

# CBSG News

## Inside...

- CBSG Annual Meeting Agenda
- Working Group Reports
- Rhino Action Plan
- CAMPs
- Taxon Reports
- Regional Reports

Volume 3  
Number 2  
August, 1992

## What Is CBSG? What Do We Do?

The Captive Breeding Specialist Group (CBSG) of the IUCN/SSC is a global network of more than 450 volunteer experts from zoos, wildlife agencies, and universities in over 70 countries whose mission is "to assist the conservation and establishment of viable populations of threatened species through captive propagation programs and through intensive protection and management of small and fragmented populations in the wild." CBSG serves to catalyze cooperation and link programs between the wildlife and captive conservation communities worldwide.

Six programs central to CBSG's function are (1) Conservation Assessment and Management Plan Workshops (CAMPs), (2) Population and Habitat Viability Assessment Workshops (PHVAs), (3) Global Captive Action Plans (GCAPs), (4) Global Animal Survival Plans (GASPs), (5) a quarterly Newsletter, and (6) international regional information and coordination meetings.

CAMP groups intensively review and assess the wild and captive status of groups of taxa (ten have been completed including waterfowl, parrots, and primates) in collaboration with SSC and ICBP specialist groups and zoo professionals. A category of threat, based upon the Mace-Lande population biology criteria, is assigned to each taxon and needed intensive conservation actions recommended. These annually-revised reports provide a basis for selection of species and habitats for intensive conservation management planning and action. CAMP workshops are planned for all of the tetrapod vertebrates over the next five years with 14 currently scheduled for the next year.

PHVAs undertake an intensive review of the biology and status of a single species or protected area, assess the risk of extinction, develop a stochastic simulation model of the population dynamics, and assist the formulation and testing of an adaptive management plan. These workshops have been effective in bringing together diverse and conflicting interests to achieve a consensus on the risk of extinction and on needed management actions to reduce that risk and assist recovery. About 30 PHVA workshops involving 800 people have been conducted in eight countries on four continents. About 25 PHVAs are planned for the next year.

Global Captive Action Plans summarize the captive status and management priorities for taxa recommended by CAMPs for captive populations as a part of their conservation management. Available space is estimated from ISIS and regional information to provide a framework for the allocation of space to individual species and for the mix of strategies that might be employed. These strategies may include a captive population, interchange with a wild population, and the use of genome banking. Regional distribution of responsibility and target populations for individual taxa are formulated in the GASP process. These plans are developed by program representatives from the individual regions. A Global Species Coordinator works closely with the captive programs in each of the regions and with the wildlife agencies in each of the range countries.

Communications among CBSG members, all known zoos, and anyone interested in working with small populations for conservation are undertaken with the Newsletter which is distributed quarterly to 5000 people in 150 countries. We responded to over 3200 pieces of correspondence from 120 countries in the past year. We distribute software, manuals, and Workshop reports at cost. About 1200 people in nine countries have participated in the Workshops and many have adopted the tools and processes being developed. CBSG meetings are conducted jointly with national and regional zoo association meetings currently in Europe, India, Australasia, Japan, Africa, Central America, Brazil, SE Asia, and North America.



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

Ulysses S. Seal, CBSG Chairman

**INTERNATIONAL CONFERENCE ON IMPLICATIONS OF INFECTIOUS DISEASES  
FOR CAPTIVE PROPAGATION AND REINTRODUCTION PROGRAMS OF  
THREATENED SPECIES**

**11-13 NOVEMBER 1992  
OAKLAND, CALIFORNIA, U.S.A.**

Return the registration form to: Peregrine L. Wolff, DVM, Director of Animal Health, c/o  
CBSG, 12101 Johnny Cake Ridge Road, Apple Valley, MN 55124 USA, Tel: (612) 431-9325, Fax:  
(612) 432-2757.

**Accommodations:**

Parc Oakland Hotel  
1001 Broadway  
Oakland, CA 94607-4077 USA  
Tel: 415-451-4000  
Fax: 415-839-0677

**Rates:**

<u>No. People</u>	<u>Rate (\$U.S.)</u>
1	\$76.00
2	\$76.00
3	\$96.00
4	\$116.00

I would like to attend the International Conference on  
Implications of Infectious Diseases for Captive Propagation and  
Reintroduction Programs of Threatened Species. Enclosed is my  
check or money order for \$100.00 (U.S.)

**NAME:** \_\_\_\_\_

**INSTITUTION:** \_\_\_\_\_

**ADDRESS:** \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**TELEPHONE:** \_\_\_\_\_

**MAY WE DISCUSS ANOTHER ISSUE?**



The *CBSG News* is currently distributed to a network of over 5,000 CBSG members and conservation professionals in 170 countries. In order to keep up with increasing expenses for the printing and distribution of the *CBSG News*, we are asking for contributions from readers in hard-currency countries who feel they can afford to help us defray these costs. If you would like to assist the CBSG with these expenses, please take a moment to fill out the coupon below. *Suggested contribution is \$25 (U.S.).*

Name \_\_\_\_\_

Institution \_\_\_\_\_

Address \_\_\_\_\_

\_\_\_\_\_

Country \_\_\_\_\_

- Yes! I am enclosing \_\_\_\_\_ to the CBSG to help defray costs for publication and distribution of the *CBSG News*
- I cannot contribute at this time, but would like to continue receiving the *CBSG News*
- I no longer wish to receive the *CBSG News*

**Please Return to: CBSG, 12101 Johnny Cake Ridge Rd., Apple Valley, MN 55124 USA**

## 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:

CBSG News  
12101 Johnny Cake Ridge Rd.  
Apple Valley, Minnesota 55124 USA  
Phone: (612) 431-9325  
Fax: (612) 432-2757

**Chairman:** Ulysses S. Seal, Ph.D.

### Staff

**Executive Officer:** Thomas Foose, PhD  
**Editor:** Terry J. Kreeger, DVM, PhD  
**Program Officer:** Sue Ellis-Joseph, PhD  
**Administrative Officer:** Judi Mikolai  
**Program Assistant:** Lisa Laqua

## Contents...

Individual Contributors .....	4
Registration Information: CBSG Annual Meeting .....	4
1992 CBSG Annual Meeting Agenda .....	5
Reptile and Amphibian Working Group Report .....	6
Antelope Working Group Report .....	10
Giant Panda Working Group Report.....	10
Captive Action Plan for Rhinos.....	11
GASPs at Last.....	14
IUCN/SSC Deer Specialist Group Report .....	14
CAMPs Progress Report.....	15
ISIS News.....	Special Insert
Desert Fishes SSP .....	17
Yemen Gazelles .....	18
New Gazelle Taxon Captive Breeding.....	18
Panama Tapir Project .....	19
Drill News .....	20
ISO Working Group on Transponders .....	20
Microchip Implants: Resolution .....	21
The Caracas Declaration .....	22
AAZPA Conservation News .....	24
IUCN/US News .....	25
EEP Developments .....	25
EAZA Formed .....	26
U.K. Zoo News .....	26
Vietnam Captive Breeding .....	27
Agenda: Conference on Infectious Diseases .....	28
CBSG Activities Schedule .....	29

## 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



## Thanks...

CBSG works because of the people that support it. CBSG extends their appreciation to the following individuals who have contributed to the CBSG fund and CBSG News:

Abdul-Wahed Al-Saihati	W. Flavell	Manley Osbak
Allison Alberts	Elizabeth S. Frank	Pisit na Patalung
Norma Ames	Cinzia Garavelli	Ramon Perez-Gil
Morten H. Andersen	Reg Gates	Cecilia Pleshakov
Walter Angst	Library GLAZA	Howard Quigley
Gustl A. Anzenberger	Marc Graff	Ettore Randi
D. Ashari	Steve Hamilton	Tim Redford
Edward D. Asper	Lennart Hansson	Mark Reed
Rick Barongi	Mary Healy	Kathryn Roberts
Kevin Bell	Terrell G. Heaton-Jones	Francesco Rocca
Lonnie Bird	L. Chieh Hsu	Jose Rodriguez Velez
Judith Block	R. Brian Hunt	Wilda (Tomwil) Rokos
Jelle Boef	ISIS	Fred Runkel
Karen Brisbane	C. Eugene Knoder	Scott Russell
Dan Bruce	Deborah D. Kohn	Luis Sabato
Roy Burns	Don Lindburg	David Schmalz
Sherman Camp	Anna-Marie Lyles	Vivian Seal
Fernando Capela e Silva	Diane Maimone	Ken Seiferth
Mark Cartland	A Manning	Teruko Shimizu
Paolo Cavicchio	Herve Maranda	Clio Skreeton
Ferdinando Ciani	Metro Portland Zoo	Teri Sorenson
David Clawson	Stuart A. Meyers	Stephen Standley
John E. Cooper	Sue Mikota-Wells	Scott Swengel
Terrie Correll	Brian Miller	Rodrigo Teixeira
Joel Cracraft	Christine Miller	Ann-Maire Trame
Ralph H. Daly	Graham Mitchell	Toshio Tsubota
Edward N. Dayton	Sharon M. Moen	Itaru Uchida
Ken de la Motte	D.(English Nature) Morgan	Tony Vecchio
Mike Dee	Judy Morin	Michel Vely
Jean-Louis Deniaud	Francois Moutou	Karen Wachs
Fatima Dezonne	Steven F. Mullen	Roger Wheeler
Ellen S. Dierenfeld	Kerry A. Muller	Robert Wiese
Julian Duval	Terry J. Mulroney	Michelle Willette-Fraham
Elias Sadall Filho	Koichi Murata	Achim Winkler
Lester E. Fisher	Shiro Nakagawa	Kumiko Yoneda
Edmund Flach	Blagovesta Pashov Nicheva	Helmut Zimmermann

## Registration Information for the 1992 CBSG Annual Meeting

The Annual CBSG Meeting will be held 4-6 September 1992 in Vancouver, British Columbia, Canada. The cost is CAN \$265 for delegates, CAN \$130 for spouses. Registration for the CBSG Annual meeting includes lunches, coffee breaks, a Thursday evening reception, and the CBSG Annual Meeting Briefing Book.

If you are unable to attend the meeting, but desire a Briefing Book, they will be available from the CBSG Office for \$100.00. The CBSG meeting is open to anyone who wishes to attend.

Registration forms for both the CBSG Annual Meeting are available from the CBSG Office, 12101 Johnny Cake Ridge Road, Apple Valley, MN 55124, USA. Telephone: 612-431-9325; Fax 612-432-2757.

The conference hotel is: Hotel Vancouver, 900 West Georgia Street, Vancouver, British Columbia, CANADA V6C 2W6, Telephone: 604-684-3137, Fax: 604-662-1937, Telex: 04-51280.

Conference room rates are: single CAN \$150, twin or double CAN \$170; adding a third person CAN \$25.



Vancouver, British Columbia, Canada

## Agenda for the 1992 CBSG Annual Meeting

The annual meeting of the Captive Breeding Specialist Group will be held 4-6 September in Vancouver, British Columbia, Canada. Following is the agenda for that meeting. Registration information can be found on page 4.

### Thursday, 3 September

P.M. CBSG Steering Committee meeting (closed)  
 Completion of Reptile CAMPs  
 Registration for CBSG Meeting  
 17:30 Reception

### Friday, 4 September

8:00- Registration for CBSG Meeting  
 08:30 Opening: Introductions and Local Arrangements  
 08:45 Agenda Review and Working Groups  
 09:00 Annual CBSG Report  
 09:30 CBSG Finances and Funding (1993-1998)  
 09:45 ISIS Report (Flesness)  
 10:00 Studbooks (Olney)  
 10:30 Genome Banking Models (Tigers and Gaur)  
 11:00 Global Zoo Conservation Strategy (de Boer)  
 11:30 CAMP Overview and CAMP Reports  
 12:30 Lunch  
 13:30 Reconvene and form Working Groups  
 14:00-  
 16:00 Working Groups Sessions:

- Conservation Coordinators (Foose, de Boer)
- Avian (Wylie, Ellis-Joseph)
  - Waterfowl (Hewston)
  - Parrots (Thomsen, Wirth)
  - Penguins (Garland)
- Genome Resource Banking (Wildt, Mitchell)
- Reptiles (McLain, Hudson)
- Invertebrates (Hughes, Morgan)
- Madagascar (Anderson)
- Primates (Stevenson)
- Cranes
- Amphibians (Johnson)
- Indonesia Group (Tilson)
- Felids (Mellen, Wildt)
- Marine Mammal (van den Sande, Andrews)
- Aquarium (Kaufmann)
- Ethiopia (Dixon)

16:00 Reconvene General Session: Working Group Reports

17:00 New Working Groups:

- Behavior
- Tiger GASP
- Cranes (Mirande)
- Phillipines CAMP and FIG
- Newsletter
- Bats

(New Working Groups, continued)

- Equidae
- Cervids
- Systematics (Wayne)
- Rhinos (Reece)
- Antelopes (Sausman)
- Diseases (Wolff)
- Orangutan PHVA and GASP
- Rodents (start CAMPs)

### Saturday, 5 September

08:30 Convene General Meeting

08:45 Regional Reports

- |           |                 |            |
|-----------|-----------------|------------|
| • PAAZAB  | Africa          | Labushagne |
| • AMSP    | Australasia     | Porter     |
| • SZB     | Brazil          | Schschakin |
| • AAMAZOO | Central America | Calvo      |
| • CAZGA   | China           | Shuling    |
| • EEP     | Europe          | Nogge      |
| • SSCJ    | Japan           | Komori     |
| • IESBP   | India           |            |
| • AAZPA   | North America   | Hutchins   |
| • JMSP    | United Kingdom  | Stevenson  |

09:45 Local People and Recovery Programs (Miller)

10:15 Reconvene Working Groups

12:30 Lunch

14:00 General Session - Small Population Biology Studies (Frankham)

14:30 Regional Reports

- Gulf States
- IZSP India
- SSCJ Japan
- SSP North America
- SEAZ Southeast Asia

16:00 Working Group Sessions

### Sunday, 6 September

08:45 Conservation Coordinators Committee Report

09:45 Working Group Reports

10:45 Reconvene Working Groups

14:00 General Session - Final Working Group Reports

16:00 Summary

17:00 Close

19:00 IUDZG Reception

From the 1991 CBSG Annual Meeting,

## Reptile and Amphibian Working Group (RAWG) Report



### Reorganization of Working Group

In recent discussions with Dr. Ulysses Seal (CBSG Chairman), the organization of the CBSG-RAWG was restructured so as to facilitate communications and stimulate further development of group objectives. Toward that end, the working group will now be served by one overall CBSG-RAWG chair and five acting co-chairs that will have direct responsibility for defined taxonomic groups. Four of the five acting co-chairs have tentatively volunteered (pending further definition of duties) and these colleagues include:

**Amphibians** - Bob Johnson (Metropolitan Toronto Zoo). Bob is currently serving as chair of the AAZPA Amphibian Taxon Advisory Group (TAG), SSP Coordinator for the Puerto Rican crested toad, and advisor to the Amphibian Global Decline Task Force.

**Chelonians and Crocodylians** - John Behler (New York Zoological Park). John is currently serving as chair of the IUCN/SSC Tortoise and Freshwater Turtle Specialist Group, chair of the AAZPA Crocodylian TAG, and SSP coordinator for the Chinese alligator.

**Lizards** - Rick Hudson (Fort Worth Zoological Park). Rick is currently serving as chair of the AAZPA Lizard TAG and SSP studbook keeper for the Dumeril's ground boa.

**Snakes** - John McLain (San Antonio Zoological Gardens). John is currently serving as acting chair of the CBSG Reptile and Amphibian Working Group, chair of the AAZPA Snake TAG, and SSP coordinator for the Dumeril's ground boa.

**Tuatara** - no chair yet identified.

It is proposed that these co-chairs coordinate CBSG activities concerning their defined taxa as well as providing regular communications to the chair concerning such activities. Although it may appear that a North American monopoly of chair duties has occurred, these colleagues are serving as acting chairs until such time as the Working Group convenes its first extended meeting (tentatively planned for the 2nd World Congress of Herpetology) and conducts an election of chairs based upon group consensus. Likewise, these acting chairs have volunteered their services and the CBSG-RAWG will benefit from their combined experience with studbook formation, program management, and regional TAG administration.

