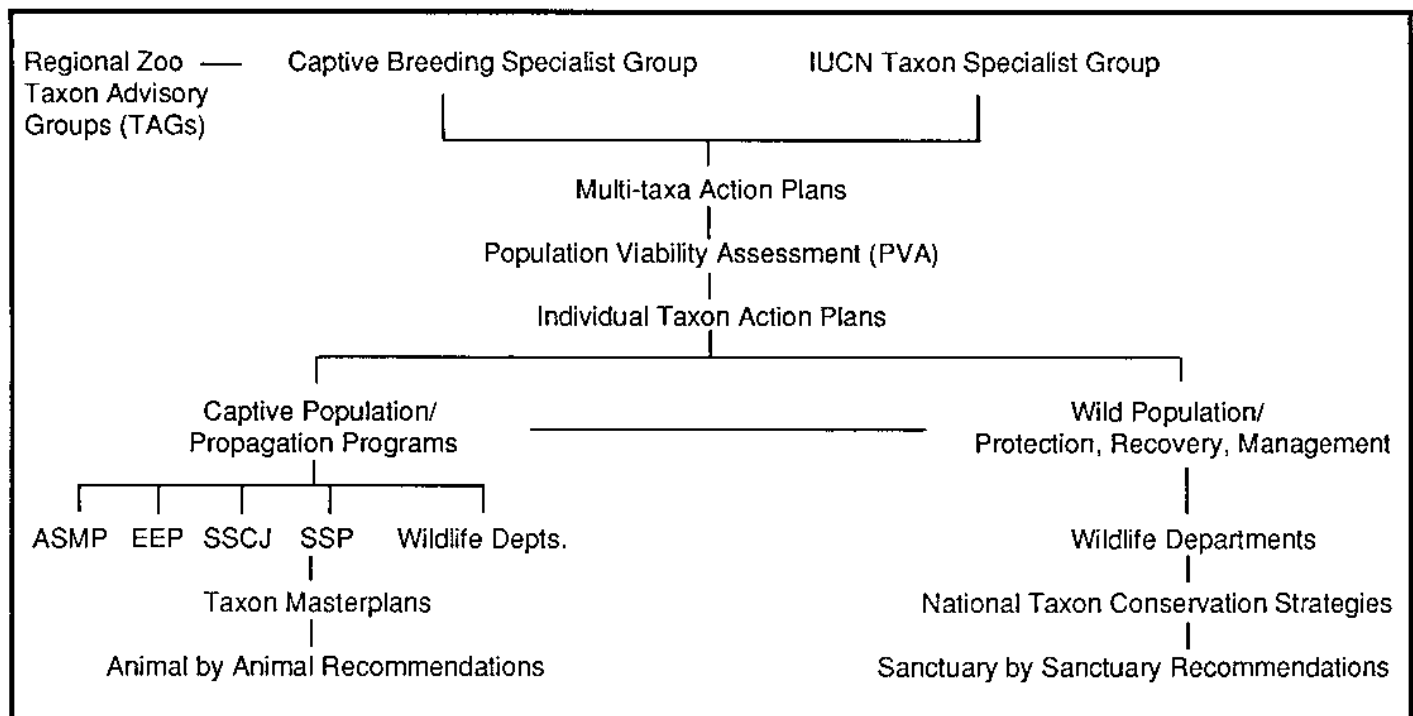
2. How taxa already in captivity are optimally managed relative to conservation needs of the broad group of taxa under consideration. There is need to develop priorities because space and resources in captivity are limited. Developing priorities requires assessment of captive habitat. Captive habitat assessment needs to occur on a regional basis.

A preliminary chart of evolving relationships among various levels and kinds of action plans, PVA's, and captive and wild programs is provided in Figure 1. Noteworthy is the parallelism between animal-by-animal recommendations in zoos and sanctuary-by-sanctuary recommendations in wild.

Action Plan Process

1. Review all taxa in the broad group taxon-by-taxon to determine if they need intensive management attention based on their status in the wild and their taxonomic uniqueness.
2. Try to be as quantitative or numerate as possible:
 - a. Action plans (captive and wild) ultimately must establish numerical objectives for population sizes and distribution, if are to be viable.
 - b. Numbers provide for more objectivity, less ambiguity, more comparability, better communication and, hence, cooperation.
 - c. It is often very difficult to be numerate because so little

Figure 1. Evolving relationships among action plans and animal management programs.



quantitative data on population sizes and distribution exists. Estimates of wild populations can be first attempt, order-of-magnitude "guesstimates" that are hypotheses for falsification. These guesstimates should not be used as an authoritative esti-

mate for any other purpose than intended by this process. To date research has not been very effective in compiling this kind of information.

3. Use the recently proposed Mace-Lande Red Data Categoriza-

Figure 2. Mace-Lande criteria for threatened taxa categories.

	<u>Level of Threat:</u>		
	<u>Critical</u>	<u>Endangered</u>	<u>Vulnerable</u>
Probability of Extinction is (%)	50	20	10
within () years or	5	10	100
within () generations	2	10	
	<u>Or any 2 of the below criteria</u>	<u>Or any 2 of the below or any 1 under Critical</u>	<u>Or any 2 of the below or any 1 under Endangered</u>
Effective Population Size (Ne) less than ():	50	500	2,000
Actual Population Size (N)	250	2,500	10,000
Population Fragmented:			
() Subpopulations with	≤ 2	≤ 5	≤ 5
Ne > () and	25	100	500
N > ()	125	500	2,500
<u>or</u>			
() Subpopulations with		≤ 2	≤ 2
Ne > () and		250	1,000
N > ()		1,250	5,000
Population Decline:			
> (%) decline	20	5	1
over past () years	2	5	10
<u>or</u>			
Population Decline > (%)	50	10	Equivalent
for last () generations	1	2	to above
Catastrophic Population Declines of:			
> (%)	50	20	10
over () years or	5-10	5-10	5-10
over () generations	2-4	2-4	
<u>or</u>			
> (%)		50	20
over () years or		10-20	10-20
over () generations		5-10	
<u>or</u>			
> (%)			50
over () years			50

Or Observed, inferred, or projected habitat alteration, commercial exploitation, or ecological interactions with introduced species resulting in above population characteristics.

tion (see Mace, G. M. and R. Lande. 1991. Assessing extinction threats: towards a re-evaluation of IUCN threatened species categories. Conservation Biology, in press) as a major consideration in assessing threat in the wild (Figures 2 & 3). This categorization provides quantitative criteria in terms of population sizes, distribution, trends, stochasticity.

4. For taxa that emerge as a category of concern (i.e., Critical, Endangered, Vulnerable, "High Anxiety"), recommend what kind of intensive management action is indicated (i.e., Captive Program, PVA/CAP, *In Situ* Management, Research). "High Anxiety" are taxa whose population characteristics do not yet technically place them in one of the three categories of concern but for which there is information available to expect that they will move into such a category in the near future (1-10 years).

5. Where captive programs are indicated, establish captive programs and target populations to reflect status and prospects in the wild. There should be multiple genetic and demographic objectives depending on the status and prospects of the taxon in the wild and, hence, different captive population targets: some taxa need large populations for a long time, others need small incipient nuclei or reduced gene pools that can be expanded later if needed. The Ballou "Capacity Software" can be used to establish rough targets now.

As an example, the approximate scheme applied for formulation of the Primate Captive Action Plan has been:

<u>Category</u>	<u>Level of Captive Program</u>
Critical	Population sufficient to preserve 90% genetic diversity for 100 years developed immediately.
Endangered	Population sufficient to preserve 90% genetic diversity for 100 years developed gradually.
Vulnerable	A captive nucleus (50-100 individuals) to always represent 98% of the wild gene pool. This type of program will require periodic, but in most cases modest, immigration/importation of individuals from the wild population to maintain this high level of genetic diversity in such a limited captive population.
High Anxiety	Normally, the same as for vulnerable
Other	A captive nucleus (25-100) for taxa not of conservation concern but present in captivity or otherwise of interest; the captive nucleus should be managed as well as possible.

6. Also review all taxa currently in captivity on a taxon-by-taxon basis to determine if the population should be expanded, reduced, or stabilized. It may not be possible to be precise at this time, but a direction can be recommended. Captive Action Plans need to be dynamic documents. Any and all taxa that are

maintained in captivity should be managed as populations. Therefore, they should have studbooks and coordinators.

7. For taxa not currently in captivity but of concern, recommend that new captive programs be initiated only after a PVA/CAP (Population Viability Assessment/Conservation Action Plan Action Plan) Workshop has been conducted.

8. For the short term, splitting subspecies is better than lumping. Subspecies can be merged or eliminated later if necessary for viability.

9. Initially, base the Captive Action Plan only on biological factors; adjustments for other realities and constraints, including political, will be purview of implementation.

10. Tabulate the percent of all genera and species that are represented in the various recommendations to insure there is a satisfactory representation of the broad group of taxa being considered.

11. Comment on at least two other issues:
- How to contend with surplus in the captive population;
 - How to obtain additional founders needed for the captive population.

Population Size

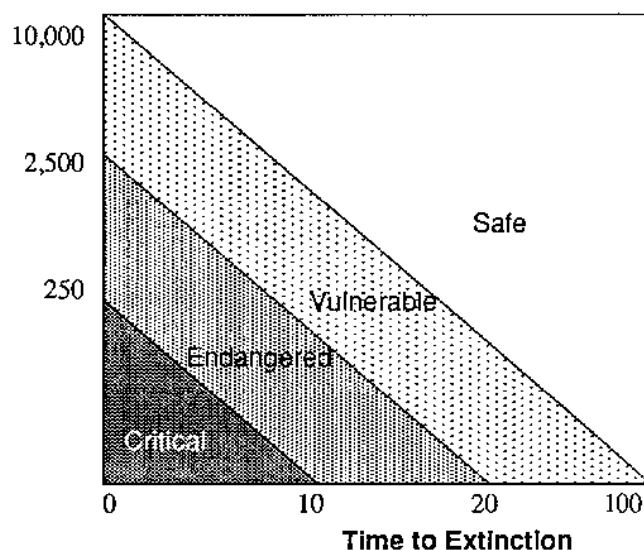


Figure 3. Time to extinction for various population sizes utilizing the Mace-Lande criteria for priority categories.

12. Since there is a need for strategic program development and resource allocation on a global basis, encourage formation of more regional multi-taxa coordination groups, like the Taxon Advisory Groups (TAG) in North America, on other continents.

13. Eventually, recommend how responsibility for these captive programs might optimally be distributed over the various organized regions of the global captive community.

14. Consider how genome banks and reproductive technology might be incorporated into the conservation strategy for various taxa.





Primate Global Captive Action Plan Under Development

Representatives of the IUCN/SSC Primate Specialist Group (PSG) and the Captive Breeding Specialist Group (CBSG) conducted a work session on development of a Primate Global Captive Action at the CBSG Office 13-15 March 1991. Participating from the PSG were Chair Russ Mittermeier, PSG Asian Action Plan author Ardeth Eudey, PSG African Action Plan author

John Oates, Tom Struhsaker, and Bill

Konstant. Representing the captive community were Miranda Stevenson (CBSG Primate Action Plan Group leader), David Anderson (Co-chair of the Madagascar Faunal Group), Anne Baker (Chair of the AAZPA Taxon Advisory Group (TAG) for New World Primates), Nate Flesness, Fred Koontz (Co-Chair of the AAZPA TAG for Old World Monkeys), Jean-Marc Lernoould (Mulhouse), Ingrid Porton (Chair of the AAZPA Prosimian TAG), Frank Princee (EEP Executive Office), Dave Ruhter (Co-Chair of the AAZPA TAG for Old World Monkeys), Christian Schmidt (Zurich), Ron Tilson (chair, AAZPA Gibbon TAG), Wendy Turner (Co-Chair of the AAZPA TAG for Old World Monkeys), Jerry Binczik, Jan Eldridge, Tom Foose, and Ulie Seal.

