

Happy Holidays from CBSG!

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In this Issue:

Spix's Macaw/Grey-breasted Parakeet PVA	2
Western Pond Turtle PHVA	2
Ex Situ Population Management in Asia	3
Upcoming Activities	4

Meet Katia Ferraz, New CBSG Brasil Team Member

I am a Brazilian wildlife biologist specializing in animal ecology and conservation biology. For over 20 years, I studied capybara ecology and management in anthropogenic habitats in southeastern Brazil. While completing my Ph.D., I started working with species distribution modeling. I had my first experience working with felids in 2003 using non-invasive capture and censuring techniques for mountain lions at Fort Collins Science Center (USGS). In 2005, I was invited by the IUCN SSC Cat Specialist Group to build habitat suitability maps for neotropical cats. Since 2009, I have been working in the SISBIOTA Project–Top Predators network in a partnership with the National Center for Research and Conservation of Mammalian Carnivores (CENAP) & Chico Mendes Institute of Biodiversity Conservation (ICMBio), modeling carnivore spatial distribution for conservation decision-making in the National Action Plans of Brazil. During this time, I met Dr. Arnaud Desbiez, CBSG Brasil convenor.

Recently, Arnaud invited me to officially join the CBSG team. I have collaborated with CBSG Brasil on various projects, including work on jaguars and most recently on developing habitat suitability models for the chacoan peccary. I am very interested and motivated to collaborate on and experiment with new tools for species conservation planning.



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- *Ph.D. in Ecology at “Luiz de Queiroz” College of Agriculture, University of São Paulo, 2004*
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Spix's Macaw and Grey-breasted Parakeet PVA Workshop // Arnaud Desbiez

At the end of September, CBSG Brasil facilitated a population viability analysis (PVA) for Spix's macaw (*Cyanopsitta spixii*) and the grey-breasted parakeet (*Pyrrhura griseipectus*).

A captive population of Spix's macaw (Extinct in the Wild) is carefully managed in several institutions worldwide. Both *PMx* and *Vortex* were used to evaluate the captive population and its potential for a reintroduction program, which is currently being planned. Participants found that potential viability of released birds is thwarted by low egg viability and current inbreeding of captive birds. They discussed next steps and made recommendations for captive populations. The current species action plan was updated using results from the modeling.

The grey-breasted parakeet is Critically Endangered. It was recently rediscovered surviving in two disconnected, small populations, for which an *in situ* conservation initiative was started. *Vortex* was used to assess status and population trends as well as major threats, research priorities, and management strategies. Participants determined that unless the threat of the illegal pet trade is reduced, the species will face extinction, but with proper protection and management, the species has a high chance of survival. Recommendations included using nesting boxes as management strategies and increasing current project activities.

The workshop was organized by ICMBio CEMAVE and was a great success. It helped highlight conservation threats for both species and identified ways to move forward. Many thanks to the Fundo Vale for fully funding this workshop.



PVA workshop participants.



Spix's macaw. Photo: Al Wabra Wildlife Preservation

Western Pond Turtle PHVA // Emily Wick

Seattle's Woodland Park Zoo invited CBSG to facilitate a PHVA for the Western Pond Turtle (*Actinemys marmorata*) in Washington from 12-16 November. The PHVA was designed to help evaluate the current conservation program and assess threats to the species. The workshop was hosted by Woodland Park Zoo and funded by the zoo and other project partners, including Washington Department of Fish and Wildlife, Oregon Zoo, and the Northwest Zoo & Aquarium Alliance.



Oregon Dept of Fish and Wildlife

The population models generated by CBSG (including Sara Zeigler) were integral in shaping the thought process of the group. While the model identified high hatchling mortality (resulting from predation by invasive bullfrogs and other local

species) as a major cause for current population declines, the analysis also identified adult survivorship as a primary driver of future population growth.

These new data caused concern for participants due to an emerging "shell-rot" disease that appears to be preferentially attacking adults. Participants immediately began designing detailed research plans for investigating the species demography and the epidemiology of the shell disease. As another result of the meeting, the zoos currently participating in turtle "head-starting" efforts—in which hatchlings are raised in zoos until they grow beyond the bite-sized phase of their youth—have pledged to work together more closely to share information, expertise, and experience in order to manage their turtle populations more effectively.

Click [here](#) to read the full Western Pond Turtle PHVA press release from CBSG.