Proposed duties of the chair include communications with the CBSG office, the maintenance of the CBSG-RAWG administrative database, and serving as editor of a proposed CBSG Reptile and Amphibian Newsletter.

Regional coordinators will serve to: (a) administer their region's TAGs (however defined) and to promote the formulation of conservation programs as needed, (b) serve as chair regional and international meetings as needed, and (c) provide regular communications to the taxon co-chairs and chair for inclusion in reports and/or the proposed Newsletter.

### Taxonomic Action Plans

A primary objective of the CBSG is the formulation, publication, and dissemination of taxonomic Action Plans so as to develop strategic conservation initiatives for taxa that are endangered and threatened in nature. The development of such Action Plans is also considered a training method for enhancing our collective knowledge of captive breeding and *in situ* conservation management. Two such taxonomic Action Plans have recently been published for primates and felids and should be available to CBSG-RAWG members attending the Singapore meeting. The CBSG chairman has suggested that the CBSG-RAWG likewise initiate the development of such plans. The CBSG-RAWG co-chairs have targeted the boa and pythons (Boidae and Pythonidae), and the West Indian rock iguanas (genus *Cyclura*) and monitor lizards (Varanidae), for preliminary Action Plan formulation. The respective co-chairs will forward additional information concerning these projects in the immediate future.

### Regional Action Plans

Another CBSG objective is the development of Regional Action Plans for geographic regions possessing relatively large numbers of endemic plants and animals. Regions initially identified by the CBSG as priorities for regional action plan development include: Madagascar, the West Indies, Vietnam, and the Philippines. Presently, the primary focus concerns the Malagasy fauna and flora, and therefore, it is herein proposed that we complete our contributions to the Madagascar Action Plan prior to initiating work on other such plans. Further details will be forwarded by the chair.

### Proposed CBSG Meeting at World Congress of Herpetology

One of the difficulties of an international consortium such as the CBSG is the establishment of meetings that encourage maximum attendance by group members. Indeed, the primary purpose for the regional rotation of CBSG meeting sites is to provide the maximum opportunity for attendance by the CBSG membership. However, for the herpetologists that comprise the CBSG Reptile and Amphibian Working Group, the costs of international travel in comparison to the benefits of meeting attendance (with respect to herpetology) have limited overall member participation (including the chair). So as to encourage membership participation and the production of maximal benefit, it has been recommended that we conduct a meeting of the CBSG Reptile and Amphibian Working Group at the 2nd World Congress of Herpetology to be held in Adelaide, Australia from 29 December 1993 to 5 January 1994. The potential benefits of conducting a session at this meeting are obvious as the first World Congress delegates represented academic and field biolo-

gists, wildlife agencies, and our colleagues in other IUCN/SSC Specialist Groups. Further details will be forwarded in the immediate future.

### Regional Propagation and Management Programs

In order to provide an overview of taxa designated or suggested for propagation and management programs currently operated and/or developed by regional taxon advisory groups, management teams, or institutions, the chair has compiled a tentative list of these taxa and activities. This list is far from complete and is only limited by the chair's lack of knowledge concerning the conservation initiatives of other regions programs. The membership is requested to provide additional information or revisions of this list. Hopefully, the activation of co-chairs will do much to clarify the status of these programs so that we may ultimately network into international cooperative programs.

### Taxon Designations - Reptiles and Amphibians Regional Propagation and Management Programs

Below is a list of reptile and amphibian taxa that have been designated or recommended for regional propagation and management programs. The regional programs or institutions have been defined and abbreviated as follows:

**AAZPA** - taxon designated or suggested for management by the Taxon Advisory Groups (TAG) and/or Species Survival Plan (SSP) of the American Association of Zoological Parks and Aquariums (North America).

**DGHT** - taxon designated or suggested for management by the Deutsche Gesellschaft für Herpetologie und Terrarienkunde (Germany).

**JWPT** - taxon designated or suggested for management by the Jersey Wildlife Preservation Trust (Institution).

**MFG** - taxon designated or suggested for management by the Madagascar Fauna Captive Propagation Group (Consortium).

**RHMT** - taxon designated or suggested for management by the Regional Herpetological Management Team (Australia and New Zealand).

**RJMG** - taxon designated or suggested for management by the Reptile Joint Management Group (United Kingdom).

1. Endangered and/or threatened taxa that have been designated for captive conservation by regional taxon advisory groups or management teams. Captive programs with activated studbook and population genetic/demographic management objectives. Such taxa currently include:

#### ANURANS

*Peltophyre lemur* (Puerto Rican crested toad) AAZPA

#### CHELONIANS

*Geochelone radiata* (Radiated tortoise) AAZPA

#### CROCODILIANS

*Alligator sinensis* (Chinese alligator) AAZPA  
*Crocodylus moreletii* (Morelet's crocodile) AAZPA  
*Crocodylus siamensis* (Siamese crocodile) AAZPA

#### LIZARDS

*Brachylophus fasciatus* (Fiji Islands banded iguana) AAZPA/  
RHMT  
*Brachylophus vitiensis* (Crested Fiji Islands iguana) AAZPA/  
RHMT

#### SNAKES

*Acrantophis dumerili* (Dumeril's ground boa) AAZPA  
*Epicrates monensis granti* (Virgin Islands tree boa) AAZPA  
*Crotalus durissus unicolor* (Aruba Island rattlesnake) AAZPA

2. Endangered and/or threatened taxa have been designated for captive conservation action by regional taxon advisory groups or management teams. Institutional propagation has been initiated, studbook and management plan under development, and activation of regional program pending. Such taxa currently include:

#### ANURANS

*Dyscophus antongili* (Northern tomato frog) AAZPA  
*Mantela aurantiaca* (Golden mantella frog) AAZPA

#### TUATARA

*Sphenodon punctatus* (Tuatara) RHMT

#### CHELONIANS

*Terrapene coahuila* (Aquatic box turtle) AAZPA  
*Geochelone nigra* (Galapagos tortoise) AAZPA/RHMT  
*Geochelone sulcata* (African spurred tortoise) AAZPA  
*Geochelone yniphora* (Angonoka tortoise) JWPT  
*Malacochersus tornieri* (Pancake tortoise) AAZPA  
*Pseudemys umbrina* (Western swamp turtle) RHMT  
*Podocnemis spp.* (South American river turtles) AAZPA

#### CROCODILIANS

*Paleosuchus palpebrosus* (Dwarf caiman) AAZPA  
*Crocodylus cataphractus* (African slender-snouted crocodile) AAZPA  
*Crocodylus mindorensis* (Philippines crocodile) AAZPA/RHMT  
*Crocodylus rhombifer* (Cuban crocodile) AAZPA  
*Gavialis gangeticus* (Gharial) AAZPA  
*Tomistoma schlegeli* (False gavial) AAZPA

#### LIZARDS

*Cyclura spp.* (West Indian Rock iguanas) AAZPA/RHMT  
*Shinisaurus crocodilurus* (Chinese crocodile lizard) AAZPA/  
RHMT  
*Corucia zebrata* (Soloman Islands giant skink) AAZPA/RHMT  
*Cyclura nubila lewisi* (Grand Cayman rock iguana) AAZPA  
*Phelsuma guentheri* (Round Island day gecko) JWPT

<i>Phelsuma standingi</i> (Standing's day gecko)	AAZPA
<i>Heloderma horridum</i> (Mexican beaded lizard)	AAZPA/RJMG
<i>Heloderma suspectum</i> (Gila monster)	RJMG/RHMT

SNAKES

<i>Casarea dussumieri</i> (Round Island boa)	JWPT
<i>Acrantophis madagascariensis</i> (Madagascar ground boa)	AAZPA/RHMT
<i>Corallus annulatus</i> (Annualted tree boa)	AAZPA
<i>Epicrates subflavus</i> (Jamaican boa)	AAZPA
<i>Sanzinia madagascariensis</i> (Madagascar tree boa)	AAZPA/RHMT
<i>Pituophis melanoleucus ruthveni</i> (Louisiana pine snake)	AAZPA
<i>Pituophis melanoleucus lodingi</i> (Black pine snake)	AAZPA
<i>Ophiophagus hannah</i> (King cobra)	AAZPA
<i>Lachesis muta</i> (Bushmaster)	AAZPA
<i>Bothriechis</i> spp. (Mexico/Central American palm pitvipers)	AAZPA

3. Endangered or threatened taxa and/or those identified as requiring conservation action by regional taxon advisory groups or management teams. These taxa currently require either: (a) the establishment or supplementation of wild stock so as to create a potential breeding nucleus, or (b) further refinement of husbandry and propagation techniques, or (c) organization of a studbook and management plan. These taxa include:

SALAMANDERS

<i>Andrias japonicus</i> (Japanese giant salamander)	RHMT
--	------

ANURANS

<i>Dendrobates azureus</i> (Azure dart poison frog)	AAZPA/RHMT
<i>Madecassophryne truebae</i> (Madagascar microhylid frog)	AAZPA/MFG

CHELONIANS

<i>Carettochelys insculpta</i> (Pig-nosed turtle)	RHMT
<i>Batagur baska</i> (Asian river terrapin)	RHMT
<i>Macrolemys temmincki</i> (Alligator snapping turtle)	AAZPA/RHMT
<i>Dermatemys mawi</i> (Central American river turtle)	AAZPA
<i>Clemmys muhlenbergi</i> (Bog turtle)	AAZPA
<i>Graptemys</i> spp. (Map turtles)	AAZPA
<i>Pseudemys alabamensis</i> (Alabama red-bellied turtle)	AAZPA
<i>Pseudemys rubriventris bangsi</i> (Plymouth red-bellied turtle)	AAZPA
<i>Trachemys decorata</i> (Haitian slider)	AAZPA
<i>Geoemyda spengleri</i> (Black-breasted leaf turtle)	RHMT
<i>Sternotherus depressus</i> (Flattened musk turtle)	AAZPA
<i>Aldabrachelys elephantina</i> (Aldabra tortoise)	RHMT
<i>Pyxis arachnoides</i> (Common spider tortoise)	MFG
<i>Pyxis planicauda</i> (Flat-shelled spider tortoise)	JWPT/MFG
<i>Testudo graeca</i> (Spur-thighed tortoise)	RHMT
<i>Testudo hermanni</i> (Hermann's tortoise)	RHMT

<i>Erymnochelys madagascariensis</i> (Malagasy side-necked turtle)	MFG
--	-----

CROCODILIANS

<i>Melanosuchus niger</i> (Black caiman)	AAZPA
--	-------

LIZARDS

<i>Chlamydosaurus kingii</i> (Fringed lizard)	RHMT
<i>Hydrosaurus pustulatus</i> (Philippines sail-fin lizard)	RHMT
<i>Diploglossus</i> spp. (Galliwasp)	AAZPA
<i>Brookesia</i> spp. (Dwarf chameleons)	MFG
<i>Chamaeleo</i> spp. (Chameleons)	AAZPA
<i>Cordylus giganteus</i> (Sungazer)	AAZPA
<i>Heteropholis</i> spp. (New Zealand geckos)	RHMT
<i>Hoplodactylus</i> spp. (New Zealand geckos)	RHMT
<i>Naultinus</i> spp. (New Zealand geckos)	RHMT
<i>Nephurus</i> spp. (Knob-tailed geckos)	RHMT
<i>Phelsuma serraticauda</i> (Leaf-tailed day gecko)	AAZPA
<i>Rhacodactylus</i> spp. (New Caledonian geckos)	AAZPA
<i>Uroplatus</i> spp. (Madagascar leaf-tailed geckos)	AAZPA
<i>Anolis cuvieri</i> (Cuvier's anole)	AAZPA
<i>Chamaeanolis</i> spp. (Chameleon anoles)	AAZPA
<i>Cychura collei</i> (Jamaican rock iguana)	JWPT
<i>Iguana delicatissima</i> (West Indian iguana)	AAZPA
<i>Phrynosoma</i> spp. (North American horned lizards)	AAZPA
<i>Delma impar</i> (Striped legless lizard)	RHMT
<i>Pseudemoia palfreymani</i> (Pedra Branca skink)	RHMT
<i>Varanus komodoensis</i> (Komodo dragon)	AAZPA
<i>Leiolopisma</i> spp. (New Zealand skinks)	RHMT
<i>Varanus</i> spp. (Australian monitors)	RHMT
<i>Varanus</i> spp. (Asian and Australian monitors)	AAZPA

SNAKES

<i>Aspidites ramsayi</i> (Woma)	RHMT
<i>Calabaria reinhardtii</i> (West African burrowing python)	AAZPA
<i>Chonodropython viridis</i> (Green tree python)	AAZPA/RHMT
<i>Morelia boeleni</i> (Boelen's python)	AAZPA
<i>Python anchietae</i> (Angolan dwarf python)	AAZPA
<i>Python reticulatus</i> (Reticulated python)	AAZPA
<i>Python sebae</i> (African rock python)	AAZPA
<i>Python molurus molurus</i> (Indian python)	AAZPA
<i>Boa constrictor occidentalis</i> (Argentine boa constrictor)	AAZPA
<i>Corallus caninus</i> (Emerald tree boa)	AAZPA
<i>Epicrates</i> spp. (West Indian boas)	AAZPA
<i>Eunectes murinus</i> (Green anaconda)	AAZPA
<i>Alsophis</i> spp. (West Indian racers)	AAZPA
<i>Drymarchon corais couperi</i> (Eastern indigo snake)	AAZPA
<i>Thamnophis s. tetrataenia</i> (San Francisco garter snake)	AAZPA
<i>Hoplocephalus bungaroides</i> (Broad-headed snake)	RHMT
<i>Naja oxiana</i> (Central Asian cobra)	RHMT/AAZPA
<i>Pseudechis papuanus</i>	RHMT
<i>Bitis gabonica</i> (Gaboon viper)	AAZPA
<i>Vipera bornmeuelleri</i> (Bornmueller's viper)	AAZPA
<i>Vipera latifii</i> (Lar Valley viper)	AAZPA



<i>Vipera wagneri</i> (Wagner's viper)	AAZPA
<i>Crotalus adamanteus</i> (Eastern diamondback rattlesnake)	AAZPA/RHMT
<i>Crotalus willardi</i> (Ridge-nose rattlesnake)	AAZPA
<i>Crotalus spp.</i> (Mexican endemic rattlesnakes)	AAZPA
<i>Trimeresurus spp.</i> (Asian rainforest pitvipers)	RHMT

4. Taxa known from few contemporary records (known from only type series or few localities) and/or those poorly known biologically. Such taxa require active surveys and studies so as to confirm taxonomic identity or continued existence of viable populations. Taxa include:

<i>Bufo perigrines</i> (Golden toad)	AAZPA
<i>Geochelone platynota</i> (Burmese starred tortoise)	CBSG
<i>Phelsuma edwardnewtoni</i> (Mauritius day gecko)	CBSG
<i>Anolis roosevelti</i> (Culebra Island giant anole)	AAZPA
<i>Macroscincus coctaei</i> (Cape Verde giant skink)	CBSG
<i>Tribolonotus novaeguinea</i> (Casque-headed skink)	RHMT
<i>Bolyeria multocarinata</i> (Round Island boa)	JWPT
<i>Morelia carinata</i> (Keeled python)	RHMT
<i>Xenoboa cropani</i> (Cropan's boa)	AAZPA
<i>Neelaps spp.</i> (Black-naped snake)	RHMT
<i>Ogmodon vitianus</i> (Fiji snake - Bolo)	AAZPA

5. Taxonomic families requiring conservation action that are poorly known biologically (particularly amphibians) may well represent thousands of species. Therefore, with respect to preserving biodiversity, the conservation of monotypic and/or relict families with limited distributions should be considered a priority. The captive management of many of these taxa has proven problematic to the captive breeding community, and intensified research should be directed toward their captive husbandry and propagation. Each regional TAG should attempt to develop such research programs within their sphere of operations. Such taxa include the:

Gymnophiona	(Caecilians)
Amphiumidae	(Amphiuma salamanders)
Cryptobranchidae	(Giant salamanders)
Dicamptodontidae	(Pacific mole salamanders)
Sirenidae	(Siren salamanders)
Brachycephalidae	(Gold frogs)
Heleophrynidae	(Ghost frogs)
Leiopelmatidae	(Tailed frog/New Zealand frogs)
Pelodytidae	(Caucasus frogs)
Rhinodermatidae	(Mouth-brooding frogs)
Rhinophrynidae	(Burrowing toad)
Sooglossidae	(Seychelles frog)
Carettochelyidae	(Pig-nosed turtle)
Dermatemyidae	(Central American river turtle)
Platysternidae	(Big-headed turtle)
Amphisbaenia	(Worm lizards or ringed "lizards")
Dibamidae	(Blind lizards)

Helodermatidae	(Beaded lizards)
Lanthanotidae	(Bornean earless monitor)
Pygopodidae	(Snake lizards)
Xantusiidae	(Night lizards)
Xenosauridae	(Xenosaur lizards)
Acrochordidae	(Elephant trunk or wart snakes)
Aniliidae	(Neotropical pipe snake)
Bolyeriidae	(Round Island boas)
Loxocemidae	(Mexican sunbeam snake)
Tropidopheidae	(Neotropical dwarf boas)
Uropeltidae	(Asian shield-tail snakes)
Xenopeltidae	(Asian sunbeam snake)

This report was submitted by John McLain, Acting Chair, San Antonio Zoological Gardens and Aquarium

## Annual CBSG Meeting & Reptile CAMP

The Annual CBSG Meeting will be held 4-6 September 1992 in Vancouver, Canada. A Reptile CAMP will precede the Annual Meeting (see separate announcement). Both meetings are open to interested parties.

