CBSG update

April 2016

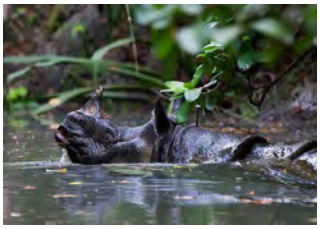
Announcements

Save the Date for the 2016 CBSG Annual Meeting
The 2016 CBSG Annual Meeting will be held 6-9 October, 2016 in Puebla, Mexico, hosted by Africam Safari. The meeting will focus on the influence of human population and behavior on species conservation planning. We hope you are able to join us for three days of illuminating discussions, intensive working groups, and connection with global conservation experts representing a range of disciplines. We will send out registration information as soon as possible.

Recent Publications

New Workshop Reports

Javan Rhino PHVA
http://www.cbsg.org/content/javan-rhino-phva-2015



Poweshiek Skipperling and Dakota Skipper *Ex Situ* Feasibility Assessment and Planning
http://www.cbsg.org/content/poweshiek-skipperling-and-dakota-skipper-2015

Workshop Report: A Conservation Breeding Programme for Plains-wanderers http://www.cbsg.org/content/plains-wanderer-workshop-report-2015

Central American River Turtle PHVA http://www.cbsg.org/content/mesoamerican-river-turtle-phva-2012

Workshop summaries for these reports are included at the end of this eUpdate.

CBSG eUpdate: April 2016

Contributors: Mariana Altrichter, Caroline Lees, Phil Miller, Kathy Traylor-Holzer

Thanks to our translators, Jean-Luc Berthier and Elizabeth Townsend (French), and Celia Sánchez (Spanish), for helping make this publication available in three languages.

In this issue:

*Visit us at **http://www.cbsg.org***

*This symbol indicates that a project follows the One Plan approach to species conservation planning. Click **here** to learn more about the One Plan approach.*

Meta-modeling Paper in *Biological Conservation*

Confronting the invasive species crisis with metamodel analysis: an explicit, two-species demographic assessment of an endangered bird and its brood parasite in Puerto Rico (Miller et al.) http://www.sciencedirect.com/science/article/pii/S0006320716300301

Giant Panda Article in *WAZA News*

CBSG Senior Program Officer Kathy Traylor-Holzer co-authored an article with Jonathan Ballou (SCBI) on the history, current status, and future of giant panda conservation. The article, *Is Conservation Really Black and White?,* can be found in the January issue of *WAZA News* as well as at http://www.cbsg.org/sites/cbsg.org/files/Traylor-Holzer_Ballou_2016.pdf.

Species Conservation Toolkit Initiative Update: April 2016

During the month of March, Species Conservation Toolkit Initiative (SCTI) members gave updates at the CBSG Strategic Committee Meeting, Joint TAG Chairs Meeting, and AZA Mid-Year Meeting, all in Omaha, NE. SCTI has been busy making updates to *PMx* software and is planning to release a new version in the coming months. New features will include capabilities to display some demographic data for projects with limited datasets (for example, very small sample size, only one sex, only unknowns) and improved genetic algorithms for handling animals with unknown ancestry. SCTI has also been working on updates to *Vortex* designed to improve its use with captive populations, making it easier to include subsets such as contracepted and post-reproductive animals in the model. These *Vortex* updates are currently in beta testing.

A recent publication by Miller et al. (*Biological Conservation* 196 (2016) 124–132) showcases the use of SCTI tools *Vortex* and *MetaModelManager* to simulate the interactions between an endangered species, the yellow-shouldered blackbird, and an invasive brood parasite, the shiny cowbird. *MetaModelManager* allows users to link individual models (which can be models of population dynamics, disease outbreak, movement—anything that can be computationally modeled) into one iterative simulation, in this case linking individual *Vortex* models of shiny cowbirds and yellow-shouldered blackbirds.

Recent Activities

Chacoan Peccary Conservation Planning Workshop

The Chacoan peccary (*Catagonus wagneri*), or taguá, is an endemic and endangered species that inhabits the thorn forests of the Gran Chaco of Bolivia, Paraguay, and Argentina. The situation of this rare peccary is deteriorating rapidly due to habitat destruction and overhunting. In early 2016, a conservation planning workshop for the Chacoan peccary was held in Asuncion, Paraguay, to create a conservation plan for the species.