The Global Captive Action Plan for Primates is being developed as a prototype for others that are planned for all vertebrate groups. The purpose of is to provide a strategic framework for effective and efficient application and allocation of captive resources to conservation of the broad group of taxa of concern, i.e. an order, family, etc. It is intended that all these Captive Action Plans will be joint endeavors of CBSG and the other pertinent SSC Specialist Groups. The process and product are still evolving.

During the session, all recognized primate taxa were evaluated in terms of their status and prospects in the wild as well as their taxonomic uniqueness. There was an attempt to be as quantitative as possible. Toward this end, the working group attempted to apply the recent proposals by Georgina Mace and Russ Lande for redefinition of the IUCN Red Data Categories.

Based on these criteria, primate taxa were categorized as critical, endangered, vulnerable, of high anxiety, or not of conservation concern. For taxa that were placed in a category of concern, recommendations were formulated on what kind of intensive management action would contribute to conservation of the taxon, i.e. captive programs, population viability assessment/captive action plan (PVA/CAP) workshops, more intensive *in situ* management, or research in which the captive

community might reasonably assist.

There was also an assessment of every primate taxon in captivity to determine how the captive population might be optimally managed relative to conservation needs of primates. Basically, there was an attempt to recommend if the current captive population should increased, decreased, or stabilized.

Among other major recommendations of the work session was to encourage formation of "taxon advisory groups" - as are now being organized in North America - in all regions of the zoo world for more strategic coordination of captive programs and resources .

The first edition of the Global Primate Action Plan will be published before the CBSG Annual Meeting in Singapore. Numerous other Global Captive Action Plans are under development and similar work sessions are intended. A preliminary overview and protocol for Global Captive Action Plan formulation appears on pages 5-7 of this CBSG News.

Rebel Fighting Endangers Mountain Gorillas

Rebel and military fighting in Rwanda in east central Africa has extended into the Parc National des Volcans, home of the endangered mountain gorilla. Since many of Rwanda's gorillas also enter Uganda's Gorilla Game Reserve, the war in Rwanda is adversely affecting gorilla conservation efforts in Uganda.

International conservation organizations appeal to all parties to end the violence for the benefit of all peoples living in the region. World Wide Fund for Nature (WWF), and noted zoologist George Schaller, join The Digit Fund and Morris Animal Foundation, both of Englewood, Colorado, in condemning the fighting in and around the park.

"Military activity not only hurts the economies of the two nations, but also affects the environment. Conservation and tourism efforts are negatively affected, including the protection, veterinary care, ongoing studies and gorilla visitations," states Ruth Keesling, President of the Digit Fund.

"Recent hostilities in and around the Parc des Volcans are of special concern to us since the Volcano Veterinary Center is located at Kinigi, which has been in the hands of the rebels," says Walter Emery, Chairman of the Trustees for the Morris Animal Foundation.

Across the border in Uganda, Dr. Thomas Butynski of the World Wide Fund for Nature (WWF) and Mr. Klaus Jurgen-Sucker of Deutscher Tierschutzbund e. V. are directing conservation work in the Gorilla Game Reserve. They report, "Since Rwanda and Uganda share a common population of mountain

gorillas, any activities which harm gorillas or which reduce the gorilla conservation effort in Rwanda, such as the present war, obviously threaten the survival of gorillas in the Gorilla Game Reserve. Many Ugandans are now concerned over the survival of their precious gorillas."

"Fighting definitely affects the gorillas in the Virunga Mountains. Mortar fire in the Parc disrupts normal gorilla activity causing the families to scatter and split in terror, leaving females and infants on their own and vulnerable," states Dr. A. H. Harcourt, Chairman of the Digit Fund's Scientific Advisory Board and a former researcher at Karisoke Research Center.

Dr. James Foster, founder of the Volcano Veterinary Center and member of the IUCN Veterinary Committee, reports, "Knowledge gained from studies of gorillas in captivity indicates that environmental stress such as loud noises from rifles, mortar fire and human disruptions actually lower the immune response, making gorillas more susceptible to disease. The existing population (at this time only 310) is scarcely adequate to sustain long-term survival of the mountain gorilla species. Any losses to this population jeopardizes their long-term survival."

The conservation, research and preservation efforts in Rwanda of The Digit Fund and Morris Animal Foundation are seriously affected by the recent fighting. The Digit Fund supports the Karisoke Research Center, which was founded by anthropologist Dr. Dian Fossey in 1967.

The research station is located in the Parc des Volcans in the Virunga Mountains in the northwest corner of Rwanda. Rebels entered the park and took over park headquarters. The Morris Animal Foundation supports the Volcano Veterinary Center, located in Kinigi, Rwanda, at the base of the Virungas.



Schaller, and wildlife artist, David Shepherd, were at Karisoke this week with film crews from National Geographic Society and IMAX theaters. They were evacuated along with American staff members to the capital city, Kigali, and others relocated to the western part of Rwanda. Schaller has agreed to assist the karisoke research staff during this emergency.

The world's only other population of mountain gorillas (about 320 animals) occurs 30 kilometers north of the Parc National des Volcans in Uganda.

Dr. Butynski states that "the hostilities in Rwanda are unlikely to seriously affect the gorillas of Uganda's Impenetrable Forest."

All those interested in preserving the mountain gorilla appeal to both sides to stop fighting in gorilla territory.

Ownership of Golden Lion Tamarins Transferred to Brazil

Ownership of the zoo population of endangered golden lion tamarin monkeys (GLTs) outside of Brazil was turned over to the government of Brazil by seven organizations currently owning the primates. The transfer of title was arranged by the Golden Lion Tamarin Management Committee, the group that oversees the propagation and conservation of the species for the 116 institutions around the world that house and work with the species. The Committee was established in 1981 by scientists at zoos and primate breeding centers in an effort to prevent the disappearance of the species. The Committee evolved out of the efforts of zoos to save the tamarins that began in the late 1960's when GLTs were declining in number and very near extinction. Through the efforts of the Committee and conservationists in Brazil, the tamarins' situation was turned around and today the world population of the species stands at nearly 1000 animals. In February 1991, Devra Kleiman, chairperson of the Golden Lion Tamarin Management Committee, acting on behalf of the zoos and other organizations that work to save GLTs, formally handed over the documents of tamarin ownership to Celso Schenkel, Director of Ecosystems, Brazilian Institute for the Environment and Renewable Natural Resources.

Approximately 500 golden lion tamarins were involved in the transfer of ownership and places virtually the world's entire population of the species in the hands of the only country where the GLT is indigenous.

John Wortman, General Curator of the Denver Zoological Garden, put the event in perspective, "Transferring the ownership of the international zoo community's total population of an endangered species to the government of the country of origin is a benchmark for zoos. This event is indicative of the arrival of a new spirit of cooperation and conservation that clearly puts the welfare of animals ahead of parochial institutional interests."

In July 1989, the 15-member Committee voted to explore the possibility of transferring ownership of the zoo GLT population to Brazil. The Committee recommended the transfer because of "the strong spirit of cooperation within the international zoo community for the conservation of the golden lion tamarin, and the critical importance of Brazil's involvement in conservation efforts for their native species." Also, the Committee recognized that "ownership issues no longer play a major role in the management of endangered species in captivity. This has been the case for the management of the golden lion tamarin where the Cooperative Research and Management Agreement among the holders of golden lion tamarins forbids their use in any commercial transaction."

Since 1984, GLTs from zoos have been involved in a successful and ongoing program of reintroduction to protected areas in Brazil. In a number of respects, both the zoo animals and

Tamarins...

the animals living in nature have been managed for the species' benefit as a single population. Only two percent of the tamarins' original habitat in the unique Atlantic coastal rain forest of Brazil remains. The return of a viable population of golden lion tamarins to parts of this ecosystem has been welcomed by the Brazilian people and has created popular support for protecting rain forest habitat, not only for these primates, but for all the species that can live only in the forest.

The transfer of ownership of the tamarin population will not result in any immediate change in the management of the species and GLTs will remain as popular residents at many of the world's zoos. It is also expected that the program of cooperation that has led to the tamarins' recovery—scientific management, exchanges of animals among zoos, and reintroductions to nature—will continue with the guidance of the Golden Lion Tamarin Management Committee.

Report on 1990 Kouprey Survey

A survey to locate kouprey, *Bos sauveli*, and other wild cattle was conducted by Roger Cox (Kouprey Conservation Trust) and Ha Dinh Duc (Centre for Natural Resources Management and Environmental Studies, Hanoi) in the Yok Don Nature Reserve, western Dak Lak province, south Vietnam in October 1990. Originally, a 21-day field trip was planned, but this ended after only six days following an encounter with armed guerillas in which three members of the team received gunshot wounds. All individuals survived despite the severity of some wounds.

The survey consisted of both interviewing local people who have claimed to have seen, or to have knowledge of, wild cattle species and to conduct field surveys on elephant back in the Yok Don Nature Reserve.

Only two persons in Buon Ma Thuot reported seeing kouprey from 1980-1990. There was some confusion by local people

between correct identification of banteng and gaur.

During the field survey, no wild cattle were seen in Yok Don, but fresh (less than one day old) tracks of small herds of gaur and banteng were located on four occasions. On the second day of the field survey, five gaur were tracked for two hours, but they were



very wary and difficult to approach. On October 10, the survey team was attacked by four unidentified men armed with automatic assault rifles. Ha Dinh Duc was shot in the upper chest and chin; an army captain (Phan Thanh Son) was shot in the left elbow and back with the bullet exiting out of the abdomen; and the elephant driver was wounded in the left forearm.

Despite the premature termination of this survey, it was recommended that the search for Kouprey not be abandoned. It was strongly recommended, however, that some sort of aircraft be employed to extend the search range as well as to increase the efficiency of the survey. It was also suggested that a leaflet be prepared describing the cattle species and be distributed to villages and individuals likely to have contact with wild cattle.

Przewalski's Horse Global Management Plan

The Przewalski's Horse Global Management Plan Working Group met at the Cologne Zoo on 24-25 February 1991. The Global Management Plan Working Group (GMPWG) was established at the Fifth International Symposium on the Preservation of the Przewalski's Horse in Leipzig in May of 1990. The Steering Committee of the GMPWG consists of CBSG Vice Chair John Knowles (Marwell Zoo), Oliver Ryder (Zoological Society of San Diego), and Waltraut Zimmermann (Cologne Zoo). The agenda for the Cologne meeting included transfer of Przewalski's horses from Askania Nova and other institutions to the Biriuchy Peninsula in the Sea of Azov and the reintroduction of the species into Mongolia. Vasilii Klimov and Yuri Musienko from Askania Nova reported on the Biriuchy Peninsula project and requested participation from the GMPWG in the selection of horses to be transferred to the Biriuchy Peninsula. A project to undertake additional genetic studies involving all the horses at Askania Nova, including those to be transferred to Biriuchy, has advanced to the final planning stages with the intention of undertaking the work in June and October of this year.