The registration cost for the Reptile CAMP is US \$110 and includes lunches, coffee breaks, a Thursday evening reception, plus the briefing materials for the meeting.

If you wish to attend the CBSG Annual meeting as well, the cost is CAN \$265 for delegates, CAN \$130 for spouses. Registration for the CBSG Annual meeting includes lunches, coffee breaks, a Thursday evening reception, and the CBSG Annual Meeting Briefing Book. If you are unable to attend the meeting, but desire a Briefing Book, they will be available from the CBSG Office for \$100.00.

Registration forms for both the Reptile CAMP and the CBSG Annual Meeting are available from the CBSG Office (fax 612-432-2757).

The conference hotel is: Hotel Vancouver, 900 West Georgia Street, Vancouver, British Columbia, CANADA V6C 2W6, Telephone: 604-684-3137, Fax: 604-662-1937, Telex: 04-51280. Conference room rates are: single \$150, twin or double \$170; adding a third person \$25 (all prices in Canadian funds).



From the 1991 CBSG Annual Meeting,

## Antelope Working Group Report

The following issues were discussed and actions were taken at the CBSG meeting in Singapore on 29 September 1991:

### Points Discussed

- There is a need to continue to develop a Global Captive Action Plan (GCAP) or antelopes which mirrors the Antelope Specialist Group (ASG) survey and action plan.
- The format of the draft primate captive action plan and the cervid captive action plan was reviewed.
- There is a need to support the work of the duiker working group and incorporate their recommendations into the general antelope plan.
- There is a need to develop an Arabian peninsula working group to survey the wild and captive populations of gazelles in that region and to promote active cooperation for the conservation of indigenous species.
- There is a need to support continuing research into the various taxonomic questions surrounding several species of gazelles and duikers.
- There is a need to support efforts to fully identify to the subspecific level, if possible, of the gazelles and antelopes currently held in captivity.
- There is a need to develop a proposal concerning the captive propagation of giant sable antelope.

### Actions Taken

- Organized two workshops to formulate a Conservation Assessment and Management Plan (CAMP) on which a Global Captive Action Plan can be based to have a working draft completed by 1 September 1992.
- Decided to hold the first workshop in the USA on 3-5 January 1992.
- Decided to hold the second workshop in Africa in June in conjunction with the PanAfrican Zoological Gardens meeting in Harare, Zimbabwe in June, 1992 (subsequently relocated to Lichtenburg, SA).
- Develop survey materials to be sent out prior to these workshops to all who are willing to assist in the development of the action plan regardless of whether or not they can attend the meetings.
- Support the proposal from the Antelope Specialist Group and the National Zoo of South Africa to develop an *in situ* and *ex situ* conservation and breeding program for giant sable antelope with Angola.
- Support the proposals put forth in the excellent duiker action plan prepared by Mr. & Mrs. Viv Wilson and the duiker working group.
- Encourage the continuing efforts of several members to gather information on the taxonomic questions facing the group.

- Support the development of an Arabian Peninsula Captive Breeding Group to promote active cooperation between the different zoos and captive breeding programs within the Gulf area in order to promote the conservation of indigenous species.

An antelope CAMP document has been compiled as a result of the two workshops mentioned above.

*This report was submitted by Karen A. Sausman, Living Desert.*

From the 1991 CBSG Annual Meeting,

## Giant Panda Working Group

Resolution for adoption by CBSG and IUDZG

We urge:

1) That the timely development of a comprehensive global *in-situ* and *ex-situ* management plan for the giant panda is of highest priority for the conservation of the species.

2) That the revised 1989 Management Plan of the Giant Panda be officially adopted and implemented by the MOF of the PRC.

3) That facilities currently holding giant pandas outside of the PRC cooperate to manage the individuals for maximum genetic diversity and breeding success.

4) That management of captive giant pandas for breeding purposes and transfers between institutions be consistent with the objectives of international con-

servation plans indicated above, and that the parties involved recognize the special professional obligation to act in accord with a coordinated international captive management program for the species.



### Dear CBSG News Readers...

Because of budget constraints, CBSG has limited production and distribution of this issue of CBSG News to CBSG members and CBSG donors of \$25.00 or more.

Also, the next issue of CBSG News will be dedicated mostly to reports emanating from the 1992 CBSG Annual Meeting in Vancouver. The deadline for this next issue is 1 October 1992.



## Global Captive Action Plan for Rhino



The first draft of a Global Captive Action Plan (GCAP) for Rhino was formulated in a workshop conducted in the meeting rooms of the Zoological Society of London 9-10 May 1992. Participants included the International and Regional Studbook Keepers and most of the Regional Species Coordinators for each of the rhino taxa, African and Asian. Also participating were the chairs of the African and Asian Rhino Specialist Groups as well as a few of their other members.

As discussed in earlier issues of CBSG NEWS, GCAPs are actually one product of a broader process known as Conservation Assessment and Management Plans (CAMPs). The GCAP specifically relates the CAMP process to the captive community. GCAPs recommend what the captive community could and should attempt to contribute to the intensive management needs of the threatened taxa.

At maximum, there are 12 or 13 (if *Dicerorhinus sumatrensis lasiotis* still survives) distinct taxa of rhino that may deserve conservation efforts as separate units. All 13 taxa are threatened with extinction. In terms the new Mace-Lande (1991) categories and criteria: eight are critical, four are endangered, one is vulnerable. There are an estimated 11,640 rhino surviving in the wild: 8991 African and 2650 Asian as indicated in the table below. Thus 77% of the surviving wild rhino are African, indeed 48 % (almost half) are southern white rhino. Twenty-three percent of the surviving wild rhino are Asian. The surviving wild rhino occupy 40 major protected areas: 20 African and 20 Asian. A conservative estimate of the operating budgets for these protected areas is US \$ 20,000,000.

Eight of the 13 taxa are present in captivity. There are an estimated 928 rhino in captivity: 785 African and 143 Asian. Thus, captive specimens represent about 7.5% of the surviving rhino on the planet. Combining wild and captive, there are an estimated 12,569 rhino on the planet. At least 290 captive facilities worldwide maintain specimens of at least one taxon of rhino; 266 facilities maintain African rhino and 52 maintain Asian rhino. At least 200 of the captive facilities for rhino are in "hard currency" countries and have combined annual operating budgets of US \$ 1,000,000,000.

The Rhino GCAP provides a strategic overview and framework for effective and efficient application and allocation of captive resources to rhino conservation. The GCAP includes goals, objectives, and recommendations for both *ex situ* and *in situ* rhino conservation activities by zoos worldwide. In terms of goals, the GCAP: 1) affirms that the paramount purpose of captive programs for rhino conservation is the survival and recovery of all distinct taxa in the wild and 2) recognizes that zoos can contribute to rhino conservation by:

a. Developing, maintaining, and using captive breeding programs to provide a genetic and demographic reserve to re-establish or revitalize wild populations when the need and opportunity occurs.

b. Conducting problem-oriented research that will contribute

to management of rhino in both captivity and the wild; collaborating on such research where appropriate with field researchers; and communicating and transferring the results of such research to managers of other captive and wild populations.

c. Providing, where possible financial, as well as technical support for *in situ* conservation.

A primary focus of the Rhino GCAP is on captive propagation programs that can serve as genetic and demographic reservoirs to support survival and recovery of wild populations in the future. Captive programs are recommended for seven taxa of rhino: Eastern Black (*Diceros bicornis michaeli*), Southern Black (*Diceros bicornis minor*), Southern White (*Ceratotherium simum simum*), Indian/Nepali (*Rhinoceros unicornis*), and three geographical varieties of Sumatran Rhino (*Dicerorhinus sumatrensis*) (representing the populations on Sumatra, Borneo, and in Peninsular Malaysia). Other taxa (e.g. *Rhinoceros sondaicus*, the Javan) will be considered for captive breeding at the request and recommendation of the SSC Specialist Groups in the future if the situation in the wild dictates and in captivity (space, husbandry) permits.

Where captive programs are recommended by CAMPs and GCAPs, there is an attempt to propose the level of captive programs required. The level of captive program is defined by its genetic and demographic objectives which translate into a target population size (i.e., how many to ultimately maintain) that will be required to achieve these objectives. Target population depends on a number of factors:

- level of demographic security
- kind and amount of genetic diversity
- period of time
- size of the wild population
- size of other captive populations of similar species
- reproductive technology available

Target population objectives at both the global and regional level are recommended, as indicated in the table below. The targets are based in part on the objective of preserving 90% of the gene diversity of the wild population for 100 years.

In addition to the full captive propagation programs for seven rhino taxa, a last, crash effort is recommended to attempt to develop a successful breeding program with the Northern White Rhino (*Ceratotherium simum cottoni*) in captivity. If this effort does succeed, the GCAP will probably adjust its recommendation concerning the level of captive program for this taxon. The Plan also identifies a need to expand the capacity of captive facilities by 46% (from 928 to 1355 rhino spaces) to accommodate these target populations. Much of the existing space will need to be reallocated with a 50% recommended reduction in the captive population of Southern White Rhino.

The GCAP also recommends improvements in demographic and genetic management to enable captive populations to achieve their conservation objectives. The rates of growth of rhino populations in captivity are lower than in adequately protected

areas of the wild. However, rates of growth are improving and need to be enhanced. The potential genetic foundation for four of the eight taxa in captivity is good and the amount of the wild gene pool that can still be retained is high (> 90 %). The genetic foundation of the three Sumatran taxa needs to be reinforced. The genetic foundation of the Northern White Rhino population is limited but additional reinforcement is not advisable at this time. The distribution of genetic diversity is uneven among the Regional programs.

The GCAP delineates and prioritizes research in terms of conservation need. Three areas are critical for conservation programs for rhino:

1. Genetic studies to clarify taxonomic status of "subspecies", i.e. geographically-defined populations;
2. Veterinary and husbandry investigations to ameliorate the disease syndrome that afflicts the Black, and possibly other browsing rhino in captivity and probably in the wild.
3. Development of effective methods of assisted reproduction, especially with the objective of using these techniques to expand more rapidly the populations of the taxa in desperately low numbers, e.g. Northern Whites and perhaps eventually Javan.

The GCAP recommends establishment of a research collection of White Rhino (100 total) in both North America (50) and in Europe/UK (50) at a site determined by the Regional Coordinators.

While captive propagation and conservation research programs are emphasized in the GCAPs, the Plans also attempt to identify where and how the captive community can assist with transfer of intensive management information and technology and to develop priorities for the limited financial support the captive community can provide for *in situ* conservation (e.g., Adopt-A-Park programs). The GCAP presents a challenge to the zoos with rhino in the world to try to contribute up to US \$1,000,000 to support *in situ* conservation, especially through adopt-a-park programs. The Plan prioritizes *in situ* protected areas, important populations, and significant projects for financial and technical support by zoos. Further the GCAP proposes a plan for Regional responsibilities for financial support of *in situ* conservation.

Distributed over the 200 "hard currency" rhino institutions, a contribution of US \$ 1,000,000 averages \$5,000/institution. From another perspective, this level of contribution represents just a little over \$1,000 per rhino currently maintained in the zoos of the world. It will represent \$ 740 per rhino once captive target populations are attained. It has been estimated that the annual cost of protecting and managing minimally viable populations of rhino in the wild is about \$20,000,000/year. The level of support proposed for zoos is thus only about 5%, but if effectively applied could be very catalytic and crucial support. A number of institutions are already contributing to *in situ* rhino conservation at or above this level.

### Global and Regional Current and Target

Rhino Taxon	WORLD			AFRICA		ASIA	
	Wild Pop	Captive Pop	Captive Trgt	Captive Pop	Target Pop	Captive Pop	Target Pop
Eastern Black	600	163	200	5	5	35	40
Southern Black	2,300	42	175	4	15	2?	0
Southwestern Black	400	0	0	0	0	0	0
North & West Black	<100	0	0	0	0	0	0
Northern White	31	10	?	0	?	0	0
Southern White	5,560	570	200	24	0	150	0
			+ 100 research				
Indian/Nepali	1,700	120	230	0	0	45	78
Javan (Java)	< 75	0	?	0	0	0	?
Javan (Vietnam)	< 25	0	?	0	0	0	?
Mainland Sumatran	150	8	150	0	0	8	50
Sumatran Sumatran	600	13	150	0	0	7	50
Borneo Sumatran	100	2	150	0	0	3	50
<b>African Rhino</b>	<b>8,991</b>	<b>785</b>	<b>675</b>	<b>33</b>	<b>20</b>	<b>189</b>	<b>40</b>
<b>Asian Rhino</b>	<b>2,650</b>	<b>143</b>	<b>680</b>	<b>0</b>	<b>0</b>	<b>63</b>	<b>228</b>
<b>All Rhino Taxa</b>	<b>11,641</b>	<b>928</b>	<b>1355</b>	<b>25</b>	<b>20</b>	<b>252</b>	<b>268</b>

# ISIS NEWS



Newsletter of the International Species Information System

Vol. 2, No. 2

## ISIS CENTRAL SERVICES - MAJOR CHANGES ON 1 JULY

All central database services offered by ISIS have changed significantly as of 1 July 1992. On this date our long-running "ISIS 2" system, designed in 1980, was terminated because the University mainframe, which we have been using for ISIS 2, had been eliminated. ISIS is now formally operating "ISIS 3", a profoundly more powerful database, running for the first time from the ISIS offices, on a powerful desktop computer.

This new (ISIS 3) system closely resembles a set of over 4,200 (partial) studbooks - in the way it functions and the way ISIS can use it to improve services to members. This new ISIS central system will start operations by providing the services listed below - as these have been developed and are ready to run. Other new services will be added over the coming months and next few years.

### Services currently available from ISIS 3

- Edit/Update Reports

These have been rewritten, to better "link" specimen records, to emphasize apparent data problems and to communicate inconsistencies between facts reported by successive holders of the same specimen. They are now written with the intent of being intelligible by someone who does not necessarily know ISIS' internal codes (i.e. has not filled in ISIS paper records forms).

- Abstracts

These have been rewritten, to provide more information and to alphabetize facility abbreviation within region.

- SPARKS dataset extract

Rewritten to be much faster for ISIS to generate (will help us keep up with the high volume of requests), and to be better-linked as a consequence of the new system logic. To order a dataset contact ISIS and ask for a "SPARKS Dataset Request Form" -- we will be happy to fax this to you.

- Specimen Report

ISIS is able to retrieve on request the ISIS-known history of any of the 600,000 specimens recorded at ISIS.