© Leonardo Maffei

Thirty-one participants—including government officials and representatives of the local Indigenous, Campesinos, and Mennonite communities and NGOs—worked to identify a vision for the plan and the main threats to the species. Over several days, participants reviewed the species status and distribution and split into three working groups, where they determined goals and actions to address main threats including habitat loss, hunting, and lack of knowledge. The IUCN SSC G*uidelines on the Use of* Ex Situ *Management for Species Conservation* were applied during the planning process, and several roles for *ex situ* management were identified. CBSG facilitated and led population viability and habitat suitability analyses. The workshop report is currently in preparation.

Mariana Altrichter, co-Chair of the IUCN SSC Peccary Specialist Group, said, “We recognized that many underlying causes of the major conservation challenges are unsurmountable and beyond our capacities to address. However, we do believe that we can make positive changes and increase the chances of survival for the species and for the Chaco ecological integrity. We trust that the governments of the three range countries will incorporate our results in their planning process as these are based on the best available scientific research and created by a representative group of stakeholders.”

The workshop was organized and planned by Mariana Altrichter and Harald Beck (IUCN SSC Peccary Specialist Group Chairs), Alberto Yanosky (Guyra Executive Director), Arnaud Desbiez (IUCN Peccary Specialist Group Red List Authority/CBSG Brasil Convenor), and Juan Campos (Tagua Project Field Coordinator CCCI). CBSG Brasil facilitated the workshop and Kristin Leus (Copenhagen Zoo/CBSG Europe) and Katia Ferraz (Wildlife Ecology, Management and Conservation Lab (LEMaC, Forest Science Department - ESALQ/USP)/CBSG Brasil) led the population viability and habitat suitability analyses. The workshop was funded by the Mohamed bin Zayed Species Conservation Fund, IUCN SSC Species Conservation Planning Sub-committee, CBSG, World Land Trust, Secretaría del Ambiente (SEAM), and Copenhagen Zoo.

Conservation Planning for the Chinese White Dolphin in the Pearl River Estuary, Part I: Population Viability Analysis

© WWF Hong Kong

The Pearl River Estuary near Hong Kong is perhaps the most intensively developed parcel of land and water on the planet. Extensive construction projects, including the Hong Kong-Zhuhai-Macau Bridge and the Hong Kong International Airport expansion, lead to large-scale marine habitat loss and degradation as well as significant levels of barge and ship traffic in the area. Inflow of industrial and agricultural pollution from the surrounding landscape leads to high levels of contaminants in the marine environment. High-speed ferries now operate across the estuary's waters, transporting large numbers of people from Hong Kong to Macau and surrounding cities. In this environment, the local population of the Indo-Pacific humpback dolphin (*Sousa chinensis*), known in these waters as the Chinese white dolphin, struggles to survive.

In view of concerns expressed by the people and government of Hong Kong, and indeed by the world conservation community, the Airport Authority Hong Kong (AAHK) wishes to establish a Research and Conservation Framework for the Chinese white dolphin to provide guidance on how to mitigate and monitor the potential impacts of human activities on the species throughout the estuary. Towards that end, Ocean Park Conservation Foundation (OPCFHK) reached out to CBSG to design and facilitate a conservation planning process to generate the framework. CBSG is working closely with the IUCN SSC Cetacean Specialist Group throughout the project. The first step in this process, coordinated by OPCFHK and funded by AAHK, features a population viability analysis (PVA) for the dolphins in the estuary. A workshop took place 30 March – 1 April in Hong Kong, where participants identified primary threats in the area, assembled species demographic data, and identified a strategy for using the PVA process to guide species conservation. This PVA effort will be followed by a second workshop in early 2017, where a diverse body of stakeholders will gather to craft the species' Conservation Framework.

Planning a Future for the Western Ground Parrot in Australia

© Jennene Riggs

Historically, the western ground parrot (*Pezoporus flaviventrus*) was found all along the coast of southwest Western Australia but had vanished from the west coast by 1900. The stronghold of the species is now a single location along the south coast. There are estimated to be fewer than 150 birds remaining in the wild. Extensive bushfires in late 2015 destroyed around 90% of the known occupied habitat of the species, magnifying the risk of extinction. A small number of birds have been brought into captivity as part of the recovery effort but so far no chicks have been reared successfully.

From March 30 – April 1, an emergency conservation planning workshop was hosted by the Western Australian Department of Parks and Wildlife in conjunction with the South Coast Threatened Birds Recovery Team. CBSG designed and facilitated the workshop. Over three days, 40 delegates from 19 organizations worked to consider the full suite of issues involved in conserving the species, to work through the immediate priorities for attention, and to explore new ideas for intervention as well as enhancements to existing action.