There are two projects to reintroduce the Przewalski's horse into the Mongolian People's Republic. One site is at Hustain nuuru, approximately 60 km from the capitol, Ulan Bator. The other is in the B section of the Great Gobi National Park. The project at Hustain nuuru currently involves the Foundation Reserves Przewalski's Horse (FRPH) based in the Netherlands, the Academy of Sciences of the Soviet Union, and the State Committee for the Reintroduction of the Takhi (as the Przewalski's horse is called in Mongolia). This State Committee is also involved in the project in the Great Gobi B Park that was visited by a delegation of the GMPWG in October of 1990.

The GMPWG discussed a strategic plan for the cooperation in reintroduction projects in Mongolia including such aspects as disease screening, health management, candidate selection, age and sex structure of released groups, and facilities requirements.

Noting that the GMPWG is the only entity involved in reintroduction efforts for the Przewalski's horse that manages the entire surviving gene pool of the species, the group recognized that a long term plan for the re-establishment of the gene pool in free-ranging populations should be developed. This would best be achieved in Mongolia through a formal agreement between the GMPWG and the Mongolian government and its appropriate ministries and departments acting through the Mongolian Commission for the reintroduction of the Takhi. In order to explore the undertaking of such a long-range program a delegation representing the GMPWG consisting of Waltraut Zimmermann and Prof. Dr. M. Stubbe (University of Halle) will visit Mongolia in April. The GMPWG is committed to providing, at no cost, all the necessary horses required for re-establishing the species gene pool in self-sustaining, free-ranging, populations within the historic range of the species. To facilitate this end the GMPWG intends, with the aid of appropriate scientists, to commence studies in cooperation with Mongolian scientists on which to base reintroduction and release programs during 1991.

Funds are actively being pursued for moving the various aspects of this large project forward. Following the return of Dr. Zimmermann and Prof. Stubbe from Mongolia, specific plans will be formulated for the timing of the first animal transfers.

U.S. and U.S.S.R. to Join in Search for Siberian Tigers

The U.S. and U.S.S.R. have agreed on a joint study of Siberian tigers (*Panthera tigris altaica*) in the wild. The study will combine the animal-tracking expertise of the Soviets with the telemetry and computer technology of the Americans. The study is planned to last up to three years and document the animals' range, diet, habitat preferences, and reproduction. The two American leaders of the research team are Howard B. Quigley (Frostburg State University, Maryland) and Maurice G. Hornocker (Wildlife Research Institute, Moscow, Idaho). Their Soviet counterparts are Dimitri Pikunov, Yuri G. Puzachenko, and Vadim Skulkin of the Soviet Academy of Sciences. The U.S. Fish & Wildlife Service and the National Geographic Society are supporting the project.



The study will take place in the 1,329-square-mile Shikote-Alin Biosphere Reserve which is north of Vladivostok and home to approximately 20 tigers. The animals will be snared, tranquilized, samples taken, and equipped with a radio telemetry collar.

Tiger Update

Breeding programs exist for Siberian (*Panthera tigris altaica*) and Sumatran (*P. t. sumatrae*) tigers, and additional programs for Bengal (*P. t. tigris*) and Indochinese (*P. t. corbetti*) tigers are planned. The ultimate goal is to allocate the 500-525 "manageable" tiger spaces in AAZPA/SSP institutions so that 175 are occupied by Siberian, 175 by Sumatran, 75-80 by Bengal, and 75-80 by Indochinese tigers. As of 31 July 1990, there were 175 (92.83) Siberian tigers distributed among 56 North American zoos. Seventy-one (40.31) of these animals have been designated surplus to the breeding program. Eight breedings are scheduled for the 1990/91 breeding season. On 28 March 1991, there were 47 (21.26) Sumatran tigers distributed among 13 zoos. There are not as yet any surplus animals in this population. Nine breedings are scheduled for 1990/91. As of 24 September 1990, one wild-caught male and two captive-bred female Indochinese tigers have been imported from Malaysia for use as founders in a breeding program. With the exception of two white animals, no purebred Bengal tigers as yet exist in North America.

Efforts are underway to import new captive-bred and/or wild-caught founders for all four programs. Two unrelated wild-caught Siberian tigers may be imported from the Moscow Zoo to Canada as early as May 1991. Plans are for one to remain in Canada (Calgary Zoo) and one to be transferred to the United States (Minnesota Zoo).

Additional plans to develop an *in situ* captive breeding program for Sumatran tigers in Indonesia are being considered by appropriate authorities. The Tiger SSP is also working on developing an *in situ* regional program for Bengal tigers with the Indian Zoo Association.

Collaborative research by the National, Minnesota, and Omaha zoos to develop *in vitro* fertilization and embryo transfer techniques in tigers resulted in the live birth of three cubs in April 1990. This continuing project directly addresses the Tiger SSP's goal of interactive management between captive and wild tiger populations.

Tiger Beat, the newsletter of the Tiger SSP, now reaches over 250 zoos and wildlife managers in 17 countries. A comprehensive bibliography for tigers has been compiled and will be released soon as a special issue of *Tiger Beat*.

Contributions have been received from 16 participating zoos to support the next international tiger symposium and geographic information system (GIS) development - necessary steps in the creation of a global tiger masterplan. Work on the GIS should begin in earnest this year.

Initial Assessment of the Conservation Status of the Amphibians of Madagascar

by Simon Tonge, Jersey Wildlife Preservation Trust

The following analysis was based on the methodology developed by the IUCN Primate Specialist Group to rate reptile and amphibian species as candidates for SSP status. Species are ranked according to their degree of taxonomic uniqueness and the degree of threat to them. Information about the frogs of Madagascar is rather scanty. The taxonomic status of several forms is still in doubt; information about the life histories and ecology of many species has only recently begun to be acquired. Data about their population trends are largely unavailable.

Species were assigned scores on the criteria outlined below. The scores for taxonomic status and conservation status were then added together to give the species an overall rating.

Taxonomic uniqueness:

1. A member of a genus containing seven or more species.
2. A member of a genus containing fewer than seven species.
3. Monotypic genus.

Degree of threat:

1. Species not known to be under threat.
2. Rare or at risk. Populations exist at low density or in a restricted geographical area.
3. Vulnerable. Species with limited distribution and/or ecological tolerance possibly threatened by habitat alteration.
4. Endangered. Species in danger of extinction within the foreseeable future.

Overall, 168 species were rated. Because of space limitations, only the most critical will be discussed here. Persons interested in the complete list can contact Simon Tonge, Jersey Wildlife Preservation Trust, Les Augres Manor, Trinity, Jersey, Channel Islands.

Four species, three of them monotypic genera, emerged from the analysis with priority scores of 5:

Cophyla phyllodactylla (Monotypic genus): This small frog (30 mm) is known from the Montagne d'Ambre (N) and from Nosy Be and its associated islet Nosy Komba. The first and last of these localities are protected areas so the species is unlikely to be threatened with extinction. It has never been kept in captivity.

Madecassophryne truebae (Monotypic genus): A small species (up to 23 mm) that is known only from the Anosyennes chain in the South East of Madagascar. If it occurs in the reserve at Andohahela near Fort Dauphin, it is unlikely to be threatened. Otherwise, it may be in need of conservation action. It has never been kept in captivity.

Paracophyla tuberculata (Monotypic genus): This tiny (17 mm) frog lives in the leaf axils of *Pandanus* and *Crinum*. It has been found only at Perinet in the eastern forest. Within this area, it is probably protected and it may well occur at other sites. It has never been kept in captivity.



Dyscophus antongili: This beautiful frog is well known to the captive breeding community. It qualifies as a Priority 5 species because it is restricted to lowland rain forest habitats around Antongil Bay in the North East of Madagascar. This habitat is severely threatened. It is possible that the species may be able to adapt to secondary habitats (e.g., rice paddies) in which case it may be less threatened than it currently appears. It has bred in captivity on a number of occasions.

Twenty-two species had a priority rating of 4. Of these, three species are members of monotypic genera and are abundant, *Scaphiophryne*, *Rhombophryne*, and *Aglyptodactylus*. Species of particular note include four species of *Mantella*. Two of them, *viridis* and *crocea*, are recently described and two others, *aurantiaca* and *laevigata*, have very restricted ranges. *M. aurantiaca*, on account of its high profile and volume in the pet trade, would perhaps be worthy of further consideration for an SSP. *M. laevigata* appears to have the smallest known range of any Malagasy frog but it is well protected in the Nosy Mangabe nature reserve.

Priority 4 species apparently not found in any protected area include *Stumpffia madaqascariensis*, *Pseudohemisus pustulosum*, *Scaphiophryne marmorata*, and *Laurentomantis ventrimaculata*.

Preliminary Results of Bat Survey

Until recently, there has been little attention focused on captive breeding programs for endangered Chiropterans. There has been an increased interest in this order as more information becomes available about the vital function of bats in pollination and seed dispersal of many ecologically and economically valuable plant species. In addition, there is a greater appreciation of the role bats play as the major predator of night-flying insects. Because many wild bat populations are in peril, it is important that the potential for developing captive breeding programs be evaluated. A survey was conducted to: (1) determine the amount of space available for breeding and exhibiting bats in North American zoological institutions, (2) quantify the number and variety of bats held in these facilities and (3) assess the interest of zoos in participating in cooperative breeding programs.

Questionnaires were sent to 127 AAZPA-accredited zoos and responses have been received from 123 (97%). Preliminary analyses of the data show that relatively few species of bats are being held in these institutions, but there is much promise of additional exhibits in the near future. Of the 123 respondents, 68 (55%) do not maintain bats at present while 55 (45%) exhibit one

or more species. There are 15 bat species currently held in North American zoos. There are 19 species held if the Lube Foundation, an AAZPA-related organization dedicated primarily to the conservation of endangered bats, is included in the data. Of these 15 species, only the Rodrigues fruit bat (*Pteropus rodricensis*), is listed as endangered by the U.S. Fish and Wildlife Service, CITES, or the IUCN's Red List of Threatened Animals. However, nearly all of the zoos exhibiting bats expressed a willingness to participate in breeding programs for endangered species.

Many curators and directors expressed a need for better husbandry techniques. Development of management protocols will most likely be a primary objective of the AAZPA Chiroptera Advisory Group. In addition, the lack of availability of uncommon species was indicated as being problematic. This could be alleviated by organization and cooperative breeding programs orchestrated by the regional taxon advisory groups and the CBSG Captive Action Plan Working Group. More analyses are being done and the completed survey results will be presented at the AAZPA Annual Conference in San Diego and the CBSG annual meeting in Singapore.

This report was submitted by Nina Fascione, American Bat Conservation Society, AAZPA Chiroptera Advisory Group, CBSG Chiroptera Action Plan Working Group.



American Association of Avian Veterinarians Donates Funds for Conservation

In 1990, the Association of Avian Veterinarians (AAV) voted to donate 1% of its gross annual income to a worthy conservation project. The funds are to be awarded for direct field studies, preferably involving avian fauna. The recipient study should be directly related to 1) critical habitat land acquisition, 2) critical habitat land management, or 3) development of management plans for critical habitat.

The 1990 Conservation Project chosen and approved by the AAV Board at their annual meeting in September, is jointly sponsored by the Nature Conservancy and BIOMA, a Venezuelan conservation organization. The study involves Cienaga de los Olivitos, an area designated as a wildlife refuge by the Venezuelan government. Despite this protection, there is still a threat of development by a commercial salt production plant.