- Specimen Pedigree

Like the Specimen Report, ISIS is able to retrieve on request the ISIS-known pedigree of any of the 600,000 specimens recorded at ISIS.

### Services Under Development

- ISIS TAG Report

A summary of captive status for a selected group of taxa. With partial grant funding from AAZPA, ISIS is developing this new report - planning to offer this service on 1 January 1993.

- Archive/reference Product

At this time ISIS is considering a new archive/reference product, possibly on CD-ROM, to replace and considerably improve on ISIS' old microfiche.

- Studbook keepers update

Also under consideration is a system to automatically update all studbook keepers from data available to ISIS. As soon as programmer time permits, this could be a reality.



## Not available from ISIS 3

- **ISIS SDR microfiche**

This increasingly antiquated report is no longer widely used and the information it offers is being replaced by a combination of Specimen Reports and the TAG Report being developed.

We expect that other new services will be developed from the exciting new base that ISIS 3 provides. As we gain some experience with operating the database at the ISIS offices for the first time, and being able to utilize powerful new relational database tools to develop new services, we will be able to plan accordingly.

## Tips, Techniques, and Notes

### ARKS

ARKS 3 Alert - The users of ARKS 2.xx who have written or are using programs that rely on the ARKS 2.xx data structures should be aware that ARKS 3 is a completely new product. The data structures that your programs require have been significantly enhanced in ARKS 3.

We have attempted to address many of the needs within ARKS 3 that prompted the creation of stand alone, peripheral ARKS 2.xx programs, but this does not alter the fact that your favorite reporting software WILL NOT RUN without significant modification. We will devote some staff time to internalizing or converting the most popular of the peripheral programs after ARKS 3 has been distributed.

### MedARKS

- **MedARKS Training Video**

The MedARKS Training Video, a basic introduction to the technical and practical use of MedARKS, is now available in limited quantity. This video is a training tape targeted at the beginning MedARKS user. The training video has been made possible by the American Association of Zoo Veterinarians, Louisville Zoo, WKPC-TV Louisville, KY, the Zoological Society of Milwaukee and ISIS.

The videos are available to MedARKS users on a first come first serve basis. To obtain a MedARKS Training Video, please send a written request to:

Ms. Cyd Shields Mayer  
MedARKS Training Video  
ISIS/Zoological Society of Milwaukee  
10005 West Bluemound Road  
Milwaukee, WI 53226

- **Error 026 - Error Writing File**

For those institutions who have experienced this error (not covered in the manual) it is almost always a sign that your computer is out of hard disk space. Error 026 has been seen with increased frequency since the distribution of the ISIS Physiological Normals which uses a sizable amount of hard drive space.

If you see this error, you must delete files from your hard disk to make space. Often hard disks are cluttered with old files or programs which are not even used. This becomes a perfect time for house cleaning.

The installation procedure for the Physiological Normals allows you to select which normals should be included. If you are running short of hard disk space, DO NOT select the ALL NORMALS option. This option will give you every Physiological Normal Value which ISIS has collected. While this may appear to be a valuable option, the data will take up a large amount of disk space and you will never need to access that data for most of the species. If a new species is added to the collection, have no fear. Simply rerun the installation procedure and the Physiological Normals for the new species will be included.

The other installation option will allow "slimming" of the file to only those species which you currently have in your collection, or which you have historically had in your collection.

If you see this error and you have already installed the "Slimmer" Physiological Normals, you simply need to clean house. If your hard disk is already clean . . . time to think about a new BIGGER hard drive.

- **Do You Have Problems Deferring Print?**

If you select the defer print option in MedARKS (or it is selected automatically for you) and it never prints, chances are you are using a front end menu from which you enter MedARKS. If to start MedARKS you are selecting it from a menu and are unable to defer the printing (and often not able to use the backup utility as well); make sure that the menu program calls MedARKS from the MedARKS.BAT file, and not CMEDARKS.EXE. The batch file is where the commands for the defer print and the backup utility are located. By calling CMEDARKS.EXE, those commands are skipped. If your menu program does not allow you to call BAT files, simply type MedARKS from the C> (or D>) drive and chances are your deferred print will work just fine.



**SPARKS**

- New version is now available

ISIS is shipping a new version of SPARKS (version 1.11). This new version corrects a significant problem in calculating Lambda when a view is set. In addition to this fix, SPARKS also has a new Masterplan Report and is being distributed with new versions of GENES and DEMOG. The new versions of GENES and DEMOG interact closely with the new Masterplan Report to provide kinship values, mean kinship, and reproductive values.

- Running short of memory?

The SPARKS program needs approximately 585,000 bytes of conventional memory to run all areas of the program. The error message "Program too big to fit in memory" usually occurs when your machine is running at 570,000 bytes or lower. [NOTE: SPARKS will run with less than 570,000 bytes UNTIL you try to do a backup. That is when the extra 15,000 to 20,000 bytes are needed.]

When you experience this problem there are a few things that you can do:

- 1) Since this problem usually occurs when trying to do a SPARKS backup or restore, you can do the SPARKS backup and restore procedures manually.

From the DOS prompt in the \SPARKS directory copy the files BACK.PRG and RESTORE.PRG to BACK.BAT and RESTORE.BAT respectively. Then from the \SPARKS directory you would type the following commands to do either a backup or restore respectively:

```
BACK h: {sparks directory} {studbook name} f
RESTORE f {sparks directory} {studbook name}
```

*h* is the hard drive      *f* is the floppy drive

- 2) If you run short on memory while trying to do something other than a SPARKS backup or restore, then you will want to try and increase the amount of available conventional memory that your computer has. You can do this by either not loading programs that use conventional memory (mouse driver, virus checking software, etc.) or by loading these types of programs into upper memory with a memory manager, like MS DOS 5.0, QEMM 6.02, 386MAX, etc. For more information on memory managers and freeing conventional memory on your computer, please contact your local computer dealer.

**Miscellaneous**

- Notes for 486 computer users

Those of you operating ISIS software (ARKS, SPARKS) on 486 computers, or planning to do so, should be aware of a couple of issues. First, your old ISIS software will not necessarily run properly when moved to a 486. If you experience difficulties, contact Mike Kelly at ISIS, and we will ship you a version which solves the problem in most cases.

Second, the speed of these machines, while wonderful, can occasionally be a problem. Some older software programs can not operate at the speeds of a 486. If you experience this problem you have two options, 1) slow down the 486, which defeats its purpose, or 2) upgrade your software, which should benefit you in many ways.

Whatever the case, do not let these minor issues deter you from purchasing a 486 machine because in the future, these machines will be excellent for ISIS-software purposes, as we are moving all software development to the FOXPRO dialect which has no difficulties with these machines.

- Range-government owned specimens

A number of species are now being managed under international agreements which place formal ownership with the range country or one of its agencies - i.e. IBAMA of Brazil for the Golden lion tamarin. These arrangements may be highly desirable, but there are a number of records (ARKS and ISIS) consequences:

- If the specimen is on loan from a government it cannot also be on loan from a zoo.

- If the specimen is on loan from a government it must move between zoos by removals = "Loan transfer" and acquisitions = "Loan In".

**Position Opening**

Population Biologist / Programmer for ISIS

ISIS is seeking applicants for a new staff position. The position will have primary responsibility for maintenance and development of ISIS' studbook / species management software, "SPARKS". The ideal candidate would have an advanced degree in population biology, experience and enthusiasm for high-quality programming in the FOXPRO and C languages, and an understanding of the application of current population biology to the intensive conservation-oriented management of small populations. Development efforts



will be in collaboration with others. Recognizing that this is a potentially rare combination of skills, ISIS will provide training opportunities. The position will be located at ISIS' headquarters near Minneapolis/St. Paul, and will pay competitively. Please submit resume to ISIS.



**THANK YOU**

We would like to convey our appreciation and give a special thank you to the Washington Zoological Park for their *sponsorship* donation of \$1,000.00.

**Old paper data forms . . .**

For those institutions that joined ISIS entering their data on paper inventory data forms and are now using the ARKS software - help! We are running out of storage space for those old forms and would like to recycle them. If you want your institution's old ISIS Inventory Data forms please contact Kim Hastings, (voice) (612)431-9295 or (fax) (612)432-2757, before 1 October 1992.

**New Members**

ISIS would like to take this opportunity to welcome our new members that have joined since January 1992. This list contains those members that have joined between 1 January 1992 and 1 July 1992.

<u>INSTCODE</u>	<u>MNEMONIC</u>	<u>INSTITUTION NAME</u>	<u>COUNTRY</u>
111007001	HALLE	Zoologischer Garten Halle	Germany
111409001	DEBRECEN	Debrecen Zoo	Hungary
120209009	SHALDON	Shaldon Wildlife Trust	United Kingdom
120233001	CHARD	Cricket Westcountry Wildlife Pk	England
120245003	LEEDS	Harewood Bird Garden	United Kingdom
310102001	BERMUDA	Bermuda Aquarium Museum and Zoo	Bermuda
310202004	KAMLOOPS	Kamloops Wildlife Park	Canada
310204002	ST JOHN	Cherry Brook Zoo, Inc.	Canada
310208015	PETERSBOR	Riverview Park & Zoo	Canada
310503008	SAIHATI	Saihati Camel Farm	
310510061	PANAMACTY	ZooWorld	
310510914	LOXAHATCH	Rare Species Conservatory	
310523350	FERNDALE	International Animal Exchange, Inc.	
310528407	U NEB B	Callitrichid Research Center	
310531014	CAMDEN	New Jersey Academy of Aquatic Scs.	
310533046	TREVOR	Trevor Zoo	
310538013	NEWPORTAQ	Oregon Coast Aquarium	
310539010	NORRISTOW	Elmwood Pk Zoo-Norristwn Zool. Soc.	
310542007	WATERTNSD	Bramble Park Zoo	
310543013	CHATTANOO	Tennessee Aquarium	
310548012	ISSAQUAH	Washington Zoological Park	
421001901	NWRC TAIF	Taif-Nat'l Wildlife Res. Center	Saudi Arabia
430802001	HYDERABAD	Nehru Zoological Park	India
440123900	WOLONG	Wolong Nature Reserve	China
440339002	TOKYOTAMA	Tama Zoological Park	Japan
440339003	TOKYOUENO	Ueno Zoological Gardens	Japan
440339008	SEALIFEPK	Tokyo Sea Life Park	Japan
440339901	VETRESCUE	Wild Life Rescue Veterinarian Assoc.	Japan
510304005	CURRUMBIN	Currumbin Sanctuary	Australia
520109901	DEPTCONSV	Threatened Species Unit	New Zealand



Specifically, to initiate the program, it is proposed to:

1. Attempt to secure \$250,000/year for "Adopt-A-Park" programs (\$25,000 each) for an additional 10 high-priority protected areas for Asian rhino.

2. Attempt to secure \$250,000/year for "Adopt-A-Park" programs (\$25,000 each) for an additional 10 high-priority protected areas for African rhino.

The GCAP also proposes that zoos with rhinos attempt to support the activities of the two SSC Rhino Specialist Groups (African and Asian).

This initial draft of the Rhino GCAP is the first step in a continuing process to develop a truly global effort by zoos in rhino conservation through facilitation and coordination of interactions among the various Regional programs. GCAPs are developed by a Global Action Plan Working Group which includes representatives from each of the Regional Captive Programs. The GCAPs provide a strategic framework within which the Taxon Advisory Groups (TAGs) in the various organized Regions (ASMP, EEP, SSP, SSCJ) of the zoo and aquarium world will formulate and implement their own Strategic Regional Collection Plans. In reality, iterative Global and the Regional Plans are being interactively developed. The Regional TAGs are integrally involved in the development of the Global Captive Action Plans.

The Regional TAGs then consider the first draft of a GCAP within a regional context to develop a draft of a Regional

Collection Plan (RCP). Once the draft of the Regional Priorities is formulated, the GCAP process continues as the RCPs of various regions are reviewed at the global level in an attempt to coordinate and, where necessary and agreeable, adjust Regional priorities in an attempt to maximize effectiveness of the international captive community in responding to conservation needs. The GCAP and RCP process are thus both interactive and iterative. In this way, RCPs of the various Regions will not develop in isolation from one another and captive resources can be allocated efficiently and effectively to taxa in need.

Ultimately, the GCAPs recommend how responsibilities for captive programs might best be distributed among organized Regions of the global captive community. Further, these Global Captive Action Plan Working Groups also facilitate interaction and coordination among Regional TAGs as they develop their Regional Collection Plans and Regional Breeding Programs in an attempt to optimize use of captive space and resources for conservation on an international basis.

It is through the Regional Collection Plans and the Regional Breeding Programs developed thereunder that the recommendations of the Global Captive Action Plans will be realized. However, to maximize the efficiency and effectiveness of captive resources, Regional Programs will need to be integrated and coordinated to form global programs, i.e. Global Animal Survival Plans (GASPs).

Any and all taxa that are maintained in captivity should be

### Populations for Rhino in Captivity

AUSTRALASIA		EUROPE		N. AMERICA		C.&S. AMERICA	
Captive Pop	Target Pop	Captive Pop	Target Pop	Captive Pop	Target Pop	Captive Pop	Target Pop
2	0	55	65	67	90	6	?
0	80	6	0	30	80	0	?
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	6	?	4	?	0	0
14	60	210	70	132	70	40	?
			+ 50 research		+ 50 research		
0	0	32	76	40	76	1	?
0	0	0	0	0	0	0	?
0	0	0	0	0	0	0	?
0	0	0	100	0	0	0	?
0	0	2	0	6	100	0	0
0	100	0	0	0	0	0	0
<b>16</b>	<b>140</b>	<b>266</b>	<b>185</b>	<b>233</b>	<b>290</b>	<b>46</b>	<b>?</b>
<b>0</b>	<b>100</b>	<b>34</b>	<b>176</b>	<b>46</b>	<b>176</b>	<b>1</b>	<b>?</b>
<b>16</b>	<b>240</b>	<b>300</b>	<b>361</b>	<b>279</b>	<b>466</b>	<b>47</b>	<b>?</b>

Rhino...

managed as populations. Therefore, there should be studbooks, coordinators, masterplans, taxon advisory groups, or other management provisions for these taxa. Moreover, animal spaces as well as the animals themselves should be managed. Hence, once taxa are selected for captive propagation, they must be managed by Regional (RCPP) and Global (GASP) Captive Propagation Programs. However, if zoos and aquaria are to respond to the need and aspire to goals such as suggested, it will increasingly need to be more collective, i.e. more through Taxon Advisory Groups rather than individual taxon management and/or propagation committees.

Hence, in the case of the rhinos, a Global Propagation and Management Group has been organized to develop and implement the Global Action Plan which in essence will encompass the GASPs for all taxa being maintained in captivity. Further, realizing that human resources are often the most limited, the Rhino GCAP recommends creation of a paid position to act as chair of this Global Committee. One important responsibility to the Coordinator and Committee will be to formulate a business plan to achieve the goals and objectives of the Global Action Plan, including development of the funding for the GCAP.

*This report was submitted by T.J. Foose, CBSG Executive Officer.*

## GASPs at Last

Over 200 Regional Captive Propagation Programs are now in progress worldwide. However, to maximize the efficiency and effectiveness of captive resources, Regional Programs will need to be integrated and coordinated to form global programs. The name Global Animal Survival Plan (GASP) has been proposed by Bob Lacy to describe these global programs with a term that has a catchy acronym.

There have already been some attempts at developing GASPs. There has been a start with the Przewalski's Horse and good progress is occurring with both the Golden Lion Tamarin and Red Panda. At their 1991 annual meeting in Singapore, the CBSG Regional Conservation Coordinators' Committee strongly recommended that there be a vigorous attempt to develop more GASPs.