Toward Regional Species Management Among Asian Zoos

Much of Asia's biodiversity is under threat of decline or extinction. Asian zoos have the opportunity and responsibility to manage their *ex situ* populations well and to contribute positively to the conservation of threatened Asian species. CBSG is supportive of ongoing efforts in Asia to increase population management capacity and to promote regional collaboration. These topics—first discussed in CBSG working groups—have led to numerous training activities and expansion of studbooks and managed programs in the region. Our training efforts in Southeast Asia will continue in 2013.

Building upon previous *ex situ* population management workshops held in Taipei, CBSG was invited to conduct a five-day training course on 5-9 November hosted by the Taipei Zoo. Thirty-five participants from Taiwan, Singapore, Thailand, Hong Kong, and Indonesia attended the basic *ex situ* population management course, which focused on studbook development, data validation and analysis, and population planning. The course was followed by a two-day conference on promoting collaboration among Asian zoos in population management, which Taipei Zoo hopes to host annually. Topics included integrated species conservation planning and the conservation role of *ex situ* management; international studbooks and global management; organizational structure and programs of regional zoo associations (EAZA and ZAA); and case studies within Asian zoo associations. The conference culminated with a roundtable discussion that centered around 13 Asian priority species and identified actions to establish or improve regional and international studbook data and intra-regional collaboration. Despite the diversity of languages, cultures, and zoo associations within the region, the Asian zoo community is coming together to share information, develop collaborative activities, and join forces to improve population management and promote the conservation of the Asian species in their care.

Ex Situ Conservation Efforts in China

In the past few decades, great strides have been made in the conservation of native species in China. This fall, CBSG had the opportunity to join our Chinese colleagues in their ongoing conservation efforts that have resulted in the improved conservation status of these three iconic species in China.

Annual Conference for Giant Pandas

The 2012 Annual Conference of Chinese Committee of Breeding Techniques for Giant Pandas (*Ailuropoda melanoleuca*) was held in Chengdu, China, on 13-15 November. Over 100 participants from China as well as other parts of Asia, Australasia, Europe, and North America attended the conference, which included presentations on giant panda husbandry, research, education, conservation, and population management. As we have done since the Committee was established in 2002, CBSG (including Jonathan Ballou, SCBI) assisted with data analysis and facilitated the masterplanning technical session, leading representatives from the major panda breeding centers through specific breeding recommendations for 2013. Given past strong population growth, the focus of population management has now shifted from demographic growth to more intensive genetic management. This strategy to focus on the "quality vs. quantity" of giant panda cubs produced is strongly supported by both the Chinese Association of Zoological Gardens (CAZG) and the State Forestry Administration (SFA). Plans continue to develop for reintroduction efforts, including training centers for "rewilding" efforts.

CBSG also gave an overview of the recent Red Panda Population and Habitat Viability Assessment (PHVA) workshop, noting the overlap in distribution, threats, and conservation action with giant pandas, and urging both *in situ* and *ex situ* conservation actions for red pandas (*Ailurus fulgens*). The red panda global *ex situ* program (Global Species Management Plan – GSMP) was highlighted, and the Chinese panda breeding facilities (many of which hold red pandas in addition to giant pandas) were urged to espouse sound population management to promote the viability and conservation role of this *ex situ* population.



Photo: Kathy Traylor-Holzer



Photo: Kathy Traylor-Holzer

South China Tiger Annual Masterplanning

In 1995, the Chinese Association of Zoological Gardens (CAZG) requested assistance from CBSG in developing a management program for its *ex situ* population of South China tigers (*Panthera tigris amoyensis*). This included a biomedical survey and assessment, development of an accurate regional studbook, and establishment of a scientific management committee. Over 17 years later, this population continues to be well-managed and has doubled in size despite its low founder base (only six). Extinct in the Wild, this *ex situ* population of over 100 tigers represents the last remaining South China tigers on the planet. CBSG attended the 18th annual meeting of the South China Tiger Scientific Committee in Shaoguan, China, on 19-20 November, presenting information on breeding strategies and challenges for other *ex situ* tiger populations and assisting with data analysis for the masterplanning discussion. Participants toured the Shaoguan South China Tiger Breeding Facility, one of four such facilities in China. Although enormous challenges remain for the persistence and recovery of this subspecies, sound science and animal management practices are in place in China to promote survival of this culturally important species.