A preliminary survey has shown that 43% of the birds inhabiting this area are migratory species. The AAV grant will be

used for field work to further assess the species diversity and use of the area. The target date for completion of the study is 18 months after initiation. Expected results will provide the Ministry of the Environment and Natural Resources with the information needed to develop an appropriate management plan to protect the refuge. BIOMA has successfully used this approach to protect another area in Venezuela. For further information contact: AAV Conservation Committee, Glen H. Olsen, D.V.M., Patuxent Wildlife Research Center, U. S. Fish & Wildlife Service, Laurel, MD 20708 USA. Telephone: (301) 498-0420.

Training in Captive Breeding of Endangered Species

The Wildlife Preservation Trust, located in Jersey, Channel Islands, British Isles, is an international non-profit organization dedicated to the support of captive breeding of endangered species. It supports projects in captive breeding, field surveys, reintroduction, research and education. The zoological facility for the Trust's work is located on the island of Jersey. This facility is both a zoo and breeding/research facility for endangered species, and has a collection of over 100 species of birds, mammals and reptiles. The International Training Center is an educational facility for training in captive breeding and species conservation; it combines dormitory, classroom and research facilities for students, staff and visiting scientists.

A training program consisting of ten or sixteen weeks of intensive work in all divisions of the zoo is being offered. Trainees work in close contact with zoo staff in all phases of animal keeping and breeding. Each trainee spends two weeks in each section and a final two weeks on an independent project. Daily duties are supplemented with weekly seminars on a variety of topics. The program is flexible in terms of length and focus.

The program is designed for individuals with previous practical experience with animals: zoo and animal center staff and postgraduates in conservation-related fields.

Applications may be obtained from the address below. Selection is made in August of each year. Applications should be submitted by 1 July 1991 for training beginning in 1992. Starting date is by arrangement.

Tuition is £100 (approximately \$198). Full room and board costs are £91 (approximately \$180) per week. Trainees are responsible for air fare to and from Jersey, Channel Islands, as well as personal expenses. For application and further information write or call:

Training Program
Wildlife Preservation Trust International
34th Street and Girard Avenue
Philadelphia, Pennsylvania 19104
U. S. Telephone (215) 222-3636 Fax (215) 222-2191
U.K. Telephone 44-0534-64666 Fax 44-0534-65161

Minnesota Zoo Reaches Out to Aid Ujung Kulon National Park

As part of their international conservation efforts, the Minnesota Zoo has "adopted" Ujung Kulon National Park in Java, Indonesia. This small park contains the world's last remaining Javan rhinoceros (approximately 50). The Minnesota Zoo has a large Southeast Asian tropics exhibit, making the outreach program to help protect Ujung Kulon and its endangered species a natural extension of its policy.

The program was officially recognized in September 1990 when the Director General of PHPA agreed with the terms of the Minnesota Zoo's plan to help protect Ujung Kulon National Park. The startup cost for this "Adopt-A-Park" partnership was approximately \$25,000. These funds will be used for purchasing a field communication system (complete with two-way radios, antennas, cables, boosters, speakers, and solar panels) for the 11 guard posts, field-bikes for patrolling the eastern edge of the Park, two diesel marine engines, an ocean-going boat for ferrying staff and supplies to remote areas, and smaller boats for patrolling



inland rivers. This program was funded by the Minnesota Zoo Foundation through the Minnesota Zoo.

A visit to Ujung Kulon was conducted in October-November 1990 and the field equipment was purchased and placed in the field. A followup visit in April-May 1991 was just completed. The goal of this second trip was to establish solar panels in three of the guard posts and test their reliability and effectiveness. The Zoo's commitment is scheduled for a three-year period and includes implementing a conservation/education program for Park visitors and residents living on the periphery of the Park. As this program continues requests from the Indonesian conservation authorities will be integrated into the overall strategy of the program.

This report was submitted by Ron Tilson, Director of Conservation, Minnesota Zoo.

Indonesia-Malaysia Faunal Group News

The Indonesia/Malaysia Faunal Group was established at the IUCN Captive Breeding Specialist Group (CBSG) meeting in Copenhagen, in August 1990. The following briefing summarizes news received from various correspondents and members of the group.

Indonesia

Komodo Monitors

The Komodo Monitor Consortium of the AAZPA is dedicated to the conservation of this reptile through captive propagation, *in-situ* conservation, and education and training.

During the presentation ceremony of komodo monitors in Cincinnati, Mr. Ramle, the Indonesian Ambassador to the U. S., announced that the government of Indonesia wished to donate a pair of monitors to the San Diego Zoo. To facilitate arrangements, San Diego Herpetology Curator Tom Schultz visited PHPA in September, and further discussions with the Indonesian Agricultural Attache, Nelson Hutabarat, were pursued in Washington by Schultz, Marty Fujita, and Chris Wemmer. In December, Schultz again visited Jakarta to continue discussions and arrangements. At the present time, the shipment has been postponed pending issuance of permits by the U. S. Fish and Wildlife Service and resolution of final details which is expected in early 1991.

In March 1991, Dr. Eric Wikramanayake departed for Indonesia to initiate a three-year investigation of komodo monitor ecology on the islands of Komodo and Rinja. Research will focus on demography and the ecology of reproduction. An important aspect of this project will be the training of park guards and a forestry department counterpart(s) in field study techniques. In an effort to institutionalize the research component, project activities will increasingly be assumed by the counterparts with each successive year. Dr. Wikramanayake has studied monitor ecology in his native Sri Lanka and is presently a post-doctoral student of Dr. Dale Marcellini (National Zoological Park). Funding for the project has been awarded by the World Wide Fund for Nature, and Friends of the National Zoo. Other proposals for funding are pending.

Bali Starling Conservation Project

The following report is abstracted from the Progress Report submitted October 1990 by S. van Balen, B. van Helvoort, and M. N. Soetawidjaya.

The Bali Starling Conservation Project is a continuing cooperative project initiated in July, 1987 involving the ICBP, PHPA, AAZPA, and the JWPT. It will continue until 1992 and perhaps longer depending on the outcome of the reintroduction efforts. The program consists of several interrelated compo-

nents. A field component focuses on monitoring the status and distribution of wild and reintroduced birds and the introduction of supplemental nest cavities. Poaching has continued in spite of a public education campaign. A captive propagation program was initiated at the Surabaya Zoo in 1987 when 29 enclosures were renovated and a new ten-unit aviary was completed in June 1988. Thirty-two birds from the U. S. and Great Britain were added to the 16 birds already present at the zoo. While hatching rate has been satisfactory, fledging success has been deficient. A 20-30% success rate of the 13 released captive bred birds was reported, but released birds have also been taken by poachers. PKBSI Chairman, General D. Ashari, proposed giving amnesty to owners surrendering their birds to PHPA. Forty to 50 birds had been located as of October 1990, but acquisition will not take place until early in 1991. The CBSG's Population Viability Workshop (PVA) conducted in April 1990 was reported in the CBSG Newsletter. Recent reports give a current population of 18 birds.

Orangutan Research Project

Dr. William Karesh, New York Zoological Society and Harmony Frazier-Taylor, Woodland Park Zoo, Seattle, Washington, pursued the collection of tissue samples for genetic investigations of captive and free-ranging orangutans. Work was carried out in Kalimantan (April and May) and in Sabah and Sarawak (August and September) to collect biopsies for investigations of intra- and inter-subspecific genetic variation. In spring 1988, they collected samples in Sumatra. The project has intrinsic theoretical interest, as well as practical applications for the scientific management of orangutans in the wild and captivity. A total of 112 animals have now been sampled, including 70 animals from Indonesian zoos. Dianne Janczewski, a graduate student of Dr. Stephen O'Brien (National Cancer Institute) will be doing the analyses for her doctorate at the University of Maryland.

Mentawai Island Ecology Study

Dr. Richard Tenaza of the University of the Pacific (Stockton, California) has initiated a project with the Directorate General of Forest Protection and Nature Conservation (PHPA) and local people to establish a new conservation area field station and education center on South Pagai Island which is a relatively untouched natural area off the west coast of Sumatra. South Pagai is a member of the Mentawai Islands which is inhabited by more species of endemic primates per area than any other island in the world. Dr. Tenaza conducted his Ph.D. dissertation research (primate ecology) in the Mentawai Islands in the 1970s, and returned to the area in 1986.

No external organization has made a long-term commitment to protecting the wildlife, cultures, or environments of Mentawai. While Siberut island was named a UNESCO Biosphere Reserve in 1981, there has been little implementation. The World Wildlife Fund (WWF) influenced the Indonesian Government to declare a nature reserve in Siberut and from 1980 to 1982, WWF

staff developed a management plan. Subsequent to their departure, commercial loggers began cutting timber in the reserve. PHPA simply lacks the funds and personnel to protect the area without assistance.

The Fort Wayne Children's Zoo has pledged support to the project through the production of a poster designed to increase awareness of the five species of primates endemic to the Mentawai Islands, including the diminutive Kloss' gibbon. The zoo also purchased uniforms and wildlife protection billboards for the area and has pledged all 1990 Gift Shop profits to advance this wildlife conservation project. The main cost of establishing the sanctuary will be in relocating a native village from the sanctuary to nearby South Pagai Island, a move which the villagers support.

Perth Zoo Program Goals in SE Asia

John DeJose, Director of the Perth Zoo reports that considerable time and effort were devoted to building relationships with Indonesia during the IUCN General Assembly convened in that city in November 1990. The zoo plans to develop a rural 40-ha Endangered Species Breeding Center to facilitate production of jointly-managed species and for the training of Indonesian and other South Asian developing country nationals.

Training for Indonesian Zoo Biologists

The National Zoo's Conservation & Research Center received a \$13,000 grant to support the training of four mid-level Indonesian zoologists who participated in the Zoo Biology Training Program that was hosted by the Indonesian Zoo Association at the Kebun Binatang Ragunan last May. Plans are presently underway to organize a study tour of several zoos for the zoologists in the summer of 1990. Each tour will be tailored to the interests and curatorial specialty of the participants with a goal of facilitating in-country projects on Komodo monitors, maleos, black palm cockatoos, etc.

If sufficient progress is made in compiling studbook data for several species, a studbook workshop will be conducted in Indonesia in late 1991 or early 1992 under the auspices of the Indonesian Zoo Association.

Wildlife Training in Indonesia

The New York Zoological Society has received a grant from the MacArthur Foundation to present a series of Wildlife Conservation Training Courses in Southeast Asia including Malaysia. For further information write to Dr. William Karesh, New York Zoological Society, Bronx, New York.

Indonesian suids—a note from the SSC Specialist Group

Dr. William Oliver, chairman of the IUCN SSC Pigs and Peccaries Specialist Group reports, "I was pleased to note that the babirusa was included in the preliminary listing of species' priorities, which appeared in the CBSG Meeting Report (Denmark) in August. However, as you know, Indonesia is by far the single most important country for the suids in general, and there are several other potential candidates for captive breeding and

Indonesia-Malaysia News...

other conservation initiatives. Amongst the most notable of these are the Javan Warty Pig, *Sus verrucosus*, for which a captive breeding program has been underway for some years at Surabaya Zoo, and the Western Bearded Pig, *Sus barbatus oi*, of which the last female of a trio held at Singapore Zoo (probably the only ones in captivity) died recently. Singapore Zoo also has a breeding stock of Sulawesi Warty Pigs, *Sus celebensis*, though this stock is not pure and this species is not thought to be particularly threatened at the present time. For all of these reasons, I was not only most interested to learn of this Faunal Group, but also hopeful that we may become involved in some way or at least actively collaborate in areas of mutual interest in the initiation and development of relevant projects."