A number of Workshops are now on the schedule to organize such global captive propagation programs:

Rhinos	9-10 May 1992 (Occurred)	London, UK
Tigers	9-10 July 1992 (Occurred)	Edinburgh, UK
Red-crowned & Siberian		
Crane	8-14 August 1992	Calgary, Canada
Partula	28 August 1992	London, UK

Orangutan	14-20 January 1993	Medan, Indonesia
Lion-Tailed Macaque	October, 1993	Madras, India

Others being discussed are snow leopard, spectacled bear, Grevy's and Hartmann's zebra, addax, and scimitar-horned oryx

*This report was submitted by T. J. Foose, CBSG Executive Officer*

## IUCN/SSC Deer Specialist Group

The IUCN Deer Specialist group convened an Action Plan meeting on 25-30 August 1991 at the National Zoo's Conservation & Research Center in Front Royal, Virginia. The team of 15 zoologists spent five days compiling information from Species Report forms. These forms which were sent to many universities, conservation agency biologists, and protected-area managers were the basic means of gathering information on the status of wild populations. A draft was completed comprising about 65% of the Action Plan. The Peter Scott IUCN/SSC Action Plan Fund contributed \$5,406.66 to the workshop, and the National Zoo defrayed the costs of accommodation. Other institutional subsidies for transportation amounted to \$2,150.



It was agreed that the Action Plan would also contain recommendations on captive propagation of those species which urgently require intensive management under controlled conditions. The San Diego Zoo has agreed to underwrite a special workshop in the spring of 1992 to address this need. The gathering will bring together members of the AAZPA's Deer Advisory Group, as well as deer and zoo biologists from other parts of the world. It is hoped that

the Action Plan will be completed by the end of summer, 1992.

This Action Planning session identified two species urgently needing Population Viability Analyses (PVA). Brazilian populations of the marsh deer (*Blastoceros dichotomus*) are under severe threat in many areas. Ulie Seal of the CBSG conducted a PVA in Sao Paulo in March, 1992. A similar PVA for pampas deer (*Ozotoceros bezoarticus*) is being planned for late 1992 or early 1993.

*This report was submitted by Chris Wemmer, National Zoological Park, Conservation & Research Center.*

## Conservation Assessment and Management Plans (CAMPs) Progress Report

Conservation Assessment and Management Plans (CAMPs) are being developed within the SSC and ICBP as collaborative programs of the CBSG and the other, taxa-based Specialist Groups. CAMPs are intended to provide strategic guidance on intensive conservation action for threatened taxa. Over the last 18 months, CAMPs have been initiated for a wide spectrum of the vertebrates: parrots, waterfowl, Asian hornbills, marsupials, primates, felids, canids, antelope, and deer. Preliminary results for these CAMPs are presented below (excluding cervids and marsupials where the initial process is still in progress).

The CAMP Workshops have been conducted around the world: parrots and waterfowl in the United Kingdom; Asian hornbills in Singapore; marsupials in Australia; primates, felids, canids, and deer in the United States; antelope in the United States and in South Africa. Review sessions for these CAMPs are being conducted in conjunction regional CBSG meetings in Venezuela, Australia, Japan, the United Kingdom, India, and South Africa. Over 300 persons representing nine taxa-based Specialist and the 12 organized regional captive propagation programs of the zoo world have participated in the initial workshops and review sessions.

The CAMPs are assessing/reassessing the degree of threat for every taxa within the broad taxonomic groups considered (order, family, etc.). The CAMP process is also assigning each taxon to a category (Critical, Endangered, Vulnerable, Safe) by applying the criteria proposed by Mace-Lande. The results so far are:

Assessment of Threat							
	<u>Total Taxa</u>	<u>Critical</u>	<u>Endangered</u>	<u>Vulnerable</u>	<u>Safe</u>	<u>Unknown</u>	<u>Total Threatened</u>
Parrots	428	25	36	78	228	61	139 (32%)
Waterfowl	234	10	24	43	157	0	77 (33%)
Asian Hornbills	52	5	15	24	9		44 (85%)
Primates	512	59	69	93	291		221 (43%)
Felids	264	31	60	104	69		195 (74%)
Canids, Hyaenas	225	8	10	16	191		34 (15%)
Antelope	395	9	21	46	87	232	76 (19%)
<b>Total (%)</b>	<b>2,110</b>	<b>147</b> (7%)	<b>25</b> (11%)	<b>404</b> (19%)	<b>1,032</b> (49%)		<b>786</b> (37%)

Based on these assessments, the CAMP process formulates recommendations for intensive management and information-gathering priorities. These actions include: population and habitat viability analyses (PHVAs), more intensive *in situ* management, captive breeding programs, and conservation-related research:

Intensive Action Recommendations				
	<u>PHVA</u>	<u>More In Situ Management</u>	<u>Captive Research</u>	<u>Breeding</u>
Parrots	125	175	199	169
Waterfowl	92	173	166	150
Asian Hornbills	35	15	50	45
Primates	137	35	192	229
Felids	30	80	120	98
Canids, Hyaenas	14	22	47	33
Antelope	62	111	119	138
<b>Total (%)</b>	<b>495 (26%)</b>	<b>613 (29%)</b>	<b>893 (42%)</b>	<b>862 (41%)</b>

The CAMP process is central to establishment of global priorities for intensive conservation action. CAMPs provide a global framework for intensive management in the wild and in captivity. Wildlife Agencies and Regional Captive Breeding Programs can use the CAMP's as guides as they develop their own action plans.

Especially important derivatives of the CAMP process are the recommendations for captive breeding which form the foundation for development of global captive action plans (GCAPs). A level of captive breeding program is also recommended for those taxa selected for this kind of intensive management action. The level of captive program is defined by genetic and demographic objectives and hence the target population required to achieve these objectives. The levels of captive programs are:

**90/100 I:** Population sufficient to preserve 90% average genetic diversity for 100 years, developed as soon as possible (1-5 years).

**90/100 II:** Population sufficient to preserve 90% average genetic diversity for 100 years, but developed gradually (5-10 years).

**NUC I:** 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 case modest, immigration (importation) of individuals from the wild population to maintain this high level of genetic diversity in such a limited captive population.

**NUC II:** A captive nucleus (25-100) for taxa not of current conservation concern but present in captivity or otherwise of interest; the captive nucleus should be managed as well as possible.

**ELIM:** Eliminate from captivity; the captive population should be managed to extinction.

#### Recommendations for Captive Breeding Programs

Pending	<u>90/100 I</u>	<u>90/100 II</u>	<u>NUC I</u>	<u>NUC II</u>	<u>Research</u>	<u>Total (%)</u>
Parrots	24	7	69	40	30	170 (40%)
Waterfowl	12	32	37	62	7	150 (64%)
Asian Hornbills	5	6	12	13	9	45 (87%)
Primates	77	41	41	70	0	228 (45%)
Felids	25	18	9	46	0	98 (37%)
Canids, Hyaenas	6	0	18	8	0	33 (15%)
Antelope	34	22	19	61	0	138 (35%)
<b>Total (%)</b>	<b>183 (9%)</b>	<b>126 (6%)</b>	<b>204 (10%)</b>	<b>300 (14%)</b>	<b>46 (2%)</b>	<b>862 (41%)</b>

Three major kinds of conservation-related research are identified in the CAMP process to assist taxa under threat: taxonomic clarification, survey work (especially to secure more quantified measures of population and habitat status), and husbandry improvement.

#### Recommended Research

	<u>Taxonomic</u>	<u>Surveys</u>	<u>Husbandry</u>	<u>Total</u>
Parrots	79	214	38	331
Waterfowl	94	150	30	274
Asian Hornbills	36	34	4	50
Primates	135	156	48	192
Felids	101	120	39	120
Canids, Hyaenas	38	45	5	47
Antelope	85	48	50	183
<b>Total</b>	<b>668</b>	<b>767</b>	<b>214</b>	<b>1,197</b>

After compilation at an initial Workshop, draft CAMPs are reviewed: 1) by distribution to 100-200 wildlife managers and regional captive programs worldwide for comment and 2) at regional review sessions at various CBSG meetings and workshops, utilizing local expertise with the taxonomic group in question. The CAMP review process allows extraction of information from experts worldwide. CAMPs are continuously evolving as new information becomes available and as global and regional situations and priorities shift. The current CAMP and GCAP process will continue both by its application to new groups of taxa and the refinement of the ones already under way.

The long-term impact of the CAMP process on global priority setting will be profound. Within the near future, and for the first time, wildlife and zoo animal managers worldwide will have a set of comprehensive documents at their disposal, collaboratively and scientifically developed, which establish priorities for global wild and captive species management and conservation. Ultimately, the CAMP process will facilitate the worldwide allocation of limited resources for species conservation.

*This report was submitted by T.J. Foose and S. Ellis-Joseph, CBSG.*

## Status Report: Desert Fishes SSP

1. The following institutions have agreed to participate in the desert-fishes SSP:

New York Aquarium\*  
 New England Aquarium\*  
 Niagara Falls Aquarium  
 National Aquarium in Baltimore  
 Belle Isle Aquarium\*  
 Shedd Aquarium\*  
 Columbus Zoo Aquarium\*  
 Indianapolis Zoo\*  
 St. Louis Zoo\*  
 Dallas Aquarium\*  
 Fort Worth Zoo Aquarium\*  
 San Antonio Zoo Aquarium\*  
 Arizona/Sonora Desert Museum\*  
 Steinhart Aquarium\*

\* denotes institutions presently displaying or maintaining populations of species extinct in nature, officially designated as endangered or of special concern.

2. The Dallas Aquarium has joined the New York Aquarium in providing support for the Autonomous University of Nuevo Leon's Desert Fishes Breeding Center (DFBC) in Monterrey. Python Products of Milwaukee, Wisconsin USA has joined Tetra Sales (USA) as a corporate benefactor of the DFBC.

3. A formal proposal of collaboration in desert fish conservation efforts between the New York Aquarium and the Autonomous University of Nuevo Leon has been signed. The first shipment of endangered Mexican fishes to foreign participants in the desert fishes SSP was received in March 1991, logistics having been managed with the invaluable assistance the Dallas Aquarium. The New York Aquarium is presently maintaining the two El Potosi endemics; *Cyprinodon alvarezii* and *Megupsilon aporus* and has produced an F<sub>1</sub> of the latter. The Dallas Aquarium concurrently received stocks of *C. nazas* and *C. veronicae*, both of which have bred successfully.

4. In collaboration with the Texas Department of Parks and Wildlife, the Dallas Aquarium has undertaken the captive husbandry of *Cyprinodon eximius*, a highly endangered pupfish native to the Rio Grande-Rio Conchos drainage in Texas and northern Mexico. Dr. Dave Schleser reports that a flourishing F<sub>1</sub> has rewarded their breeding effort.

5. A preliminary survey of extant holdings of *Cyprinodon macularius*, reveals that with two exceptions, all extant aquarium stocks of this pupfish are descended from limited founder stock of uncertain provenance bred successfully by Doug Sweet at the Belle Isle Aquarium. The New England Aquarium is maintain-

ing *C. m. macularius* descended from founder stock held under culture at the U.S.F.W.S. facility at Dexter, New Mexico, USA, while the Arizona/Sonora Desert Museum exhibits and breeds the Quitobaquito pupfish, *C. m. eremius*. After consulting with Dr. Anthony Echelle, the leading authority on the population genetics, of *C. macularius*, I am recommending the following steps be taken with regard to aquarium management of this species:

a. All pupfish descended from the Belle Isle population of *C. macularius* should be dropped from the desert fishes SSP. Extant stocks have substantial value as research material and should be held until final arrangements are made for their disposition.

b. Only *C. m. macularius* derived from the Dexter stock of this subspecies or *C. m. eremius* should be maintained under the desert fishes SSP.

c. Eleven institutions are currently holding or displaying *C. m. macularius*. Given the resources already committed to its management by federal and state agencies, this pupfish hardly warrants so much attention from public aquaria to assure its continued survival. It is therefore strongly recommended that no more than two populations of *C. m. macularius* be maintained by participating institutions. Otiose aquarium populations should be replaced by Mexican *Cyprinodon* species. The survival of these pupfish in nature is even more seriously threatened than that of *C. m. macularius* and the initiation of captive breeding programs on their behalf by Mexican governmental agencies at any level is unlikely in the extreme. Participating institutions willing to devote space to these pupfish can thus play a critical role in assuring their survival.

6. All *Cyprinodon* species, studied to date have the demonstrated ability to produce viable, fertile hybrids. Male pupfish will court and spawn with any congeneric female although correctly identifying female pupfish is difficult due to the overall similarity of their coloration. Given the risk of genetic contamination of captive pupfish stocks posed by these biological peculiarities, it is recommended that no more than one *Cyprinodon* species be maintained by any given institution on a long-term basis. This limitation need not be extended to desert killifish of the genera *Megupsilon*, *Cualac*, or *Lucania*. Females of these fish differ sufficiently from those of *Cyprinodon* to preclude the possibility of accidental miscegenation.

7. After consulting with Dr. Michael Smith of the American Museum of Natural History, Mr. Douglas Sweet (Belle Isle Aquarium) has proposed the following goodeid species for inclusion in the desert fishes SSP:

- |                                  |                                       |
|----------------------------------|---------------------------------------|
| a. <i>Allotoca maculata</i> *    | f. <i>Ataeniobus toweri</i> **        |
| b. <i>Hubbsina turneri</i> *     | g. <i>Girardinichthys viviparus</i> * |
| c. <i>Characodon lateralis</i> * | h. <i>Xenoporphus captivus</i> **     |
| d. <i>Characodon audax</i> *     | i. <i>Allotoca goslinei</i>           |
| e. <i>Skiffia francesae</i> **   | j. <i>Allodontichthys polylepis</i>   |

Species are listed in decreasing order of endangerment in nature. Species designated with a single (\*) are under culture but available only in small numbers. Those designated with (\*\*) are represented by flourishing populations held by SSP participants.

8. The New York Aquarium is managing five *Xiphophorus* species that qualify for incorporation into the desert fishes SSP. The Monterrey platyfish, *X. couchianus*, is extinct in nature. *Xiphophorus grdoni*, *X. meyeri*, *X. milleri*, and *X. clemenciae* are of special concern because of their very restricted ranges and the susceptibility of their habitats to anthropogenic degradation. It would be highly desirable to have at least one other population of each species under institutional management. Sufficient numbers of the Monterrey platy are available to immediately supply founders to any interested SSP participant. A lead-time of 4-6 months would be required to fill requests for any of the remaining species.

*This report was submitted by Paul Loiselle.*

## Yemen Gazelles

During a four-day walk from Ta'ez to Al Turbah, sightings or records of gazelles were investigated. This area is the only one where Bilkis gazelles (*Gazella bilkis*) were seen in 1951 (Groves and Lay, 1985). No gazelles nor any signs of their presence were seen. Some pictures of *Gazella gazella erlangeri*, a conspecific taxon, have been shown in all the villages to at least 100 people. They all agreed that gazelles have not been seen in this area for several decades.

One pair of male gazelle horns was noticed in the "Reception Room" of the palace (called now National Museum in Ta'ez) of Imam Ahmed (king of Yemen until 1962). The horns were nearly straight, of medium length (about 25-28 cm), and with a very small span between the tips and at the base. They were well-ringed (left, 15 rings; right, 14 rings). Unfortunately, this display room was locked and it has been impossible to precisely measure the horns. They looked very similar to the ones presented in Harrison and Bates (1991) and referred as Bilkis gazelle.

Two groups of gazelles were seen in private collections in Ta'ez. One 2 to 3-year-old male captured in Wadi Surdud was seen in Al-Ganad hotel. Six other individuals were kept in a private house on the roof terrace. One male and one female were wild-caught and kept here for five years. Their progeny (1 male, 3 females) were kept with them. In my opinion, all these gazelles were *Gazella gazella cora*, the mountain gazelle or "Idmi".

One Westerner told me that he recently saw gazelles on the Aden-Mukkala road, several km from Aden in the sand dunes. Species was unknown.

People are speaking a lot about gazelle



hunters and this activity seems quite common. I learned the address of one man in wadi Saham (or Siham, near Hoddeida), where gazelles are still present. Another boy told me that his uncle, a farmer, was hunting gazelles almost weekly near Ladj, 30 km north of Aden.

Conclusion: No information was collected about the Bilkis gazelle (except the presence of the horns in the National Museum of Ta'ez). Its status is probably critical or this endemic species is perhaps even extinct. All the other species are presumably overhunted and many populations might also be on the verge of extinction. Ibex (*Capra ibex nubiana*) seem to also occur in good numbers in the Hadramaout and particularly in the area of Sana, near Tarim.