The workshop was generously supported by the Department of Parks and Wildlife, World Wildlife Fund, BirdLife Western Australia, South Coast Natural Resource Management Inc., Department of the Environment, and Friends of the Western Ground Parrot. Additional support was received from Perth Zoo, Bush Heritage, BirdLife Australia, and National Environment Science Program's Threatened Species Research Hub.

Global ICAP for Canids and Hyaenids

The global zoo community is embracing CBSG's One Plan approach and exploring options for assessing, modifying, and expanding their collections and conservation programs to better serve the conservation of species in the wild. An important step is to identify species' conservation needs and prioritize those that can be addressed effectively by targeted *ex situ* activities. In an effort to assist regional zoo associations in this task, CBSG has developed a new process—an Integrated Collection Assessment and Planning (ICAP) workshop. This essentially applies the decision process of the IUCN *ex situ* guidelines to the task of regional and/or global collection planning.

© Kathy Traylor-Holzer

The first inaugural ICAP was the Global ICAP for Canids and Hyaenids held in March in Omaha, organized by the AZA Canid and Hyaenid Taxon Advisory Group (TAG) and the corresponding EAZA and ZAA TAGs, and conducted in collaboration with the IUCN SSC Canid and Hyaenid Specialist Groups. Pre-workshop preparations were extensive, and included compilation of the following information for all canid and hyaenid taxa: 1) range, status and population trend in the wild, including Red List (RL) category of threat; 2) primary threats to wild populations; 3) species census data from all regional zoo associations; 4) demographic and genetic status of all *ex situ* populations (regional and global); and 5) any prior recommendations for *ex situ* management from existing PHVAs, CAMPs, RL assessments, recovery plans, or other conservation strategies. Field biologists and Specialist Group representatives were queried for detailed recommendations on potential *ex situ* contributions for each species.

All of this information was reviewed and considered by over 30 ICAP workshop participants representing six zoo associations (AZA, EAZA, ALPZA, PAAZA, ZAA and CZA), the Canid and Hyaenid Specialist Groups, IUCN, wildlife agencies, field researchers, and recovery team members. The group assessed 43 taxa, including those not held in captivity as well as currently managed species, and recommended *ex situ* activities, as appropriate, on a regional and/or global scale. This comprehensive assessment will serve as a framework upon which zoo associations can draw for regional collection planning. Institutions, species programs, and TAGs can use it to guide conservation education messaging, *in situ* field support, and other conservation activities. Workshop collaborators hope that the results will also be used in future discussions about creating the first fully integrated global conservation plan for the world's canid and hyaenid species. CBSG's ICAP process enhances species conservation by integrating *in situ* and *ex situ* efforts and promoting collaboration among regional associations, field-based conservationists, and IUCN SSC Specialist Groups. The workshop report will be available this summer on the CBSG website.

Intensive Meetings for Intensive Population Management

While the air may have been chilly outside, Omaha, NE, was a hotspot for *ex situ* population management in March. It hosted a variety of meetings connected to the annual gathering of species program leaders at the AZA Mid-Year Meeting. In addition to facilitating the Canid and Hyaenid ICAP, CBSG participated in the second Joint Taxon Advisory Group (TAG) Chairs meeting, an Orangutan Regional Species Management Plan (RSMP) meeting, and meetings of WAZA's Committee for Population Management (CPM) and AZA's Small Population Management Advisory Group (SPMAG). At the Joint TAG meeting CBSG gave a presentation on partnering with wildlife agencies to assess *ex situ* conservation potential using the recent threatened prairie butterfly, greater sage grouse, and whooping crane workshops as examples. CBSG also assisted the Species Conservation Toolkit Initiative (SCTI) in a mini-training discussion on the use of *PMx* management sets for meta-population management, such as inter-regional zoo programs and release programs using captive stock.

Recovery Planning for the Colorado Pikeminnow in the Southwest United States

© Joseph R. Tomelleri

CBSG recently worked with the United States Fish and Wildlife Service (USFWS) and other stakeholders on a population viability analysis (PVA) of the San Juan River population of the Colorado pikeminnow (*Ptychocheilus lucius*) in the southwestern United States. This PVA was intended to evaluate the impact on population dynamics of the deposition of mercury (Hg) in the watershed and river ecosystem and resulting bio-accumulation in individual fish. This project culminated in a detailed report submitted to the funding organization in July 2014.