Indonesia Conservation Working Group

A number of Washington D.C.-based non-governmental offices (NGO) have established a working group to pursue greater interagency cooperation in environmental conservation in Indonesia. While the group has been an informal confederacy, discussions at the September meeting at the World Resources Institute included the benefits of a more formal relationship. The group is also exploring the possibility of renting a centralized, shared office/residence in Jakarta. A small number of the members is pursuing the development of a biological diversity training program to be held in Indonesia. The objectives of the course include

- a) the establishment of inventories and long-term monitoring programs of representative ecosystems,
- b) support, through activities and research, of the Biosphere Reserve Action Plan, and
- c) training to enhance biological conservation.

Biodiversity Database for Indonesia

At the request of GOI, Dr. Marty Fujita, Conservation Reserach Center International Affairs Officer, is preparing a proposal to establish a national biodiversity data base for Indonesia, which will be used for land use planning and conservation purposes. The proposal will include research and training initiatives and involvement of SI personnel. Funding will be sought within Indonesia and in the U.S. (\$400,000 for three years).

Malaysia

Malaysian International Center for Wildlife Conservation

During the past four years, the National Zoological Park has worked closely with Malaysia's Department of Wildlife and

National Parks (DWNP) to create a Training Program in Wildlife Management and Conservation for ASEAN countries. The program has been spearheaded by NZP's Dr. Rasanayagam Rudran, who sent Raleigh Blouch to Kuala Lumpur two years ago to serve as official liaison to Mohammed Khan bin Mornin-Khan, the Chief of DWNP.

To date, five training courses have been presented. At the invitation of Datuk Stephen Yong, former Minister of Science, Technology, and Environment, the Smithsonian has embarked on a collaborative effort to create a regional center for conservation biology. The Center will be a cooperative enterprise between the DWNP, the National University near Kuala Lumpur, and the Smithsonian Institution. Its broad goal of promoting the conservation of biological diversity will be implemented through a program of advanced study leading

to graduate degrees. Management will be guided by an advisory committee representing the institutional partners. The National University has agreed to establish an advanced degree program with appropriate advice on curriculum coming from the Smithsonian and its affiliates. Institutional partners will determine priority areas for conservation research and education.

In support of the concept, the Wildlife Department (DWNP) is in the process of expanding it training and dormitory facilities at the Krau Game Reserve in Lanchang.



Asian Rhino Workshop

The Asian Rhino Specialist Group and CBSG are meeting in Bogor on 2-5 October 1991; Drs. Ulie Seal, Tom Foose, Ron Tilson, and Malaysian and Indonesian officials will be in attendance.

Contributions Wanted

Please write us about wildlife conservation projects in the region. A WordPerfect or ASCII file is preferred, but we accept hard copy in any form. We are also interested in receiving notice or reprints of recent references on conservation and fauna of the region, particularly from lesser known regional journals.

Membership

If you would like to receive a regional newsletter, send your name and address to Chris Wemmer, Coordinator IMFIG, Conservation & Research Center, Front Royal, VA 22630 USA. The newsletter is also transmitted to subscribers of CONSLINK.



Invertebrate Working Group News

The Invertebrate Working Group (IWG) has had an active and successful year. Dr. Mark Collins, whose involvement from the outset helped ensure the credibility and reputation of the Group, felt obliged to retire at the end of 1990 because of pressure of other commitments. The IWG and the Federation are indebted to him for his guidance, his leadership, and his hard work. During the year Dr. Chris Andrews became a member of the Group and Mr. David Hughes was appointed Vice-Chairman.

The IWG met three times in 1990 and a feature of the Group's meetings has been to invite guest observers with an interest in invertebrates. These have included colleagues from many different backgrounds, an approach that has helped to provide a cross fertilization of ideas.

The IWG has been involved in several activities ranging from correspondence with the Post Office and the European Community on transportation of invertebrates to the sponsoring of a Resolution at the IUCN General Assembly in Australia.

The Proceedings of the Group's Conference, held in December 1989, are selling well and receiving good reviews as are the Codes of Practice. Two of these Codes have been published to date, "Notes for Inspectors" and "Euthanasia of Invertebrates". It is gratifying to note that the Department of the Environment has welcomed "Notes for Inspectors" and has indicated interest in endorsing it. Other Codes of Practice are in preparation; "Hazardous Invertebrates" is to appear soon.

The IWG has played an active part in the compilation of the section on invertebrates for the forthcoming International Zoo Yearbook. IWG members have also spoken at meetings and mentioned the IWG in publications.

It is particularly heartening to note the development in the past year of invertebrate groups, based largely on the IWG model, in North America and Australia. This is in no small way due to the publicity the IWG has received as a result of its Conference in 1989 and Mr. Hughes' role as its ambassador on his travels overseas in the latter part of 1990.

Three members of the IWG were present at the IUCN General Assembly in Australia. Reference to the IWG and the Federation was made in a resolution entitled "Conservation of Insects and other Invertebrates," which was proposed by the Royal Entomological Society and the Fauna and Flora Preservation Society. The IWG, through Dr. Collins, had been involved in the preparation of this resolution and it was therefore particularly heartening that it was adopted by consensus at the Assembly. The resolution should help to promote the conservation of invertebrates, both in their own right and as essential elements of biodiversity, on a global basis.

A document on captive breeding programs is to be circulated to the Federation membership for comment. It is hoped that this

will help pave the way to a sound working relationship between those keeping invertebrates in zoos and those concerned with conservation of threatened species in the wild.

The IWG has been contacted by the newly-formed Veterinary Invertebrate Society. Although there are some areas in which the IWG and VIS might overlap, the aim is to foster contact in order to serve the interests of captive invertebrates. This is in addition to the excellent relations that already exist between the IWG and a number of amateur and professional bodies concerned with insects, arachnids, molluscs and other groups of animals.

To conclude, the IWG appears to be achieving its aim of helping to promote the welfare and conservation of captive invertebrates and promoting a sensitivity towards these animals when they are kept in captivity. The members of IWG believe that their work is also helping to enhance the credibility of the Federation of Zoos.

The IWG is indebted to all members of the Group for their enthusiasm and hard work and to Mrs. Rosemary Potter for her constant support and encouragement.

This report was submitted by IWG chairman, J. E. Cooper.

IUCN Resolution...

Conservation of Insects and other Invertebrates

RECOGNIZING that there are over one million identified insects and other macro-invertebrates, constituting at least three-quarters of the world's known species and that millions more unidentified species are believed to inhabit poorly studied environments;

ACKNOWLEDGING that insects and other invertebrates, by virtue of their long evolution, variety and adaptability, have colonized virtually all ecosystems on earth;

APPRECIATING that insects and other invertebrates have far-reaching and economically important roles in the proper functioning of natural ecosystems;

ALSO APPRECIATING that insects and other invertebrates are of enormous cultural, educational and aesthetic benefit to mankind;

IUCN Resolution...

RECALLING that surveys of insects and other invertebrates can be of great value in the identification of key areas for the conservation of global biodiversity, in indicating environmental quality, and in monitoring ecosystem disturbance, pollution and change;

COMMENDING the Council of Europe's farsightedness in publishing the "Charter on Invertebrates" and the wisdom of the Committee of Ministers to Member States in adopting Recommendation No R(86)10 calling for governments to take account of the Charter when drawing up their management policies;

RECALLING that insects and other invertebrates are, amongst other wildlife, the subjects of international conventions, including the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), the Convention on Conservation of Migratory Species of Wild Animals (Bonn) and the Convention on European Wildlife and Natural Habitats (Bern), and that many nations have legally protected threatened insects and other invertebrates;

CONCERNED that the main threat to insects and other invertebrates is destruction and degradation of natural habitats, although the habitat requirements of nearly all invertebrates are poorly understood;

CONSCIOUS that many insects and other invertebrates, particularly those endemic species inhabiting island ecosystems, have been brought to extinction through the accidental or purposeful introduction of alien species, and recalling IUCN Recommendation 17.51 "Introductions of carnivorous snails for biological control purposes" and the IUCN Position Statement on "Translocation of living organisms" in this regard;

BELIEVING that collecting of insects and other invertebrates for science, education and curiosity is rarely damaging to their populations, but that commercial collecting for food or trade needs to be controlled at a sustainable level;

AFFIRMING that habitat conservation is the most necessary conservation measure for invertebrates but welcoming additionally the activities of zoo and butterfly houses in support of invertebrate conservation, particularly the formation by the National Federation of Zoological Gardens of Great Britain and Ireland of an Invertebrate Working Group and by the American Association of Zoological Parks of an Invertebrate Management Advisory Group;

AWARE that many nations have recorded the decline of their invertebrate faunas in Red Data Books, and that IUCN has published Red Data Books on invertebrates and Swallowtail butterflies;

The General Assembly of IUCN, at its 18th Session in Perth, Australia, 28 November-5 December 1990:

1. WELCOMES the establishment by the IUCN Species Survival Commission of an Invertebrate Task Force drawn from the IUCN/SSC Invertebrate Specialist Groups and charged with developing and promoting a strategy for IUCN activities to conserve insects and other invertebrates, and urges the IUCN Secretariat and IUCN members to provide support for the Task Force, and to make every effort to assist in the identification and execution of priority activities;

2. REQUESTS the Director General, within available resources, to strengthen support for the IUCN/SSC Specialist Groups concerned with invertebrates;

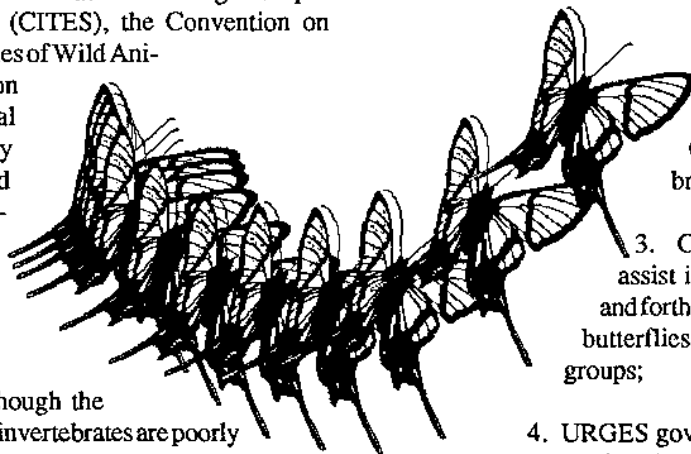
3. CALLS UPON IUCN members to assist in the implementation of published and forthcoming Action Plans for Swallowtail butterflies, Molluscs and other invertebrate groups;

4. URGES governments to:

- a. draft their national protective legislation recognizing that the primary threat to insects and other invertebrates is habitat destruction;
- b. broaden the scope and content of existing international conventions to make them more appropriate for insects, other invertebrates, and particularly their habitats; and
- c. promote practical recovery plans for invertebrate species already listed in national legislation and international conventions;

5. ALSO URGES governments, government agencies and nongovernmental organizations as appropriate to:

- a. promote programmes of integrated and multidisciplinary scientific research aimed at better understanding of the ecology of insects, other invertebrates and their habitats;
- b. adopt and/or provide rejuvenated programmes of biosystematics and taxonomy of insects and other invertebrates and more effective collaboration between taxonomic institutions, and more focus of these activities on conservation planning;
- c. recognize conservation science as an essential activity for the effective maintenance of the diversity of insects and other invertebrates;
- d. record selected invertebrate groups while assessing the



nature conservation value of areas, especially if the assessment is aimed at choosing areas for protection;

e. limit use of biocides, especially in agriculture and forestry, to the minimum and take all possible measures to reduce the impact of biocides on non-target species;

f. avoid accidental introductions of exotic species and, while recognizing that introductions of species for biological control may have advantages for the environment over other forms of pest control, to permit such only after public environmental impact assessments have been carried out;

g. develop and support environmental education programmes that foster appreciation of insects and other invertebrates, as well as the value of preserving biodiversity in general;

h. strengthen invertebrate displays by zoos and butterfly houses linked to captive breeding and re-establishment programmes, and the development of codes of practice on the welfare and management of invertebrates in captivity;

i. accept trade in invertebrates where this is shown to be based on sustainable practices that are not permanently damaging to wild populations, and where there are benefits in terms of scientific knowledge, public education, continuity of natural habitats, or rural development.