### References:

- Groves, C. P., and D. M. Lay. 1985. A new species of the genus *Gazella* (Mammalia: Artiodactyla: Bovidae) from the Arabian Peninsula. *Mammalia*, 49:27-36.
- Harrison, D. L., and P. J. J. Bates. 1991. The mammals of Arabia. Harrison Zoological Museum Publications, Sevenoaks, England. pp. 354.

*This report was submitted by Arnaud Greth, National Wildlife Research Center, Taif, Saudi Arabia.*

## Captive Population of New Gazelle Taxon Established

*Gazella gazella erlangeri* is a new subspecies of mountain gazelle, described by Groves et al. (in prep.). Its taxonomic position is unclear, particularly in relation to the enigmatic *Gazella bilkis* (Greth et al., in prep.).

No information is available on the distribution and status in the wild of this typically small, dark gazelle, but it probably still occurs in the mountains of the southwest Arabian Peninsula (Saudi Arabia and Yemen). Because of increasing hunting pressure in this region, its conservation status is probably vulnerable and may well be endangered.

Due to the uncertain status of this taxon in the wild and since there is currently no systematic captive breeding program, a small group of *G. erlangeri* has been assembled at the National Wildlife Research Center from private collections in the Kingdom. This founder population consists of six females and eight males, probably all wild-caught which should provide the basis for a genetically viable captive population. Nevertheless, additional founders will be sought.

After an appropriate quarantine time, all the animals were transferred to the King Khalid Wildlife Research Center, which specializes in captive breeding of Arabian gazelles and in research on their biology. The captive popu-

lation will be the subject of genetic research aimed at resolving the taxonomic position of *G. erlangeri*. The goal is to keep a herd of 60–80 individuals, representing the minimum viable population size needed to maintain 90% of genetic variability for the next 50 years. Ideally, other captive groups will also be established inside and outside Arabia to minimize the risks of catastrophic events and to maximize the prospects for the animal's survival.

The captive breeding program will be complemented by field surveys in the southwest of Saudi Arabia to provide baseline information on the conservation status of wild populations and to facilitate the preparation of an action plan with *in situ* and *ex situ* components. Similar surveys should be conducted in Yemen. It is known that uncontrolled hunting is the major threat to the species. Therefore, it is felt that this validates the immediate establishment of captive population. Action now may well prevent a desperate scramble to save the animal at a later date and will ensure the availability of stocks for reinforcement or reintroduction.

#### References:

- Greth, A., D. Williamson, C. Groves, G. Schwede, and M. Vassart. Bilkis gazelle: As dead as the Dodo? *Oryx*. In prep.
- Groves, C., C. Thouless, C., and M. Vassart. Subspecies of *Gazella gazella* in Saudi Arabia. *Fauna of Saudi Arabia*. In prep.

*This report was submitted by Arnaud Greth, National Wildlife Research Center, Taif, Saudi Arabia and Douglas Williamson, King Khalid Wildlife Research Center, Riyadh, Saudi Arabia.*

## Panama Tapir Project

Representatives from five North and Central American zoos travelled to Panama last March in a collaborative effort to train local personnel in the conservation of the Baird's tapir, *Tapirus bairdii*, and other endangered wildlife.

Participants in this international team were the chief veterinarian and senior veterinary technician from the San Diego Zoo (Dr. Don Janssen and Carrie Bressler), AAZPA tapir TAG chairman (Rick Barongi, San Diego Zoo), IUCN/SSC chairperson of the Tapir Specialist Group (Sharon Matola, Belize Zoo), coordinator of AMAZOO (Lorena Calvo, Guatemala City Zoo), assistant director and assistant curator of Miami Metrozoo (Al Fontana and Ron Magill) and the assistant curator of mammals from the Audubon Park Zoo (Lewis Greene).

The Baird's or Central American tapir is a critically endangered species and the largest land mammal in the Neotropics. The Republic of Panama has the largest number (ten animals) of captive tapirs in all of Central America. Less than 40 Baird's tapirs presently survive in the world's zoos. The tapir is still hunted for food and receives little or no protection throughout its range.

In order to ensure the future survival of this species, simultaneous programs of captive and field research need to be implemented. The objectives of this project were to work closely with Panamanian wildlife officials in a combination research/husbandry project. Short-term care was provided for captive wildlife and guidelines set up for long-term programs of captive breeding, research, and possible reintroductions. The Baird's tapir is an ideal flagship species that should be used to promote a more holistic program of wildlife conservation in Panama.

In the ten days our team was in Panama, we immobilized all ten captive tapirs to obtain blood and tissue samples for genetic analysis at the San Diego Zoo research center (CRES). Transponders were implanted behind the left ear of each tapir for permanent identification (IUCN-approved, Info-Pet transponder system used). Morphometric measurements of all the animals were recorded.

In addition to the work with the tapirs, a short zoo biology training course was conducted at the Summit Zoo in Panama City. Local staff were instructed in surgically-sexing monomorphic bird species, darting and immobilizing carnivores, and designing better husbandry protocols for all the animals in the zoo's collection.

An international Panamanian Tapir Trust was set up to generate outside funding for future projects. This trust is jointly administered by Panama's major NGO, ANCON, the IUCN tapir specialist group, and the AAZPA Tapir TAG.

The project received a tremendous amount of publicity both in and outside of Panama. Much of the international interest was generated by the fact that five of the tapirs involved in our project were located at the former country estate of the deposed General Manuel Noriega. Using the Noriega tapirs as a springboard to a more comprehensive tapir conservation program, we were able to form our international team. One of the most significant results of our visit was to arrange an unprecedented international breeding loan that will send one of the Noriega tapirs to the Belize Zoo to be paired with a wild-caught female. This type of cooperation is fundamental to international conservation efforts.

The participation of five major international zoos in the Panama Tapir Project has given greater incentive and stability to future conservation endeavors in Panama. Each zoo contributed some unique area of expertise, and as part of a team was extremely successful in accomplishing its objectives. Working together, pooling resources, is perhaps the greatest message we have sent to Panama. We have now laid the foundation for a Comprehensive Action Plan for the conservation of the Baird's tapir in Panama.

Much more lies ahead, but the communication network we have established is essential to the long term success of our *in situ* and *ex situ* objectives.

(NOTE: For immobilizing data on tapirs contact: Dr. Don Janssen, Chief of Veterinary Services, San Diego Zoo, FAX # 619-557-3959. For information about the Panamanian Tapir Trust contact: Rick Barongi, San Diego Zoo, FAX # 619-232-4117.

*This report was submitted by Rick Barongi, San Diego Zoo.*

## Drill News

The following information was excerpted from the Drill Ranch Newsletter, Vol. 2, No. 1, March, 1992.

### A Drill Ranch Biography: Ekki Ikanq

Last September, Ekkehard Nolte of Korup National Park project, Cameroon, reported a drill tied to a tree near Ikanq, a frontier immigration post. The four-year-old male was on a 12-inch rope minded by a somewhat deranged elderly man. The man seemed emotionally attached to the drill and was not about to give up the drill easily. Several weeks and three trips later, the drill was handed over. D.P.O. Lawrence Alobi and O.C. Nkpa Inakwo of the Nigeria Police Force provided critical intervention on the animal's behalf.

It is not known from where the drill originated but he probably came from the nearby Ikpan block of Cross River National Park or forests across the Akwayafe River in Cameroon. It's almost certain he was captured as an infant when his mother was shot. He thus survived over three years in captivity and probably never saw another drill during that time. The animal was in poor condition. He was thin and bony with a pale saddle of dry hair indicating poor nutrition.

The drill joined other larger drills, but was so passive and shy that he was moved in with the infants where he adopted a benevolent supervisory role. Ekki became particularly attached to yearling female, carrying her day and night and acting very protective. This 'maternal behavior' seemed unusual for an adolescent male. But as there has been no behavioral study of wild drills, it is unknown if such behavior is seen in the wild.

### New Drill

The only newcomer yet in 1992 is a two-year-old male who arrived 10 March 1992. Unaware of the Federal Endangered Species Decree forbidding trade in drills, his owner tried to sell him to the Department of Parks & Wildlife who feigned interest. The drill was subsequently confiscated and taken to Drill Ranch to begin his quarantine. The owner was informed of the law and of the Drill Rehabilitation & Breeding Center program. The owner agreed to officially donate Chico to the project. The animal was in excellent condition and extremely playful.

### Enclosure Progress

The chimpanzee enclosure was doubled in January. Georges and Randa Khawaja financed the purchase of the wire to enable this expansion. Work on the big open-topped drill enclosure has finally begun. The steel pipe has all been set and welded and the lumber cut and fitted. Funds are still lacking for chain-link fencing.

### Drill Survey in Cameroon

A drill survey is continuing in Cameroon. Official research permits were secured in November-December. Interviews are being conducted with hunters in likely drill habitat to find out

where drills are still living and how the populations are holding.

### Donations

In addition to the generous donation by the Khawajas, donations have been received from several new donors in 1992: Mark Monaco, U.S. Embassy, Lagos; Dave and Alice Jackson, IPCO; Clive Murray, Francis Sullivan and Richard Barnwell of WWF-UK; Peter and Judy Dunn, Bristol; Jackie Groves and Phil Turner; John and Janet Bristow, Lagos; Graham Crewe and Dix Dorrell; the crew of the Acadian Searcher; Mr. A.N. Daboh, Brain Corps, Kaduna; Ken Fletcher, Bristow, Calabar; and Belinda and Fiona Sweeting with Alan and Colin Freeman, Bristol. Shelagh Heard of the park project has become a new monthly donor. Thanks also to V.O. Georgewill, Dave Stocking, the SBM crew, Mr. Nnamdie O. King, John O. Niles, and Dave and Terry Long.

The first Drill Conservation Tip of the Hat for 1992 goes to Mr. Clement O. Ebin, Director of Parks & Wildlife. Mr. Ebin has done much to make the drill project a reality and has always given crucial support. By coordinating the Park Project, he is also seeing to it that a big chunk of drills' remaining habitat is preserved.

*This report was submitted by Daphne Onderdonk, c/o Nick Ashton-Jones Housing Estate P.O. Box 107 Calabar, Nigeria.*

## ISO Working Group on Transponders

To trace agricultural livestock in the event of disease outbreak or for tracing residues in slaughter animals, the EEC is preparing new rules for the identification of farm animals. Animals can be identified electronically with a transponder, a transmitter/receiver in which a code has been programmed. These types of identification systems are already widely used in modern husbandry systems.

The transponder is activated by an electromagnetic field, transmitted by a reader. The transponder uses the energy from the electromagnetic radiation to respond with the code, which is received by the reader. In combination with a management information system on the farm, these identification systems can be used for automatic feeding or process control as well as to monitor animal health, estrus, and production.

To prevent fraud, the identification tag should inseparably be connected to the animal. Microelectronics make it possible to miniaturize transponders to such an extent that they can be inserted subcutaneously. Also the code is long enough to be able to assign a number to every animal which is nationally, or even globally, unique. Several manufacturers sell systems for electronic animal identification. Unfortunately, they are all not yet compatible with each other. Transponders of one make cannot be



read by readers of another make. However, interchangeability is a prerequisite for large scale application of electronic identification.

Interchangeability requires an international standard upon which manufacturers can base their systems. The International Standardization Organization (ISO) has begun activities to develop an international standard for electronic identification. The ISO subcommittee 19, 'Agricultural Electronics' has instituted a working group 'Identification' of which the Netherlands was appointed convener. Chairman of this working group is Dr. F. W. H. Kampers of the Technical and Physical Engineering Research Service (TFDL-DLO) of the Agricultural Research Department of the Dutch Ministry of Agriculture. W. J. Eradus, MSc., of the Institute of Agricultural Engineering (IMAG-DLO) of the same department acts as secretary. Current participants of this working group are Belgium, Germany, Great Britain, Denmark, Norway, Sweden, France, Italy, the Soviet Union, the United States of America, and Canada. The first activity of the working group has been to make a proposal for the code structure, which will be submitted to ISO. Furthermore, a group in which several manufacturers participate is preparing a proposal for a technical concept of the standard which has maximal potential and ensures interchangeability. Further information about the working group 'Identification' can be obtained from the chairman (tel: 31-8370-76644, fax: 31-8370-11312) or the secretary (tel: 31-8370-76488, fax: 31-8370-25670).

## Use of Coded Microchip Implants for Marking Live Animals in Trade

The following draft resolution was prepared by a working group of Committee I on the basis of Document 8.33 in Kyoto, Japan, March 1992. The draft was approved by Committee I as amended.

### DRAFT RESOLUTION OF THE CONFERENCE OF THE PARTIES

RECOGNIZING the increasing wide use of coded microchip implants for the secure identification of animals, both within zoological gardens and for high value personal pets;

RECOGNIZING also the potential for the application of this method for the regulation of trade in certain other live animals listed in the appendices to the Convention;

CONCERNED that any such method employed to identify live animals in trade be uniform in its application;

RECALLING that Resolution Conf.7.12 adopted at the seventh meeting of the Conference of the Parties (Lausanne, 1989) recommended that the Animals Committee address further the issue of marking requirements for the identification of

specimens of look-alike species for the purpose of developing practical marking strategies and systems, and that the use of coded microchip implants be adopted on a trial basis on a sample range of high value Appendix I taxa as determined by the Animals Committee and Parties involved;

NOTING that Management Authorities may permit the movement of travelling exhibitions or circuses without permits or certificates pursuant to Article VII, paragraph 7, of the Convention;

MINDFUL that the provisions of Article VI (7) allow the Management Authority to determine appropriate methods of marking specimens for the purposes of assisting in identification;

AWARE that the IUCN/SSC Captive Breeding Specialist Group has undertaken an extensive review of the application of coded microchip implants;

### THE CONFERENCE OF THE PARTIES TO THE CONVENTION

#### Recommends

a) that Parties, where possible and appropriate, and without excluding the use of other methods, adopt the use of implantable transponder microchips for the secure identification of live Appendix I animals of species identified in accordance with advice received from the IUCN/SSC Captive Breeding Specialist Group;

b) that Parties consider the findings of the IUCN/SSC Captive Breeding Specialist Group regarding frequency, size of transponder and sterility of microchip as well as registration procedures within the central data bank;

c) that microchip implants be applied, where consistent with the well-being of the specimens concerned;

d) that methods of secure identification such as microchip implants be also applied to animals listed in Appendix I or Appendix II that are used in travelling exhibitions or circuses;

e) that the location of implanted microchips be standardised according to advice from the IUCN/SSC Captive Breeding Specialist Group;

f) that all microchip codes and related technical information needed to identify the transponder data be recorded on all relevant CITES documents;

g) that all Parties have access to a central data bank of microchip codes used to identify live Appendix I specimens and include such information in their annual reports to the Secretariat;

h) that the Secretariat liaise with the appropriate authority regarding access to and financial arrangements with the International Species Information System (ISIS) which has agreed to record in its database transponder numbers used by Parties in order to establish a central repository for registration of microchip codes;

i) that Parties make provision in the budget of the Secretariat to assist Parties requesting support in acquiring this technology;

j) that persons and/or organisations using this technology

made available through the Secretariat be charged an appropriate fee; and

**Directs**

a) the Secretariat to urge all manufacturers of transponders to strive towards the production of compatible equipment that is able to be applied universally; and

b) the Animals Committee to monitor developments in microchip implant technology and advise the Secretariat for the information of the Parties.

**The Caracas Declaration**

The IV World Congress on National Parks and Protected Areas concluded 21 February 1992 in Caracas, Venezuela. The Congress, which is held once each decade, was organized by IUCN in conjunction with the government of Venezuela. Over 1,800 people attended representing 130 countries. The Congress adjourned with adoption of the following Caracas Declaration:

**Parks, Protected Areas, and the Human Future:  
The Caracas Declaration**

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

**WE RECOGNIZE THAT:**

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

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

- they safeguard many of the world's outstanding areas of living richness, natural beauty and cultural significance, are a source of inspiration and are an irreplaceable asset of the countries to which they belong;
- they help to maintain the diversity of ecosystems, species, genetic varieties and ecological processes (including the regulation of water flow and climate) which are vital for the support of all life on Earth and for the improvement of human social and economic conditions;
- they protect genetic varieties and species, which are vital in meeting human needs, for example in agriculture and medicine, and are the basis for human social and cultural adaptation in an uncertain and changing world;
- they may be home to communities of people with traditional cultures and irreplaceable knowledge of nature;
- they may contain landscapes which reflect a long history of interaction between people and their environment;
- they have immense scientific, educational, cultural, recreational and spiritual value;
- they provide major direct and indirect benefits to local and national economies and models for sustainable conservation which may be applied elsewhere in the world.