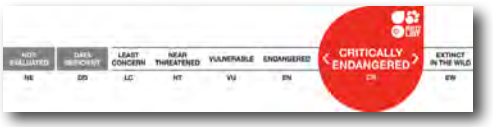
Based on the success of the San Juan River analysis, USFWS contacted CBSG again in 2015 with a proposal to expand the earlier PVA to include all populations of the pikeminnow throughout its current range. This request emerged from discussions among stakeholders in the species' Recovery Program, which includes the Upper Colorado River Basin as well as the San Juan River Basin. The results of the PVA will be used by USFWS to evaluate and refine the downlisting criteria and to determine if the species should be downlisted to threatened by evaluating near-term risk of extinction. The PVA will also be used to develop delisting criteria (i.e., threats and demographics-based criteria that avoid long-term risk of extinction). If the PVA supports viable persistent populations, USFWS could begin a rule-making process for reclassification.

The PVA process began with a kick-off meeting outside of Denver, CO in early March, where CBSG presented the proposed PVA framework and structure. Species biologists and recovery experts summarized the current conservation status of the pikeminnow and the availability of demographic and ecological data appropriate for the planned analysis. Meeting participants outlined a series of issues and questions appropriate for evaluation by the PVA process, and generated a draft timeline of activities that will lead to a final project report by late 2016.

Javan Rhino *(Rhinoceros sondaicus)*

The last surviving population of Critically Endangered Javan rhinos (*Rhinoceros sondaicus*) lives in Ujung Kulon National Park, the largest remaining tract of lowland tropical forest on the island of Java. This population has been restricted to Ujung Kulon since the 1930s, with total abundance hovering around 40 to 50 individuals for several decades. The population appears to be stable, perhaps even increasing, based upon the most recent field research results. However, the park probably is nearing carrying capacity and the rhino population is unlikely to increase without more intensive management efforts. Learn more about the species at the IUCN Red List.

In early 2015, a Population and Habitat Viability Assessment (PHVA) workshop was conducted in West Java to utilize available biological data and expert knowledge to assess the risks of extinction for Javan rhinos.



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Priority Goals

The workshop participants identified key threats to species persistence and evaluated extinction risk using a quantitative risk assessment methodology. Focused discussions around species management, habitat management, and stakeholder engagement led to important actions laid out by topic-based working groups. **Click on the text in the table below to learn more about each goal and related actions.**

The Javan rhino population is managed to achieve genetic and demographic viability through increasing the abundance of rhino to at least 80 individuals, in at least two sites, by 2025.
The habitat quality for Javan rhino is improved in Ujung Kulon National Park, and additional habitat in a second site is identified and managed to accommodate growth of the Javan rhino population to at least 80 individuals by 2025.
By 2025, all relative stakeholders are fully supportive of the Javan rhino conservation program because they are empowered to be involved in the most appropriate way.
By 2025, there is improved understanding and management of the ecological factors limiting Javan rhino population growth.
By 2025 and beyond, zero poaching of Javan rhino is maintained.
Regulations are revised on habitat management in the core zone of Ujung Kulon National Park to control the spread of Arenga palm. By 2025, 10,000 hectares of Arenga palm are removed to expand the suitable habitat available to Javan rhino and to increase the Park's carrying capacity.
By 2025, there are no illegal activities by local communities inside Ujung Kulon National Park because of a close, trusting and mutually beneficial partnership between those communities and the National Park.
By 2025, all communities champion the Javan rhino conservation program due to active involvement in (50% of the 2 adjacent villages) and high knowledge of (100% of 19 buffer zone villages) of conservation program activities.
By 2025, human encroachment, poaching threat, human disturbance, and risk of disease transmission are reduced by at least 50%.
By 2025, communities no longer extract natural resources from the rhino zone within Ujung Kulon National Park through the implementation of a government-wide green economic development masterplan across the Park buffer zone that increases local livelihoods.
By 2025, the Javan rhino conservation program is implemented in full and on time.

Full workshop report available at: http://www.cbsg.org/content/javan-rhino-phva-2015
Workshop organized by: International Rhino Foundation, World Wildlife Fund, IUCN SSC Asian Rhino Specialist Group
Workshop sponsors: United States Fish and Wildlife Service and Taman Safari Indonesia
Workshop design and facilitation: IUCN SSC Conservation Breeding Specialist Group (CBSG)

Poweshiek Skipperling (*Oarisma poweshiek*) and Dakota Skipper (*Hesperia dacotae*)

The Poweshiek skipperling (*Oarisma poweshiek*) and Dakota skipper (*Hesperia dacotae*) are small butterfly species found in remnant pockets of native prairie in the north-central United States and south-central Canada. Both species are increasingly threatened by a wide array of anthropogenic activities and processes, ranging from habitat conversion to pesticide use to climate change.