Report of the Chairman...

Species Survival Commission

Following is the SSC Chairman's report to the April 1991 meeting of the IUCN Council on activities from December 1990 to March 1991:

The mission of the Species Survival Commission (SSC), as approved by the 18th General Assembly, is "to conserve biological diversity by developing and executing programmes to save, restore and manage wisely species and their habitats." The SSC serves as the principal source of advice to IUCN and its members on the technical aspects of species conservation. It seeks to mobilize action by the world conservation community on behalf of species, in particular those threatened with extinction and those of importance for human welfare. It achieves this by providing leadership with the following four goals:

- 1) to assess the conservation priorities for species and their habitats;
- 2) to develop plans for their conservation;
- 3) to initiate actions needed for the survival of species;
- 4) to provide an expert resource network on the conservation of biodiversity.

In essence, the SSC provides the expertise and the framework needed by the world conservation community to target available resources to the most urgent and important priorities for the maintenance of biological diversity globally.

Activities

1. Network Development and Management

One of the main activities of the SSC since the General Assembly has been appointing members approved at the last Council meeting, beginning with the Steering Committee, Specialist Group Chairs, Regional Members, and Members Emeritus. Dr. Arturo Gomez-Pompa accepted the position of Deputy Chairman, and has been briefed by the Chairman's staff on his role in the Commission. Invitation letters have been issued to 24 Steering Committee members from 20 countries, 541 Regional Members, and 81 Members Emeritus. Eighty-six cooperating organizations have been invited and a more specific role for these organizations in the Commission has been developed for this triennium. Invitations have been sent to 102 Specialist Group Chairmen or Co-chairmen. It is estimated that about 2,800 active members will be appointed.

The SSC has launched several initiatives for this triennium to provide wider coverage for key taxonomic groups or to address emerging species conservation issues. Several new Specialist Groups and Task Forces have been formed. The new Elasmobranch Specialist Group held its first meeting in Sydney, Australia in February in conjunction with an international shark conference. The Amphibian Conservation Task Force convened a meeting in Heredia, Costa Rica to review evidence regarding declining amphibian populations in Central America.

The SSC has produced a "Members Guide to the SSC" which is included with all invitation letters. The Guide provides background information on IUCN and the Commission and spells out specific responsibilities and activities of SSC members. Issue number 15 of *Species*, the newsletter of the SSC, was mailed to all Commission and IUCN members in March and included reports from 34 Specialist Groups.

The Chairman's Office surveyed all Specialist Groups to assess the most important conservation issues facing those Groups and the resources needed to address them. Planning has commenced for an SSC Regional Meeting in west Africa for late 1991.

Funding proposals have been prepared and submitted by the SSC Financial Development Officer for network support and the Amphibian Conservation Task Force.

2. Enhancing Communications

The Steering Committee adopted an official emblem for the SSC based on a paleolithic Bushman rock painting of an eland. The new logo has been incorporated into letterhead and other communications emanating from the Chairman and Deputy Chairman's office. Work also has begun on developing a SSC introductory brochure.

Five new Action Plans were published in time for the General Assembly and have been since widely distributed. The new plans are: Asian Elephants; Otters; Antelopes—Part 3 West and Central Africa; Rabbits, Hares, and Pikas; and African Insectivora and Elephant Shrews. The 1990 IUCN Red List of Threatened Species, published by WCMC with financial and

SSC Chairman's Report...

technical support from SSC, is being distributed by the IUCN Publications Services Unit.

The SSC Occasional Paper entitled *Biodiversity in Sub-Saharan Africa and its Islands: Its Conservation, Management and Sustainable Use* was published in December 1990. The document draws attention to the serious consequences of the loss of biological diversity in sub-Saharan Africa, including offshore islands in the Atlantic and Indian Oceans. It draws together all the previous data and recommendations contained in SSC, IUCN, WCMC, and ICBP publications. *Biodiversity in Sub-Saharan Africa* is being distributed to IUCN Regional Offices, SSC members and IUCN members in Africa. Similar works are planned for all other regions of the world.

The SSC submitted a list of 18 potential publications for 1991 to the IUCN Publications Committee.

3. Planning Conservation Action

Since the General Assembly, the IUCN/SSC Peter Scott Action Plan Fund has provided funding for the Action Planning Process for Marine Turtles, Equids, and Palms. Proposals are pending for Action Plans on Chiroptera and Asian Insectivores. Action Plans are in preparation by 38 Specialist Groups. Action Plan implementation efforts have been funded and launched for Tortoises and Freshwater Turtles and Cetaceans. Both of these Groups have hired Action Plan Implementation Coordinators.

Accurate assessment of the state of wild populations of species is critical to planning and implementing needed conservation actions. Population Viability Analysis workshops are used to fill this need. Two workshops on Asian Rhinos and African Wild Dogs were to have been held in January 1991, but were postponed due to problems with international travel at this time.

The SSC has continued to work with UCMC on the development of a species and habitats database, linking key Specialist groups through a computer network.

4. Heritage Species Programme

The Captive Breeding Specialist Group of SSC has prepared a Conservation Action Plan prototype for the Global Heritage Species Program using the Sumatran rhinoceros. The plan was to have been evaluated at the Asian Rhino workshop in January. As noted above, the workshop has been postponed until later this year.

5. Policy Development

On behalf of the CITES Secretariat, the SSC Trade Specialist Group has begun a survey of all SSC Specialist Groups to assess the biological status of species subject to significant levels of trade.

Plans are underway for a workshop in 1991 to consider reviewing IUCN's "categories of threat," using a paper prepared for SSC in 1990 by Georgina Mace and Russ Lande. The

application of their population biological model to plants, invertebrates, and lower vertebrates would be a primary concern of such a workshop.

The SSC is organizing three workshops for the 4th World Parks Congress and the SSC Chairman attended the most recent Parks Congress planning meeting in Washington, D.C.

6. Supporting Field Projects

The SSC has been advising its Regional Vice-chairman for the Middle East, Dr. Abdulaziz Abuzinada in Saudi Arabia, and SSC member Mr. Ralph Daly in Oman on species conservation issues in light of the oil spill in the Arabian Gulf. Information on general species conservation needs and technical advice on specific management proposals has been provided.

Continued technical support, including field assistance, has been provided to the Kouprey Conservation Programme in southeast Asia. Support also continues on a project to survey and make management recommendations for several species of endangered Vietnamese pheasants.

In conjunction with the CITES Secretariat, the SSC is overseeing a project to develop a management program for marine turtles on Aru Island in Indonesia.

7. Sustainable Wildlife Utilization

The newly formed SSC Specialist Group on Sustainable Use of Wild Species has drafted terms of reference and begun appointing members. It will work in concert with the IUCN Sustainable Use of Wildlife Initiative headed up by Steve Edwards. The IUCN Initiative is cooperating with the SSC Trade Specialist Group on the CITES significant trade study.

**EEP
News**

More than 200 zoological gardens from about 20 countries participate in the 63 EEPs (European Breeding of Endangered Species Program). During the past two years, it became more and more apparent that the rapidly expanding number of EEPs urgently need an executive office. Such an executive office, however, has to be supported by all zoos in Europe. The EEP coordination committee and the European Community Association of Zoological Gardens and Aquaria (ECAZA) therefore jointly have started to prepare the foundation of an all European zoo organization.

In the meantime, the EEP coordination committee accepted the generous offer of the Dutch Zoo Federation that its National Foundation for Research in Zoological Gardens (NFRZG) may serve as an EEP executive office, and Dr. L. de Boer and his staff took over this task on 1 January 1990. The address for this office is: Stichting National Onderzoek Dierentuinen, P. O. Box 20164,

1000 HD Amsterdam, The Netherlands; Telephone: 020-620 74 76; FAX: 020 - 625 39 31.

The EEP coordination committee met on 8 February 1991 at Cologne to discuss the further development of coordinated breeding programs in Europe. A major topic was the integration of breeding programs of continental Europe and the British Isles.

The annual EEP conference will be held at Budapest Zoo, 13-15 May 1991. It will be the first time that an EEP conference takes place in Eastern Europe and will allow many colleagues from Eastern European countries to participate in an EEP conference for the first time.

Note on an EEP for the Clouded Leopard (*Neofelis nebulosa*)

In June 1990, a proposal was put to the EEP coordinating committee for approval of an EEP for the Clouded Leopard. This proposal was agreed by the EEP conference in Cologne. This proposal was further confirmed by the meeting of the International Union of Directors of Zoological Gardens (IUDZG) in Copenhagen 1990. An EEP program was felt necessary for the following reasons:

1) The ever increasing threat of habitat destruction in the wild which will inevitably place this species into the endangered category of IUCN Red Data listing.

2) The state of the captive population of Europe at present. There is very little breeding of this species in Europe. The major success of breeding this species in the U.S.A.

3) There is a need to bring together the differing opinions on the management and husbandry of this species in captivity for the benefit of the population.

4) The captive population needs to be analyzed for subspecies identification. The subspecies, *N. n. brachyurus*, is either extinct or have been reduced to very low numbers in the wild. It would be part of the proposed EEP to see if this subspecies was held in any of the collections.

5) There is a need for an analysis of the genetic and demographic status of the species in captivity.

6) Due to the small population size in Europe, it needs to be managed as a single population rather than that of a U.K. population and a mainland Europe population.

As the development of the EEP continues, it is hoped to bring together people who are involved with Clouded Leopards hopefully including field conservationists. It is planned to hold workshops on the many varied aspects that are needed for the management of this species in captivity and to open up the discussion on the varying views and ideas. At present, information is being collated from European collections listed as holding these animals in the International Studbook, ISIS, and International Zoo Yearbook. Further information would be of use from those collections who hold the species but as yet have not been contacted (particularly private collections) because of non-listing. Contact: David G. Hughes, EEP Coordinator - Clouded Leopard, Glasgow Zoo, Uddingston, Glasgow G71 7RZ, Scotland, U.K.