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

1. REAFFIRM the responsibility of humanity to safeguard the living world;
2. EMPHASIZE the spiritual, social, economic, scientific and cultural importance of national parks and other kinds of protected area;
3. STRESS that the conservation of global biological diversity and the achievement of sustainable development depends upon effective and vigorous international action to reform the world's economic and trading systems, and to halt the global pollution that threatens to bring about climate change;
4. STRONGLY URGE all governments, regional and local authorities and international institutions to include protected areas as integral elements in development policies, programmes, plans and projects;
5. ENCOURAGE communities, non-governmental organizations, and private sector institutions to participate actively in the establishment and management of national parks and protected areas;
6. URGE all governments, local authorities, international institutions and non-governmental organizations to inform and

educate all sectors of society about the importance of protected areas, and the economic, social and environmental benefits they provide, and so make the public active partners and supporters in their protection;

7. **INSIST THAT** industry (including tourism, agriculture, forestry and the extraction of oil and minerals) must adopt the highest standards of environmental protection and eliminate damaging impacts on protected areas;

8. **STRONGLY URGE** industry, especially multi-national corporations, and governments, to ensure that any exploitation of biodiversity conforms with rigorous controls established by the sovereign State concerned;

9. **EMPHASIZE** the vital role of environmental education and urge all governments to strengthen their programmes, especially in and relating to national parks and protected areas, constituting appropriate national organizations to develop and coordinate this process;

10. **EMPHASIZE** that although national parks and other protected areas are of special importance, all lands and seas should be managed so as to maintain (or restore) the highest environmental quality;

11. **STRESS** the need for international cooperation and assistance to place the latest knowledge and best available technology at the disposal of all governments and especially their protected area managers.

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

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

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

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

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

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

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

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

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

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

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

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

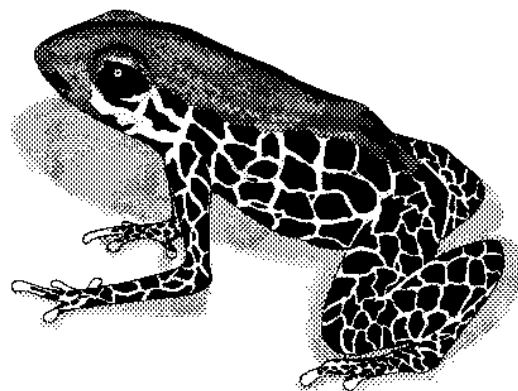
12. To work energetically to safeguard the world's tropical forests, particularly those of Amazonia which are reservoirs of outstanding biological diversity and under severe pressure;

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

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

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

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





## AAZPA Conservation News

### Species Survival Plans Established for African Wild Dog and Pink Pigeon.

Species Survival Plan (SSP) programs for the African wild dog and the pink pigeon have been approved by the AAZPA Wildlife Conservation and Management Committee (WCMC). This brings the total number of species managed under the SSP to 64. For further information on the African Wild Dog and Pink Pigeon SSPs, contact Bruce Brewer, Chicago Zoological Park and Kurt Hundgen, New York Zoological Park, respectively.

### Regional Taxon Advisory Groups Formed

Five new North American Regional Taxon Advisory Groups have been formed. They are Marine Fishes, Pigeons and Doves (Columbiformes), Ducks and Geese (Anseriformes), Cracids, and "Shorebirds" (Charadriiformes). This brings the total number of North American Regional Taxon Advisory Groups to 36. A list of current North American Regional Taxon Advisory Groups and their chairs is available from the AAZPA Conservation Center.

### Regional Taxon Advisory Group Meetings

The AAZPA Antelope Advisory Group met in January of this year in a joint meeting with the IUCN/SSC CBSG and the IUCN/SSC Antelope Specialist Group. The Global Conservation Assessment and Management Plan (CAMP) developed at this meeting has now been used to assist in the formulation of regional priorities for new studbooks and SSPs. The AAZPA Felid Advisory Group met from March in a joint meeting with IUCN/SSC CBSG and the IUCN/SSC Felid Specialist Group. The TAG has now formulated a draft set of regional captive space utilization priorities for felids. The AAZPA New World Primate Advisory Group also met in March and has recommended a three-year breeding moratorium for a number of species while the committee examines the taxon's captive status. The AAZPA Canid/Hyena/Aardwolf Advisory Group met from 14-17 May in a joint meeting with IUCN/SSC CBSG and the IUCN/SSC Canid Specialist Group. Global priorities for captive breeding programs were developed, and the TAG produced an initial draft of the North American Regional Collection Plan for Canids.

### AAZPA Conservation Resource Guide Distributed

The AAZPA *Conservation Resource Guide* contains detailed descriptions of the AAZPA Conservation Program including lists of specific responsibilities of program coordinators and various protocols related to program administration. A complementary copy of the document has been sent to all North American regional species coordinators, studbook keepers, TAG chairs and Fauna Interest Group (FIG) chairs. Copies were also

sent to all regional conservation coordinators recognized by the IUCN/SSC CBSG.

### AAZPA Annual Report on Conservation and Science

The 1991-1992 AAZPA *Annual Report on Conservation and Science* is currently in preparation and a limited number of copies will be available for purchase in October. All copies of the 1990-1991 edition have been distributed and no further copies are available.

### Bioethics Conference Held in Atlanta

A conference entitled "Animal Welfare and Conservation: Ethical Paradoxes in Modern Zoos and Aquariums" was held from 19-21 March 1992. Hosted jointly by AAZPA, Georgia Tech University and Zoo Atlanta, the Conference was funded by a \$57,000 National Science Foundation Grant awarded to Bryan Norton, Michael Hutchins and Terry Maple. Nearly 50 experts representing the fields of animal welfare, wildlife conservation, environmental ethics and the zoo profession were assembled for a stimulating discussion of various ethical issues facing modern zoos and aquariums. Topics included surplus animals, the procurement of animals for captive breeding programs and the use of animals in zoo and aquarium research. The proceedings are scheduled to be published by the American Association for the Advancement of Science. No publication date is available yet.

### Aruba Island Rattlesnake SSP Holds International Symposium

The Aruba Island Rattlesnake SSP conducted a symposium on research and conservation of the species on Aruba from 5-7 February 1992. The symposium included presentations on rattlesnake behavior, ecology, and conservation; a PHVA workshop organized by the IUCN/SSC CBSG; a workshop for Aruban educators; and a snake-bite seminar for island hospital personnel. The symposium was funded by a generous grant from the Coastal Aruba Refining Company.

### Small Population Management Advisory Group Holds Mid-year Meeting/Training Workshop

The AAZPA Small Population Management Advisory Group (SPMAG) held a meeting and training workshop from 7-12 March 1992 at the National Zoological Park's Conservation and Research Center in Front Royal, Virginia, USA. The meeting provided an opportunity for SPMAG members to discuss various issues related to population management, whereas the workshop is designed to give selected individuals specialized training in small population genetics and demographics so that they can serve as consultants to the SSP masterplanning process. Ten individuals were trained in 1992, bringing the total number of SPMAG members to 29. Support for the Workshop was provided by a grant from the AAZPA Conservation Endowment Fund.

### Behavior Workshop to be Held at Taipei Zoo

The 7th Annual Applying Behavioral Research to Zoo Animal Management Workshop will be held at the Taipei Zoo,

Taiwan in 1992. The award-winning eight-day workshop will be taught by Dr. Jill Mellen (Metro Washington Park Zoo, Portland Oregon, USA), Dr. Michael Hutchins (AAZPA Conservation Center), Nina Fascione (University of Maryland, USA), and Dr. Beth Stevens (Zoo Atlanta, Atlanta, Georgia, USA). Organizations wishing to host the 1993 or 1994 Workshops should contact Michael Hutchins for additional information c/o the AAZPA Conservation Center, 7970-D Old Georgetown Road, Bethesda, MD 20814 USA.

*This report was submitted by Dr. Michael Hutchins, AAZPA Director of Conservation and Science, Dr. Robert Wiese, Assistant Director of Conservation and Science and Kevin Willis, Conservation Biologist.*

## IUCN News

The below information was excerpted from IUCN News published by IUCN-US.

- The Inter-American Development Bank provided \$280,000 to IUCN to complete a study of the economic values of protected areas in Latin America, investment opportunities in protected areas and the needs for completing the system of protected areas in Latin America. IUCN hired 15 consultants, primarily from IUCN member organizations in the region, to complete the work. The grant will also finance the proceedings of the Congress for Latin America.

- The Conference of the Parties to the Convention on International Trade in Endangered Species (CITES) took place in Kyoto, Japan on 3-13 March 1992. Dr. Martin Holdgate, Director General of IUCN, chaired Working Committee One, which examined proposals to amend the Convention and its Appendices.

- The IUCN Headquarters Building in Gland will be finished this August. The project has largely been financed by contributions from the federal, cantonal, and village governments of Switzerland in the amount of 17 million Swiss francs. Contributions of \$50,000 or more to furnishing of the building from any nation would be welcome and recognized.

- The Standing Committee of the World Heritage Convention will have its annual meeting December 6-14 in Santa Fe, New Mexico, USA. This poses a significant opportunity to strengthen the treaty and the World Heritage Fund which supports conservation activities, especially in World Heritage Sites.

- Certain IUCN members are working on the concept of establishing a Biosphere Reserve to stretch from Patagonia to Alaska along the ridge of the Pacific crest. Watch future editions of the newsletter for details.

- Assistance is sought in documenting transboundary threats to parks or biodiversity conservation along the international

boundaries of Canada, the U.S., and Mexico. Please share your information with John Waugh at the IUCN-US office, 1400 16th St NW, Washington, DC 20036 USA.

## Report on Developments in the EEP

On 1 January 1991, the National Foundation for Research in Zoological Gardens (Amsterdam, The Netherlands) assumed duties as "EEP Executive Office". Four of the collaborators of this Foundation, Bert de Boer, Frank Princee, Koen Brouwer and Simone Smits, are involved in EEP activities on a part-time basis. The work of the EEP Executive Office, which falls under the responsibility of the EEP Coordination Committee, includes coordination of breeding program activities, organization of meetings, training of species coordinators, development of software tools, and promotion of the EEP.

The 8th EEP Conference was held in Budapest in May 1991. It was attended by 75 delegates representing 17 European countries. Proposals were submitted for four new EEP programmes (Asian elephant, great Indian hornbill, palm cockatoo, and the rat kangaroos of the genus *Bettongia*). Acceptance of these proposals brings the total number of EEP taxa to over 70. During the meeting, the first steps were taken to initiate Taxon Advisory Groups for bears, equids, hornbills, cracids, and ciconiid birds. The TAG system will be extended in the near future. Nine species-committee meetings, as well as a number of other committee meetings, were held in conjunction with the Budapest Conference. The proceedings of the Conference, together with the 1990 annual reports of the species coordinators, were published and distributed in November 1991.

The EEP Executive Office is developing a training program for species coordinators. Two courses have been conducted in November 1991 and June 1992.

Frank Princee worked with ISIS for four months in 1991. During this period he explored the possibilities to combine the strong points of the SPARKS software with those of the ZSM software in order to develop a new "third generation" population management software package. The results of this exploration were promising and major progress should be made in 1992.

The 1992 EEP Conference was held at Edinburgh Zoo in July. This conference saw further development of TAGs and a further increase of activities of the various categories of committees. For the first time, a regional European CBSG meeting was organized in conjunction with the Edinburgh EEP Conference. This will certainly lead to the involvement of an increased number of experts in EEP activities, as well as to an improved integration of EEP actions with those of other regions and global developments. The recent establishment of a Pan-European Zoo Association (EAZA) is expected to greatly facilitate further development of the EEP.

There are EEPs in progress for 67 taxa whose European populations total about 4,000 individual animals.

Currently, about 300 European institutions participate in one or more of the EEP programmes. Twenty countries with 15 different languages are involved. Obviously, this results in considerable communication problems. A more extensive report on the Edinburgh EEP conference will appear in a later CBSG News.

## European Federation of Zoos and Aquaria (EAZA) Formed

The transformation of the former European Community Association of Zoos and Aquaria ECAZA into EAZA was accepted unanimously by the annual general meeting of ECAZA on 14 March 1992 at the Stuttgart Zoo. This is the result of two years of preparative discussions with zoo representatives all over Europe.

This new federation integrates the functions of the existing ECAZA and EEP offices. Its main objectives are to cooperate in conservation efforts through coordinated breeding programs, to promote education and scientific study among its members, and to represent the interests of its members on European and international level.

### Committees

Five committees have been set up to assist EAZA in its operation.

1. The *EEP committee* will monitor the EEP breeding programs for its members;
2. The *membership committee* will screen the applications for membership;
3. The *veterinary committee* will support the members in all matters (legislative, technical), relevant to the veterinary care in zoos;
4. The *EC legislative committee* will fulfil ECAZA's former function and will take the members' viewpoints on EEC proposals;
5. The *aquarium committee* will handle all the members' specific questions involving aquaria.

### Council

In the Council of EAZA, representatives will be seated of every European country, west of the Urals. At present, the council members of the former ECAZA will continue their responsibilities in EAZA until their respective term of office elapses. The former executive committee of ECAZA will also remain in its function till the end of 1992.

### Membership

Membership is open to all zoos and aquaria in Europe. Membership is institutional, this means that all staff belonging to

the member institute are part of the membership. Applications for membership will be examined following the conditions laid down in the constitution and its bylaws. National federations are invited to become associated member. At present EAZA counts over 100 members.

## Zoo News from the British Isles



### New Director

The post of Director of The Federation of Zoological Gardens of Great Britain and Ireland was recently created and the Council is pleased to announce that Peter J.S. Olney has been appointed. Olney, who was Curator of Birds and Reptiles for the Zoological Society of London, has over 20 years experience of zoo work, and is well known and respected internationally and nationally. He will continue to act as Senior Editor of the International Zoo Yearbook, and Coordinator of International Studbooks.

The main tasks of the Director, which is on a part-time basis, are to (a) maintain liaison with relevant national and international conservation, welfare and zoological organizations and government agencies; (b) maintain contact with Federation Members, zoos and collections; (c) provide guidance to, and generally oversee, Federation staff; and (d) promote the work and aims of the Federation.

### New Management of Species Structure

Following recent meetings of the Council of the Federation, the Joint Management of Species Group (JMSG), and other previously independent management groups (Elephant Group, Anthropoid Ape Advisory Panel, Reptile Group, Invertebrate Group), it was agreed that the Federation will assume responsibility for all species in managed programs in the British Isles.

A subcommittee of the Federation's Conservation and Animal Management Committee (CAM) was established under the Chairmanship of Dr. Miranda Stevenson, Edinburgh Zoo. The first meeting of this committee, the Joint Management of Species Committee (JMSC), will take place in February. The basic remit of the JMSC is:

- to organize and coordinate species management programs in the British Isles;
- to liaise with programs in other regions;
- to establish close cooperation with the European Endangered Species Programs (EEP); the Chairman of JMSC will serve on the co-ordination committee of the EEP as one of the British Isles' representatives;
- to establish a structure of Taxon Advisory Groups (TAGs) in the British Isles and to link those in with European TAGs.

The following have already been agreed:

1. Species which are in the British Isles (BI) collections and for which there is an EEP join the EEP forthwith.

2. Species which have JMSG programs but not an EEP program remain as BI programs with BI coordinators. However, thought should be given to the future development of an EEP program if applicable.