In addition to implementing active habitat and population management efforts on the ground, experts managing both the Poweshiek skipperling and the Dakota skipper are now exploring options for intensive *ex situ* population management to improve the long-term status of these species in their native habitats. United States Fish and Wildlife Service and Minnesota Zoo invited the IUCN SSC Conservation Breeding Specialist Group (CBSG) to plan and facilitate a participatory workshop process. CBSG used the IUCN SSC *Guidelines on the Use of* Ex Situ *Management for Species Conservation* as an aid to evaluate the feasibility of incorporating an *ex situ* management element into the broader conservation activities for both species.

Poweshiek skipperling © Minnesota Zoo

Dakota skippers © Minnesota Zoo

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Workshop Results

The broad objectives of the workshop were to review the status of the species and the threats to their long-term persistence; define the role(s) that *ex situ* management could play in the overall conservation of the species; determine the characteristics of the *ex situ* population required to fulfill each potential role; identify the feasibility and risks associated with each potential *ex situ* role; and make an informed and transparent decision on if and how to utilize *ex situ* options in overall species conservation. Wild population management options were also considered. Participants chose a mixed approach to population management for both species, as shown below. **Click on the text in the table below to learn more about each approach and related actions**.

Poweshiek Skipperling
Establish a head-start program to augment extant locations for reinforcement (intra-site). Increase population size and recruitment in the wild. Increase survivorship during the most sensitive life stages, bypassing presumed high mortality in the early life stages.
Conduct research on a surrogate species to inform *ex situ* programs and also to inform land management decisions for Poweshiek skipperling.
Establish an insurance population (long-term goal based on breeding research).
Reintroduce to locations with historical records (inter-site), but are thought to be extirpated (long-term goal based on disease and parasite research).

Click **here** to view the action plan for population management of Poweshiek skipperling.

Dakota Skipper
Restoration of Dakota skipper at sites within the species' historical range where it has been extirpated.
Provision of Dakota skippers for research projects that are integral to the species' conservation.
Completion of a protocol that could be used by zoos or other facilities to manage the Dakota skipper *ex situ*.

Click **here** to view the action plan for population management of Dakota skipper.

Full workshop report available at: http://www.cbsg.org/content/poweshiek-skipperling-and-dakota-skipper-ex-situ-assessment-and-planning-workshop-2015
Workshop organized by: Minnesota Zoo
Workshop sponsors: United States Fish and Wildlife Service and Minnesota Zoo Foundation
Workshop design and facilitation: IUCN SSC Conservation Breeding Specialist Group (CBSG)

Plains-wanderer *(Pedionomus torquatus)*

The plains-wanderer is a quail-like ground bird endemic to Australia. The sole living representative of the family *Pedionomidae* and genus *Pedionomus*, it was recently up-listed to Critically Endangered on the Australian list of threatened species. There are estimated to be 250-1000 birds remaining in the wild, a record low for the species. Ongoing loss of good habitat to agriculture and grazing regimes that do not promote optimal plains-wanderer habitat are considered the principle causes of the long-term decline. There remains uncertainty about the nature and role of other factors in the recent losses. Learn more at the IUCN Red List.

The National Recovery Plan for the species attaches a high priority to investigating the feasibility and value of establishing a captive breeding program. In August 2015, a workshop was convened to explore these questions.

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Priority Goals

Using the IUCN SSC *Guidelines on the Use of* Ex situ *Management for Species Conservation* as a framework for discussion, participants concluded that a well-managed captive program would be both of critical importance to the immediate security of the species and likely to increase significantly the chances of successful recovery following implementation of *in situ* management actions. To establish the required program and to ensure its integration with *in situ* measures, the following priority goals were agreed. **Click on the text in the table below to learn more about each goal and related actions.**

Gain approvals and collect a small number of birds from the wild for captive husbandry research and development.
Pursue approval, priority status, and funding support for the plains-wanderer conservation project from the NSW Government.
Pursue options for prioritising and resourcing plains-wanderer conservation actions in the State of Victoria.
Secure support from potential captive program partners.
Establish the required agreements between governments and any participating captive institutions.
Complete a captive management plan and husbandry manual to support the agreed program goals.
Review the outcomes of 2 and 3 and, if favourable, pursue next steps in program expansion (facility construction, founder collection, and release site preparation).

Full workshop report available at: http://www.cbsg.org/content/plains-wanderer-workshop-report-2015
Workshop organized by: Office of Environment and Heritage, New South Wales
Workshop sponsors: Office of Environment and Heritage, New South Wales
Workshop host: Department of Environment in Canberra
Workshop design and facilitation: IUCN SSC Conservation Breeding Specialist Group (CBSG)