India Zoo News

International seminar on veterinary medicine in wild and captive animals

For the first time in India, an International Seminar on Veterinary Medicine in Wild and Captive Animals has been organized. The Seminar is the brainchild of the Indian Veterinary Association with support from several related organizations and institutions both in India and abroad. Papers on aspects of nutrition, breeding and health of wild and captive animals are welcome. The Seminar will highlight the role of veterinary medicine in wildlife management, disease, fertility control, conservation genetics, breeding endangered species and the role of zoos in conservation. There will also be a Poster as well as a Tape session. Oral presentations should be limited to 15 minutes. Tapes must be on VHS system. The seminar dates are from 8-12 November 1991.

Address all correspondence to Dr. S. Abdul Rahman, Secretary General, I.V.A., 123 7th Main Road, IV Block (West) Jayanagar, Bangalore 560 011 India. Tel: (0812) 641 200 Fax: 91 812 641-1585. (Correspondent's Note: This would be an excellent opportunity for a demonstration of transponders and biopsy darts to be given to the Indian wild animal veterinary profession.)

Indian zoo directors meeting

The first ever meeting of Indian zoo directors will be held in the second week of June at Nehru Zoological Park, Hyderabad A.P. India.

Manipur brow antlered deer status report

The manipur row-antlered deer (*Cervus eldi eldi*) locally known as "Sangai" is one of the most endangered cervids in the world with 76 animals isolated in one ecologically vulnerable area of India. The sub-species is indigenous to that area. It is one of three sub-species of Eld's Deer, the others being *Cervus eldi thamin* and *Cervus eldi siamensis*.

Fifteen Indian zoos are holding from 1 to 23 individuals. No zoos outside India hold animals of this sub-species. Of the fifteen zoos, four are holding single animals, three with a single male and one with a single female. Of the remaining eleven zoos, six reported breeding this year.

There were a total of fifteen births (3.5.7) this year with four infant (2.2) mortalities. Adult deaths totaled seven (2.5) with one escape (1.0). The total stock position of this species in captivity is (45.38.8) as of April 1991.

During the year there were no transactions involving Sangai between zoos although some are "in process". Zoo directors have

India News...

indicated their desire for a special workshop or seminar on the species. Despite thirty years of breeding the Sangai, the national captive group has not grown exponentially. Since 1980 there has been a stagnation or actual decline in numbers.

There is a plan to introduce Sangai into an alternate habitat in Pobitara Sanctuary in Assam. Four animals (2.2) aged about three years have been selected from the National Zoological Park and await transfer to the one-acre holding facility which has been constructed for them in Pobitara.

Status of captive Barasingha

There are presently 129 (11.27.91) Barasingha (*Cervus duvaucelli duvaucelli*) in captivity in India in four zoos (Lucknow, Chhatbir, New Delhi, Kanpur), one breeding center (Kukrail), and one research center (I.V.R.I.) according to a recent survey by Z.O.O. This number represents virtually all the Barasingha in captivity in India except for one (*Cervus duvaucelli branderi*) known to be in Calcutta Zoo which did not participate in the survey.

All animals except for one female are descendants of a wild-caught pair from Bahreich (M) and Lakimpur-Khairi (F). The other female is also wild-caught from Pallia District. Therefore, it is certain that all the animals in captivity, except for the Calcutta Zoo individual, are of the sub-species *Cervus duvaucelli duvaucelli*.

This year there were 16 births, 0.0.14 at Lucknow Zoo, 0.0.1 at Chhatbir Zoo, and 0.0.1 at Kanpur Zoo.

List of wild animal facilities compiled

As part of the comprehensive Zoo Consultancy Project conducted by Dr. J. H. Desaj under the Wildlife Institute of India and funded by the Ministry of Environment and Forests, a complete list of wild animal facilities, their addresses and their administering authorities has been compiled.

According to the list there are 205 facilities under six different categories, i.e. Zoos (107), Deer Parks (49), Safari Parks (13), Snake Parks (6), Nature/Education/Breeding Centers (24), and Aquariums (6).

A total of 16 different controlling authorities administer the zoos: Ministry of Environment and Forests, Government of India (1 facility), State Forest Department (148 facilities), State Department of Cultural Affairs (2), State Department of Animal Husbandry (1), State Department of Horticulture (1), Municipality Corporations (10), Municipalities (6), Public Sector Undertakings/Autonomous bodies (16), Trusts (10), Private Sector (2), Privately Owned (2), Educational Institutions (4), Scientific Societies (2), and Research Institutions (2).

Of the 29 State and Union Territories listed, the State of Karnataka has the most animal facilities with 27, while a number of states and U.T.'s had one facility only, leaving no state without a zoo of some sort. About six of the facilities listed are "in process".

A copy of the list, and various charts pertaining to it, can be obtained from Dr. J. H. Desai, Jr., Director, Wildlife Institute of India, New Forest, Dehra Dun, U.P., India or Z.O.O., Box 1683, Coimbatore 4, India.

Mysore Zoo celebrates centenary

The Mysore Zoo celebrates its Centenary in 1992 and plans an international gathering to mark the event. It will be held in the Fall of 1992. Topics for International Meetings are invited. Write to Mr. B. G. Mugdur, Director, Mysore Zoo, Indiranagar, Mysore 10, India.

Ninth International Bat Research Conference

The Ninth International Bat Research Conference will be held in Maurai, Tamil Nadu, India on 3 - 7 August 1992 at the campus of Madurai Kamaraj University. It will be the first occasion for the world's bat researchers to meet in India or Asia.

Scientific sessions will consist of papers on every aspect of bat research in behavior, biology, and conservation. Spoken papers will be allowed 10 minutes presentation with 5 minutes for questions. A poster session is also planned. Two copies of abstracts of no more than 200 words are due by 15 May 1992. Early registration deadline is 31 January 1992. Write to Dr. G. Marimuthu, Ninth Intl. Bat Research Conference, School of Biological Sciences, Madurai Kamaraj University, Madurai, India 625 021.

**AAZPA
Conservation
News**

AAZPA and Discovery Channel to Sponsor Rhino Walk

The AAZPA and the Discovery Channel (cable television) will be coordinating the visit of celebrated African conservationist Michael Werikhe. Known throughout Africa as "the Rhino Man" and 1990 winner of the coveted Goldman Environmental Award, Werikhe will tour the North American continent in an effort to raise \$2,000,000 for rhino conservation. In 1985, he trekked 1,250 miles across Uganda, Kenya and Tanzania, raising money to support various rhino studies and sanctuaries. In 1988, he walked 1,800 miles across Europe and raised \$1,000,000 in five months. Much of Werikhe's tour will involve hiking across North America. During his six-month visit, he will log 1,500 miles and appear in nearly 30 cities.

AAZPA Annual Conference

Species Survival Plan and Taxon Advisory Group Meetings at the 1991 AAZPA Annual Conference in San Diego will be from 14-19 September. Please plan your schedules accordingly if you plan to attend. Registration information can be obtained

from Donna Damson, San Diego Zoo, P.O. Box 389, San Diego, CA 92112 USA

Joint Survey Developed by AAZPA and U.S. Fish and Wildlife Service

A joint AAZPA/U.S. Fish and Wildlife Service (USFWS) survey was distributed by AAZPA to the directors of all accredited institutions. The intent of the survey was to poll institutional members about their interest in developing breeding programs for endangered native species. The USFWS is considering the development of an official policy on captive breeding which could aid in decision-making.

Small Population Management Advisory Group Update

An advanced workshop in SSP masterplanning was held from 1-6 April at the National Zoo's Conservation and Research Center in Front Royal, VA. Instructors included Bob Lacy, Tom Foose, Jon Ballou and Robert Wiese. Twelve individuals successfully completed the course and will become members of the newly-formed AAZPA Small Population Management Advisory Group. The intent of this program is to expand the number of people that have SSP masterplanning skills. A second workshop is planned for 1992.

Joint Symposium on the Captive Management and Conservation of Amphibians and Reptiles

A symposium on the captive management and conservation of amphibians and reptiles will be held from 9-10 August 1991 at Pennsylvania State University. The symposium, which will consist of 42 papers, will be held during the joint Annual Meeting of the Society for the Study of Amphibians and Reptiles and the Herpetologist's League. The meeting is being organized by Joseph T. Collins, Kraig Alder, Edmund Brodie, Jr., Linda Maxon, Joseph C. Mitchell, and James B. Murphy. The two-day event will be dedicated to Roger Conant, former Curator of Reptiles at the Toledo and Philadelphia zoos, and former director of the latter. For registration information, please contact Linda Maxon, Ph.D., Pennsylvania State University, 208 Mueller Laboratory, University Park, PA USA 16802.

AAZPA Herpetology Advisory Groups Hold Mid-year Meeting

The Amphibian, Crocodylian, Lizard, Snake, and Chelonian Taxon Advisory Groups met 27 February-3 March in Oklahoma City, OK. Over 80 individuals participated in the conference, presenting research papers, reviewing progress on current projects, planning and assigning future studies, and designating species for studbook and SSP recommendation. A Herpetology Veterinary Advisory Group was formed at the meeting. The chairs and coordinators are to be commended for their exceptional work and progress. The Oklahoma Zoological Society and David Grow, Curator of Herpetology deserve special thanks for hosting and organizing the conference.

AAZPA Forms New Taxon Advisory Groups

AAZPA's Wildlife Conservation and Management Committee (WCMC) has reviewed and approved petitions to establish three new taxon advisory groups. Those interested in receiving information should contact the following:

Canids, Hyenas and Aardwolves: Jack Grisham, Oklahoma City Zoological Park or Roland Smith, Point Defiance Zoo & Aquarium

Felids: David Wildt, National Zoological Park or Jill Mellen, Metro Washington Park Zoo, Portland, OR

Rhinos: Bob Reece, Wild Animal Habitat, Cincinnati, OH

Taxon Advisory Groups to Form

Preliminary efforts are being made to establish several new AAZPA taxon advisory groups. Those interested in receiving information should contact the following:

Cattle: Bruce Read, St. Louis Zoological Park

Edentates: Mike Flint, Reid Park Zoo (replaces Dennis Merrit, Lincoln Park Zoological Garden)

Pigeons and Doves: Bill Toone, San Diego Wild Animal Park

Pigs and Peccaries: Lehr Brisbin, Savannah River Ecology Laboratory, Drawer E, Aiken, South Carolina 29801 or Bill Houston, St. Louis Zoological Park

AAZPA Conservation Center on BITNET

The AAZPA Conservation Center staff can now be reached via electronic mail. The BITNET addresses for Michael Hutchins and Robert Wiese are: NZPAAZ01@SIVM and NZPAAZ02@SIVM, respectively. A listing of relevant BITNET addresses is being compiled by the Conservation Center. Please send your name, institution and BITNET address to Robert Wiese, AAZPA Conservation Biologist at the above BITNET address. We thank Peter Kibbee of the National Zoological Park for his assistance in getting us on the system.

Addax Planning Meeting Held

An Addax strategic planning meeting was held from 16-17 January 1991. The meeting was hosted by the Fossil Rim Wildlife Center in Glen Rose, Texas and attended by Species Coordinator, Terrie Correll, members of the propagation group, several advisors, and AAZPA Conservation Biologist, Dr. Robert Wiese. Steps were taken to develop a long range plan for the Addax SSP with regards to population management, research and reintroduction. The Addax SSP is currently looking for new participating institutions. For further information, please contact Terrie Correll c/o The Living Desert, 47-900 Portola Ave., Palm Desert, CA 92260.