3. Species which have an EEP coordinator and a JMSG coordinator may need to continue to have the BI coordinator if a) there are a significantly high number of animals within the BI collections so that it is possible to treat them as a separate sub-population, and if b) the species come under hoofstock quarantine regulations so that it would be essential to the BI program to have a coordinator to liaise imports. This may also apply to some rabies quarantine species.

In these cases, the BI coordinator would not move animals without the prior approval of the EEP coordinator, i.e. the BI coordinator is "subordinate" to the EEP coordinator. In many cases, the EEP coordinator may be a BI person.

4. The JMSG reorganize itself into taxonomic advisory groups. These would look after the various taxa in BI collections while liaising with EEP programs and TAGs. These groups would co-opt non-zoo personnel as advisors, conduct husbandry, nutrition, taxonomic, and behavioral enrichment research. They would also suggest possible new EEP programs, liaise through the Federation with TAGs in other regions and with CBSG. The embryonic framework of many of these groups is already in existence.

## Captive Breeding of Endangered Species in Vietnam



Vietnam is a country of very rich and varied fauna. There are 270 species of mammals, 773 species of birds, 180 species of reptiles, and 80 species of amphibians in Vietnam. Even more species will be identified through future surveys. Many of the species are endemic to the country.

Due to many years of war, continued habitat destruction, and considerable uncontrolled hunting, the fauna is in serious decline. The Red Data Book of Vietnam has listed 367 threatened species. Of these, 68 species are endangered, 95 are vulnerable, and 126 are rare.

Although a network of 187 national parks and nature reserves covering one million hectares (ha) of forest has been established and many conservation measures undertaken, many species still face extinction in the near future because of habitat loss and hunting. These species include, but are not limited to, Javan rhino (*Rhinoceros sondaicus*), brow-antlered deer (*Cervus eldi*), Vietnam sika deer (*Cervus nippon pseudasix*), Francois langur (*Trachypithecus francoisi*), snub-nose monkey (*Rhinopithecus avunculus*), Douc langur (*Pygathrix nemaeus*), Lowes otter civet (*Cynogale lowei*), and Owston's palm civet (*Chrotogale owstoni*). In order to insure their survival and

restoration, captive populations should be quickly established.

The Institute of Ecology and Biological Resources (IEBR) of the National Center for Scientific Research in Vietnam is one of the most important institutions working for wildlife conservation. Along with *in situ* species conservation, the IEBR has carried out wildlife captive breeding for several years.

In 1986, the IEBR in conjunction with the local authorities of Dac Lac province (South Vietnam) established its first captive breeding facility, the Eakao Breeding Station. The Station is about 450 ha in area and adjoins a 350-ha lake. The climate is tropical; the rainy season lasts from June–October. The vegetation consists of three major types: dipterocarp forest, mixed young forest, and agriculture fields. The natural conditions of the Station are suitable for both the captive and semi-captive breeding.

There are a number of endangered species kept at the Station including Vietnam sika deer, brow-antlered deer, Asian elephant (*Elaphus amximus*), biturong (*Arctictis binturong*), and slow loris (*Nycticebus pygmaeus*). Cages for kouprey have also been built at the Station for future breeding.

The Hanoi Zoo has certain facilities for captive propagation and the IEBR cooperates with the zoo for breeding of Owston's palm civet, snub-nose monkey, Douc langur, and Vietnam's pheasant (*Lophura hatinhensis*).

In order to provide more facilities for captive propagation, the IEBR started to establish a new breeding facility, the Bavi Breeding Station, in North Vietnam in 1990. The Station is about 60 km northwest of Hanoi. It is located on a small island in Suoi Hai Lake. The island measures 1.0 by 1.2 km. The Suoi Hai Lake is about ten square kilometers. The only means of transport to the island is by boat.

In 1990, the IEBR built the first facilities for keeping Vietnam sika deer. The enclosure measures 200 square meters surrounded by wire fencing. Five sika deer are currently housed at the Station and three calves were born in last two years.

The IEBR plans to improve and enlarge the facility to increase the sika deer herd as well as to house Owston's palm civets. The project needs a budget of \$30,000 (U.S.).

The importance of preserving Vietnam's gene pool and biodiversity, makes it critical that captive breeding stations be established and maintained. The training of personnel in captive breeding techniques is also critically important. Funding for such projects in Vietnam are very difficult because of economic difficulties facing the country.

The IEBR welcomes any contributions of monies or expertise by institutions or individuals to help in the captive breeding of endangered species. The authors of this report extend their appreciation to the Frankfurt Zoological Society, Jersey Wildlife Trust, Frankfurt Zoo, Simon Stuart, R. Wirth, R. Ratajszczak, H. Van Rompaey of IUCN/SSC, J. H. Adler and W. Peter of Allwetterzoo, and R. Cox of WWF.

This report was submitted by Prof. Dang Huy Huynh and Nguyen Xuan Dang, Institute for Ecology and Biological Resources, National Center for Scientific Research in Vietnam, Nghia do - Tu Lien, Hanoi, Vietnam.



*Preliminary agenda...*

## International Conference on Implications of Infectious Diseases for Captive Propagation and Reintroduction Programs of Threatened Species

An international conference to discuss implications of infectious diseases on captive propagation and reintroduction programs will be held on 11-13 November 1992 in Oakland, California USA. The conference will be held at the same location and just preceding the joint conference of the American Association of Zoo Veterinarians and the American Association of Wildlife Veterinarians on 15-19 November. Registration information for this conference can be found in this edition of *CBSG News*.

### Wednesday, 11 November

8:00-8:20 Introduction

#### *Session I: Review of Reintroductions/Translocations; Rational and Types*

8:20-8:40 Reintroductions: Ben Beck  
8:45-9:05 Translocations: Brad Griffith

#### *Session II: Historical Survey of Disease Problems Associated with Release*

9:10-9:30 D. Meltzer - Mammals  
9:30-9:50 Elliot Jacobson- Reptiles  
9:55-10:15 John Cooper - Birds  
10:15-10:30 Break

#### *Session III: Monitoring, Investigation, and Surveillance of Disease in Free-ranging Animals*

10:40-11:00 Donald Forrester/ Marilyn Spaulding  
11:05-11:25 Michael Woodford  
11:30-13:00 Lunch

#### *Session IV: Monitoring, Investigation, and Surveillance of Disease in Captive Animals*

13:00-13:20 Robert Cook  
13:30-13:50 Linda Munson

#### *Session V: Impact of Infectious Disease on Population Dynamics*

14:00-14:30 Andy Dobson/ Annarie Lyles

#### *Session VI: Economic Considerations for Monitoring and Screening Programs*

14:30-15:00 William Karesh

#### *Session VII: Planning and Risk Assessment for Release Programs*

15:00-15:25 Jon Ballou  
15:25-16:00 Break  
16:00-20:00 Workshops

### Thursday, 12 November

8:00-9:00 Workshop Reports

#### *Session VIII: Predisposing Factors to Infectious Disease: Genetic and Nutritional*

9:00-9:20 Steve O'Brien - Genetic  
9:30-9:50 Duane Ullrey - Nutritional  
9:50-10:15 Break

#### *Session IX: Interspecies Transmission of Infectious Disease*

10:20-10:40 Werner Heuschel  
10:40-11:00 Graham Mitchell

#### *Session X: Emerging Infectious Diseases*

11:00-11:20 Steven Morse  
12:00-13:00 Lunch

#### *Session XI: Data Collection Systems*

13:00-13:20 Nate Flesness

#### *Session XII: Future Thrusts in Diagnostic Technology*

13:25-14:00 Michael Worley

#### *Session XIII: Vaccination and Prevention*

14:05-14:25 Paul Klein  
14:25-14:50 Jim Bittle  
15:00-15:20 Jim Evermann

#### *Session XIV: Government and International Interactions*

15:30-15:25 Margaret Cooper  
16:00-16:20 Bruce Read  
16:30-17:00 Break  
17:00-20:00 Working Groups

### Friday, 13 November

8:00-10:00 Working Group Reports  
10:00-10:30 Break  
10:30-12:00 Working Groups  
12:00-13:30 Lunch  
13:30-15:00 Workshops  
15:00-15:30 Break  
15:30-18:00 Final Report



## CBSG Activities Schedule

Below is a schedule of meetings and activities undertaken CBSG personnel. Individuals wishing more specific information can contact the CBSG office. Abbreviations are: (S) = Ulysses Seal, (F) = Tom Foose, (E-J) = Sue Ellis-Joseph, (M) = Judi Mikolai, (L) = Lisa Laqua

### 1992

#### August

- 8 - 16 Calgary: Cranes CAMP and PHVA Workshop (S,F)  
 17 - 21 New Zealand: Penguin PHVA and CAMP Workshop (S,E-J)  
 22 - 23 New Zealand: Plant Workshop (S)  
 24 - 29 Melbourne: International Penguin Conference (E-J)  
 26 - 27 Wellington: DOC (S)

#### September

- 1 - 3 Vancouver: Reptile(Lizard, Snake Grps) CAMP(Quinn,McLain) (S,F,E-J,M)  
 4 - 6 Vancouver: CBSG Meeting (S,F,E-J,M,L)  
 7 - 8 Vancouver: IUDZG Meeting (S)  
 12 - 17 Toronto: AAZPA (S,F,E-J)  
 20 - 26 Gautier, MS: Sandhill Crane PVA (S)

#### October

- 11 - 14 India: Indian Zoo Assoc & CBSG (Deer PHVA) (S,F)  
 13 - 17 Yokahama: SSCJ & Workshops (S, Kawata)  
 20 - 22 Naples, FL: FL Panther Genetics Workshop  
 25 - 30 Brazil: Spix's Macaw PHVA; Lear's, Hya cinth Macaw Workshop (S)  
 30 - Nov 3 Ohio: Cichlid Fauna (S)

#### November

- 1 Switzerland: SSC Meeting (S)  
 4 - 7 Omaha: BFF SSP Meeting (S)  
 7 - 8 Idaho: Raptors CAMP (S,E-J)  
 9 - 11 London: Categories of Threat Workshop (F)  
 11 - 13 Oakland: AAZPA/AAZV/CBSG Disease Workshop (S)  
 14 - 16 Oakland: Zoo Vets (&WLDA) mtg - Opening Address (S)  
 16 - 30 Indonesia: Sumatran Tiger PHVA (+WWWD PHVA) (S,F,E-J)

#### December

- 3 - 5 Southeast Asian Zoo Meeting (F)  
 6 - 19 Hawaii: Forest Birds CAMP, PHVA (S, E-J)

### 1993

#### January

- 2nd week Kuala Lumpur: Storks, Ibises, Spoonbills CAMP (S)  
 3rd week Indonesia: Orang PHVA (S,F)

#### February

- 4 - ?? Antwerp: Galliformes CAMP (S,E-J)  
 Edward's Pheasant PHVA  
 10 - 15 Amsterdam: Mustelid and Viverrid & Procyonids CAMP (S)  
 22 - 24 Kingston Jamaica: PHVA-Jamacia Iguana (S)

#### March

- 10 - 14 San Diego: Pigeons CAMP (S,E-J)  
 15 - 17 San Diego: Sheep, Goats, Saiga CAMP(S)  
 18 - 19 San Diego: Deer GCAP (S,F)  
 Brazil: Felid CAMP Review & PHVA  
 France: Mountain Gorilla PHVA (S)  
 21 - 31

#### April

- 2nd week? Kew: PHVA Selected Plant Species (S)  
 CAMP Threatened Plants of St. Helena Island (S)  
 Morocco: M Monk Seal, PHVA  
 19 - 30? Madagascar: Tentative dates, CAMP's & PHVA's  
 25 - 29 Boston: Third Aquarium Congress  
 ? Glasgow: International Molluscan Conference (S)

#### May

- (?) Mauritius: Black River Park/Pink Pigeon  
 3 - 17(?) Madagascar: Reptiles, Birds & Carnivores CAMP & Lemurs PHVA (S)

#### June

- 1 - 4 China: Baiji PHVA (S,E-J)  
 14 - 25 Guatemala: AMAZOO, Regional CBSG (20th); PHVA's

#### July

- 7 - 10(?): Turtles & Tortoises CAMP  
 2 weeks Hawaii: Birds (S, E-J)

#### September

- 2 - 4 Antwerp: CBSG & IUDZG  
 12 - 16 Omaha, NE: AAZPA Annual Mtg

#### October

- 10 - 16 India: Lion-tailed Macaque PHVA (S,F)  
 Indian Lion (S,F)

**-CAMP-**

**ANNOUNCING THE FIRST**

**CONSERVATION ASSESSMENT AND  
MANAGEMENT PLAN WORKSHOP  
FOR THE REPTILE FAMILIES:**

**VARANIDAE  
IGUANIDAE (FORMERLY IGUANINAE)  
BOIDAE  
PYTHONIDAE**

**1-3 September 1992**

**Hotel Vancouver, Vancouver, British Columbia**

*In Conjunction with*

**The Captive Breeding Specialist Group  
Annual Meeting  
4-6 September 1992**

**For Additional Information and Registration Materials Contact:**

**Ulysses S. Seal, Chairman  
IUCN/SSC Captive Breeding Specialist Group  
12101 Johnny Cake Ridge Road  
Apple Valley, MN 55124 USA  
Phone: 612-431-9325  
FAX: 612-432-2757**

**The work of the Captive Breeding Specialist Group  
is made possible by generous contributions from the following  
members of the CBSG Institutional Conservation Council:**

***Conservators*** (\$10,000 and above)

Chicago Zoological Society  
Colombus 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  
Lubee Foundation  
Metropolitan Toronto Zoo  
Minnesota Zoological Garden  
New York Zoological Society  
Omaha's Henry Doorly Zoo  
White Oak Plantation  
Zoological Society of Cincinnati  
Zoological Society of San Diego  
TheWILDS

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

American Association of Zoological Parks  
and Aquariums  
Cleveland Zoo  
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*** (\$1,000 - \$4,999)

Audubon Institute  
Caldwell Zoo  
Calgary Zoo  
Cologne Zoo  
El Paso Zoo  
Federation of Zoological Gardens of Great  
Britain and Ireland  
Japanese Association of Zoological Parks  
and Aquariums  
Jersey Wildlife Preservation Trust  
The Living Desert  
Marwell Zoological Park  
Milwaukee County Zoological Society  
NOAHS Center  
North of Chester Zoological Society  
Oklahoma City Zoo  
Phoenix Zoo

***Protectors, continued***

Paignton Zoological and Botanical Gardens  
Penscynor Wildlife Park  
Philadelphia Zoological Garden  
Pittsburgh Zoo  
Riverbanks Zoological Park  
Royal Zoological Society of Antwerp  
San Francisco Zoo  
Urban Council of Hong Kong  
Washington Park Zoo  
Wilhelma Zoological Garden  
Woodland Park Zoo  
Zoological Society of London

***Stewards*** (\$500 - \$999)

Aalborg Zoo  
Banham Zoo  
Copenhagen Zoo  
Dutch Federation of Zoological Gardens  
Givskud Zoo  
Granby Zoological Society  
Howletts & Port Lympne Foundation  
Knoxville Zoo  
Odense Zoo  
Orana Park Wildlife Trust  
Paradise Park  
Royal Zoological Society of Scotland  
Royal Zoological Society of Southern  
Australia  
Species Survival Committee of Japan  
Twycross Zoo  
Union of German Zoo Directors  
World Parrot Trust  
Yong-In Farmland  
Zoological Society of Wales

***Curators*** (\$250 - \$499)

Cotswold Wildlife Park  
Thrigby Hall Wildlife Gardens  
Topeka Zoological Park

***Sponsors*** (\$50 - \$249)

Dreher Park Zoo  
Emporia Zoo  
Fota Wildlife Park  
Sunset Zoo

***Supporters*** (\$25 - \$49)

Alameda Park Zoo  
King Khalid Wildlife Research Center  
Zoo Conservation Outreach Group

# CBSG News



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



CBSG News  
12101 JOHNNY CAKE RIDGE ROAD  
APPLE VALLEY, MN 55124 USA

FORWARDING AND RETURN  
POSTAGE GUARANTEED

BULK RATE  
U. S. Postage  
PAID  
ST. PAUL, MN  
PERMIT NO. 7561



Printed on Recycled Paper