Symposium for the Pere David's Deer

The Pere David's deer (*Elaphurus davidianus*)—better known as the *milu* in its native China—represents one of the best known *ex situ* conservation successes. When the walls of the Beijing Imperial Hunting Park fell in 1895, the species quickly disappeared from China. The remaining 18 individuals were gathered from European zoos to form a breeding herd at Woburn Abbey, UK. Protected throughout two World Wars, this herd became the source population that provided 38 deer to China in the mid-1980s to seed the re-establishment of this species in its native range. Today thousands of milu live throughout eastern China in captive, semi-captive, and free-ranging wild herds that span the intensive population management continuum.

On 22-23 November, the 2nd International Academic Symposium for the Milu in China was held at Dafeng Milu National Nature Reserve. Speakers provided historical perspectives, status updates on existing populations, and results of various ecological research studies on the milu.

CBSG presented information on integrated species conservation planning and tools for metapopulation management. The IUCN SSC Reintroduction Specialist Group (Mark Stanley Price) discussed the emerging issues and challenges of reintroduction in the face of climate change and changing conditions and philosophies. Participants recognized the need for an integrated national conservation plan for the milu that incorporates metapopulation management strategies to promote viable, genetically healthy populations, and identifies strategies for future reintroductions and expansion of wild populations. Efforts will soon be underway to develop such a strategy.



Photo: Kathy Traylor-Holzer

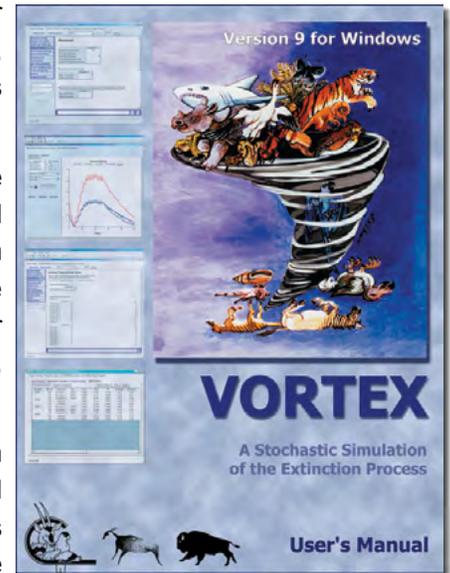
Upcoming Activities

Vortex Modeling Courses // Kathy Traylor-Holzer

CBSG will be conducting a basic *Vortex* training course at the Brookfield Zoo near Chicago, USA, on 8-11 January. Topics will include basic model development, sensitivity testing, and the development of management scenarios to assess impacts on long-term viability of populations. **This course is full.**

An advanced course in *Vortex* modeling is planned for 19-22 March 2013 at the Smithsonian Conservation Biology Institute in Front Royal, VA. This course is designed for those with previous *Vortex* experience, and will explore in more detail the program options for building complex population models, such as using functions and state variables. **Space is available in this course.** Please contact Kathy Traylor-Holzer (kathy@cbsg.org) if you are interested in this course, being added to the waiting list, or future training opportunities.

Vortex is an individual-based, stochastic computer simulation model for population viability analysis (PVA). *Vortex*, which was developed by Bob Lacy (Chicago Zoological Society), has been used to model hundreds of species in the past 20+ years and is an integral component of the CBSG PHVA process. The software and manual can be downloaded at www.vortex9.org/vortex.html.



Western Ghats Freshwater Biodiversity Conservation Teaching Workshop // B.A. Daniel

This trainers training program is a follow-up project of Critical Ecosystem Partnership Fund (CEPF) funded status assessments of freshwater ecosystems in Western Ghats, India. The workshop objective is to disseminate results of the assessment to create awareness in local communities amongst a range of stakeholders. A teaching guide has been developed by Zoo Outreach Organisation (ZOO) and Wildlife Information Liaison Development (WILD) as part of this ongoing project. Four major freshwater groups that have been assessed—fish, molluscs, odonates, and aquatic plants—are covered in the teaching guide. Selected educators from all five states of Western Ghats (Kerala, Tamil Nadu, Karnataka, Goa, and Maharashtra) will be invited to the workshop, but ultimately the target group will be local communities and heads, school children, school educators, NGOs, forest personnel and policy makers. The guide's approach is to teach both non-traditional and traditional educators to adopt new methods. The new techniques and activities are more effective in influencing comprehension, retention, and behavioral changes. The workshop will be conducted in Coimbatore, Tamil Nadu, India, during the third week of January 2013.