Henry Doorly Zoo to Host Wild Cattle Workshop

Omaha's Henry Doorly Zoo will host a wild cattle workshop from 13-16 June 1991. The workshop will focus on the cryopreservation, banking and importation of semen. Participants will include representatives from the domestic cattle indus

AAZPA...

try, United States Department of Agriculture and the zoo community. The goal is to develop a series of specific recommendations and plans for preserving endangered wild cattle. The workshop will be sponsored in part by Schering-Plough Animal Health, Omaha, NE. Please contact Karla McPeake, Henry Doorly Zoo, 3701 S. 10th St., Omaha, NE USA 68107 to receive registration materials.

Masterplanning Session Held for Andean Condor

An SSP masterplanning session for the Andean condor (*Vulture gryphus*) was held at the Los Angeles Zoo from 23-25 March. Several zoo specialists participated, including Species Coordinator, Mike Wallace; Population Geneticist, Jon Ballou; and AAZPA Conservation Biologist, Robert Wiese. Genetic and demographic analyses were performed and a number of breeding recommendations formulated.

AAZPA Conservation Academy Conducts First Course

The AAZPA Conservation Academy conducted its first course from 23 February-1 March at the St. Louis Zoological Park. Instructors included, Alan Templeton, Bruce Read, Michael Hutchins, Alan Shoemaker, Bruce Carr, Jill Mellen, Nate Flesness, and Paul Scobie. Twenty individuals completed Course I, which was focused on the function and production of studbooks. Course II, which is intended to train individuals to become SSP coordinators, is currently under development. Both courses will be taught in 1992, thereby expanding the enrollment to 40 individuals.

Chimpanzee Exhibit Design Workshop Held

A workshop on the design of chimpanzee exhibits and holding facilities was held from 15-17 February at the Knoxville Zoological Gardens. Over 45 experts, including behaviorists, curators, field biologists, veterinarians, and architects were assembled. Results of the workshop will be utilized by the zoo to design a new primate facility. The guidelines established at the meeting will be distributed to all North American chimpanzee holding facilities through the Chimpanzee SSP and to a broader audience through a publication. For further information, contact Gretta McMillan, Research Coordinator, Knoxville Zoological Gardens, P.O. Box 6040, Knoxville, TN USA 37914.

Felid Advisory Group Holds Organizational Meeting

A organizational meeting of the AAZPA Felid Taxon Advisory Group was held in conjunction with the CBSG Felid Action Plan Working Group at the National Zoological Park's Conservation and Research Center from 2-5 May. The meeting was organized by Drs. Dave Wildt, Jill Mellen, U.S. Seal and Tom Foose. Also in attendance was Peter Jackson, Chair of the IUCN Cat Specialist Group. The group reviewed the status of felids in the wild and in captivity. They also developed a list of priority projects for the coming year. For further information, please contact David Wildt or Jill Mellen, co-chairs, AAZPA Felid

Taxon Advisory Group. Drs. Wildt and Mellen can be reached in c/o the National Zoological Park, 3000 Block of Connecticut Ave. NW, Washington, DC 20008 and Metro Washington Park Zoo, 4001 SW Canyon Rd., Portland, OR 97221, respectively.

This report was submitted by Michael Hutchins, AAZPA Director of Conservation and Science and Robert Wiese, Conservation Biologist

Publications of Interest

Bureaucratic Mischief: Recognizing Endangered Species and Subspecies. 1991. S. J. O'Brien and E. Mayr. *Science* 251:1187-1188. The authors address how hybridization has confused efforts to preserve endangered species. Examples such as the Florida Panther and Red Wolf are cited.

Funding Asymmetries for Endangered Species, Feral Animals, and Livestock. 1991. J. Berger. *Bioscience* 41:105-106. The author documents the relative disproportionate expenditure of funds to manage wild horses in the U. S. versus monies allocated to endangered species research and preservation.

Black-footed Ferret Annotated Bibliography, 1986-1990. 1990. R. P. Reading and T. W. Clark. Montana. BLM Wildlife Technical Bulletin No. 3, 222 North 32nd St., P. O. Box 36800, Billings, Montana 59107 USA. The authors review and comment on publications pertaining to the black-footed ferret (*Mustela nigripes*) produced from 1986-1990.

Biodiversity and Conservation. Journals Promotion Dept., Chapman and Hall, 29 West 35th St., New York, NY 10001-2291 USA. Biodiversity and Conservation is a new, quarterly international journal devoted to the publication of articles on all aspects of biological diversity, its description, analysis, and conservation. Submissions are welcome.

Inbreeding Depression in a Captive Wolf (*Canis lupus*) Population. 1991. L. Laikre and N. Ryman. *Conservation Biology* 5:33-40. The authors document negative effects of inbreeding expressed as reductions in juvenile weight, reproduction, and longevity. These data indicate that deleterious alleles may be common in natural wolf populations.

Conservation Genetics of the Endangered Isle Royale Gray Wolf. R. K. Wayne, N. Lehman, D. Girman et al. *Conservation Biology* 5:41-51. The authors address the issues of genetic variability and relationships of a declining population of wolves on Isle Royale National Park using allozyme electrophoresis, mtDNA restriction-site analysis, and multilocus hypervariable minisatellite DNA analysis (genetic fingerprinting).



Captive Breeding Specialist Group Membership



Following is a partial listing of the 1991 CBSG membership. Addresses and telephone/telex numbers are included so that members can contact each other. Because of space limitations, only a partial list could be published in this issue. The remainder of the membership will be published in the next issue of CBSG News.

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CBSG Activities Schedule

Below is a schedule of meetings and activities undertaken by the CBSG Chairman, Ulie Seal, and the Executive Officer, Tom Foose, for the remainder of 1991. This schedule is current only as of 15 May 1991. Additional activities will appear in the next issue of CBSG News. Individuals wishing more specific information can contact the CBSG office.

June

- 1 - 8 Washington, DC: Panda Mtg and PVAs
- 10 - 12 Wuppertal: Waldrapps Ibis PVA
- 13 - 16 Omaha, Nebraska: Wild Cattle Reproductive Technology Mtg.
- 18 - 22 Madison, Wisconsin: Conservation Biology Mtg.
- 26 Itasca, Minnesota: Lectures (Conservation Biology)

July

- 1 - 20 Vacation (Seal; starting June 29)
- 25 - 26 Minneapolis, Minnesota: World Future Mtg.
- 29 - 31 Berkley, California: Wildlife 2001 Conf.

August

- 6 - 8 Fossil Rim, Texas: Whooping Crane PVA
- 7 - 11 Penn State: Herpetology Conservation Symp. (Foose)
- 15 - 16 U. K. Disease Working Group
- 18 - 24 Slimbridge: Waterfowl Action Plan
- 25 - 30 Cervid Action Plan

September

- 2 - 6 Minnesota: Kirtlands Warbler PVA
- 14 - 19 San Diego: SSP & AAZPA Mtg. (CBSG on 14th, Tiger SSP)
- 24 - 26 Singapore: Hornbill Workshop
- 27 - 29 Singapore: CBSG Meeting
- 30 - 2 Singapore: IUDZG

October

- 2 - 5 Bogor, Indonesia: Asian Rhino Workshop
- 6 - 9 Kobi, Japan: JAZGA SSCJ Mtg.
- 21 - 24 St. Vincent's: Carribean Parrots PVA
- 27 - 1 Kenya: Tana River Primate Reserve CVA

November

- 11 - 15 Minnesota: Piping Plover PVA

December

- 2 - 6 Fossil Rim: Canid Captive Breeding Action Plan

Meetings...

The Pandas: A Conservation Initiative, 2-7 June 1991, Washington, D. C. USA. Contact: Devra G. Kleiman, Department of Zoological Research, National Zoological Park, Smithsonian Institution, Washington, D. C. 20008, USA. Fax: (1) 202-673-4686.

Wild Cattle Symposium, 13-16 June 1991, Omaha, Nebraska, USA. Contact: Wild Cattle Symposium, Omaha's Henry Doorly Zoo, 3701 S. 10th St., Omaha, NE 68107 USA. Tel: (1) 402-733-8401; Fax (1) 402-733-4415.

Wildlife 2001: Populations, 29-31 July 1991, Oakland, California, USA. Contact: Dale R. McCullough or Reginald H. Barrett, University of California, Department of Forestry and Resource Management, 145 Mulford Hall, Berkeley, CA 94720, USA. Fax: (1) 415-643-5438.

Botanic Garden Conservation Activities, 1-5 September 1991, Kew, England. Contact: Ian Beyer, Kew Conservation Conference, Royal Botanic Gardens, Kew, Richmond, Surrey TW9 3AB, United Kingdom.

Ungulates 91, 2-6 September 1991, Toulouse, France. Contact: Secretariat, Symposium Ongules, I.N.R.A.-I.R.G.M., B.P. 27, 31326 Castanet-Tolosan, Cedex, France.

Captive Breeding Specialist Group Annual Meeting, 27-29 September 1991, Singapore. Contact: CBSG, 12101 Johnny Cake Ridge Rd., Apple Valley, MN 55124 USA.

Conservation Biology in Australia and Oceania, 30 September - 4 October 1991, Queensland, Australia. Contact: Dr. Peter Hale, Centre for Conservation Biology, University of Queensland, Australia Q.4072. Tel: 07-3651391; International: 617-3651391; Fax: 617-3651655.

Regional Meeting of the Crocodile Specialist Group and Workshop on Farming, 11-14 November 1991, Santa Marta, Columbia. Contact: Crocodile Specialist Group, Florida Museum of Natural History, Gainesville, FL 32611, USA. Tel: (1) 904-392-1721; Fax: (1) 904-392-9367.

Corrections...

Information obtained for the article entitled, "Disease Outbreak in Arabian Oryx in Jordan" in the Vol. 2, No. 1 issue of CBSG News originally appeared in the SSC Veterinary Group Newsletter, No. 5, June 1990. The editors of CBSG News try to attribute authorship when it is known and we apologize for any errors in this regard.

Reader Survey

The CBSG needs information from our readers in order to develop an effective communication network. If you are interested in receiving this newsletter and in helping with the goals of the CBSG, please take a few minutes and complete the below questionnaire. *Current CBSG members do not need to complete this form.*

Title: Prof. ___ Dr. ___ Mr. ___ Ms. ___ Other _____

Name: _____

Position: _____

Institution Name: _____

Address: _____

Country _____

Telephone: (office) _____ Telefax: _____

My areas of interest and specialization are: _____

Are you interested in participating in the CBSG? Yes _____ No _____

Would you be interested in becoming a national correspondent for the CBSG News? Yes _____

Are you interested in continuing to receive the CBSG News? Yes _____ No _____

Thank you for your cooperation. Please remove this page and mail to:

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Help! We're looking for information!

CBSG is seeking information on zoo support of protected areas. If your institution is actively involved in the support of wildlife parks, reserves, or other habitats supporting critical flora and/or fauna, we would like to know about it. The results of this survey will be presented in a future issue of CBSG News. For an example of the type of program that is of interest, see the article entitled, "Minnesota Zoo Reaches Out to Aid Ujung Kulon National Park" appearing in this issue. Please send us any project summaries or reports describing such activities.

YOUR NAME: _____

ADDRESS: _____

CITY: _____ COUNTRY _____ POSTAL CODE _____ TELEPHONE: _____

PROGRAM NAME/AREA SUPPORTED: _____

SUPPORTING INSTITUTION: _____

INSTITUTION ADDRESS: _____

OTHER INFORMATION: _____

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CBSG News



*Newsletter of the Captive Breeding Specialist Group
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