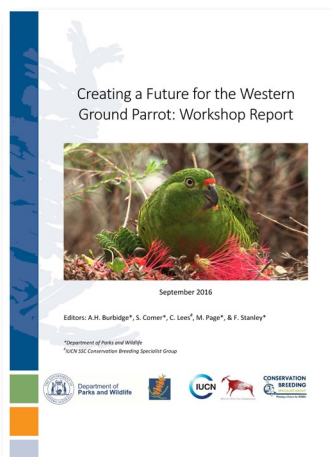
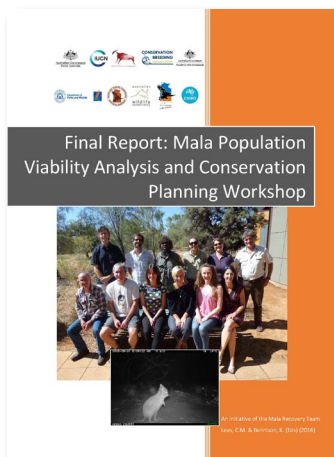


Publications

New Workshop Reports



- **Mala PHVA** (2015)
- **IUCN Manual of Procedures for Disease Risk Analysis** in Spanish (2015)
- **Western Ground Parrot Workshop** (2016)
- **Chacoan Peccary Conservation Strategy** (2016)

Recent Activities

Eastern Barred Bandicoot Disease Risk Analysis

A recovery program for the Critically Endangered eastern barred bandicoot (*Parameles gunnii*), which is endemic to southeastern Australia, was initiated in 1989. Captive breeding and other intensive management efforts have driven the population to grow from a founder base of just 19 individuals to 1,000 animals, and further release sites are needed. Phillip and French Islands off the southern coast of Victoria have been identified as areas with suitable habitat, but they are outside the species' historic range.

As part of its due diligence in assessing the suitability of these islands, Zoos Victoria commissioned a comprehensive disease risk analysis (DRA) incorporating a two-day workshop facilitated by CBSG Australasia. Sixteen people representing eight stakeholder groups contributed a combination of veterinary, epidemiology, public health, diagnostic, ecology and reproductive biology expertise and local community representation. This knowledgeable and enthusiastic group identified, prioritized and assessed disease risks associated with translocations, both to eastern barred bandicoots as well as to the wildlife, people, and domestic animals resident on the island. The workshop drew on the evidence-based, systematic, and transparent processes described in the Manual of Procedures for Wildlife Disease Risk Analysis published by IUCN SSC and the World Organisation for Animal Health (OIE). The final report will be available soon through the CBSG website.

CBSG eUpdate: October 2016

Contributors: Onnie Byers, Markus Gusset, Richard Jakob-Hoff, Bob Lacy, 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.



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PVA for American Bison Herds: Part Two

CBSG is continuing our collaboration with the IUCN North America Bison Specialist Group (ABSG), Wildlife Conservation Society (WCS), and the National Park Service (NPS) to assess the viability of American bison (*Bison bison*) herds. This iconic species represents one of the most dramatic conservation stories in North America, and it recently became the National Mammal of the United States. While the species has made a remarkable comeback, most herds are relatively small, isolated, intensively managed, and face genetic challenges.

Over the past year, CBSG worked with the ABSG, WCS, and NPS to produce a population viability analysis (PVA) for the eight large free-ranging herds of plains bison (*B.b. bison*) and wood bison (*B.b. athabasca*) deemed by ABSG as “functioning as wild” based on demographic, genetic, ecological and management-related factors. This PVA is informing the revision of the 2008 Red List assessment for American bison that is currently underway.

This PVA provides a base model for expansion to assess the viability of all bison herds federally managed by the US Department of the Interior (DOI). In August, CBSG led a second bison PVA workshop in Fort Collins, CO, with participants from ABSG, NPS, US Fish and Wildlife Service, Bureau of Land Management, and wildlife managers from Canada and Mexico, to parameterize the *VORTEX* model for 22 DOI plains bison herds. Participants also identified herd and meta-population goals, modeling questions, and opportunities for inter-agency collaboration. These PVA models will incorporate complex, herd-specific genetic data and population management strategies. The first task will be to assess the viability of each herd in isolation under different management options; in 2017 the project will explore meta-population strategies involving inter-herd animal exchanges primarily for genetic augmentation. PVA results will help guide DOI’s future management of this species in North America.



Conservation planning for Raffles' Banded Langur

The Raffles' banded langur (*Presbytis femoralis femoralis*) was first identified by Sir Stamford Raffles in Singapore, and is also found in southern Peninsular Malaysia. Fewer than 60 Raffles' banded langurs are left in Singapore, while in Malaysia too little is known to form an estimate. The 2016 IUCN Red List classifies the subspecies as Endangered, elevated from Vulnerable in the 2008 assessment.

On 1-2 August, 31 stakeholders from 15 organizations met at the Singapore Zoo to plan a future for the Raffles' banded langur in Malaysia and Singapore. The workshop was organized and sponsored by Wildlife Reserves Singapore and facilitated by CBSG. Participants included representatives from the IUCN SSC Primate Specialist Group, Malaysian and Singaporean government agencies, conservation NGOs, and universities.

Threats to the species include the loss, fragmentation and degradation of habitat as a result of urban development in Singapore and agricultural conversion in Malaysia, which have reduced the distribution of the Raffles' banded langur to a number of small, isolated populations across its range. These population fragments have a heightened risk of loss from the effects of genetic deterioration, extreme weather, disease outbreak, and other catastrophic events. To begin to tackle these issues, participants agreed on a long-term vision and associated conservation goals. A thorough analysis of threats to the species and other obstacles to achieving the vision and goals led participants to develop objectives and actions for on-the-ground conservation. Important areas for action were identified as habitat and population management, data gathering, and communication and awareness-raising. The workshop report is in review and will be available shortly.



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Recovery Planning for the Colorado Pikeminnow in the Southwest United States

Our work with the US Fish and Wildlife Service (USFWS) on recovery planning for the Colorado pikeminnow continues. CBSG has developed a set of detailed population dynamics models for each of the three river subbasins where pikeminnow are currently found (Green River, Upper Colorado River, and San Juan River subbasins). These models are designed to track recent changes in adult fish abundance since the early 1990s as a means of validating model mechanics. This type of “retrospective” analysis is also valuable for stimulating conversation around the proposed factors that contribute to the growth or decline of pikeminnow populations in the different subbasins.

CBSG presented these models at a workshop in August, and the nature of the resulting discussions helped species managers understand the value of this detailed modeling approach and how it can be used to explore the relationships between river management and pikeminnow population dynamics. Based on this understanding, pikeminnow biologists are now analyzing their data in more detail than ever before in an attempt to uncover new information that is important for the species recovery process. Specific areas of investigation focus on the management of non-native fish species that prey on juvenile pikeminnow and the relationship between river flow in the spring and pikeminnow offspring production. These areas of research will inform the next round of population viability modeling over the next phase of the project that will likely conclude in spring 2017.



Encouraging the One Plan Approach and Use of *Ex Situ* Tools

The global zoo community has embraced the One Plan approach (OPA) philosophy for species conservation, but for many it is unclear how to convert this idea into action. The field conservation community, as a whole, is less familiar with the concept and with the full range of conservation options offered by *ex situ* tools. CBSG is striving to increase the exposure of the OPA and tools to the field conservation community and to provide workshop processes for their implementation.

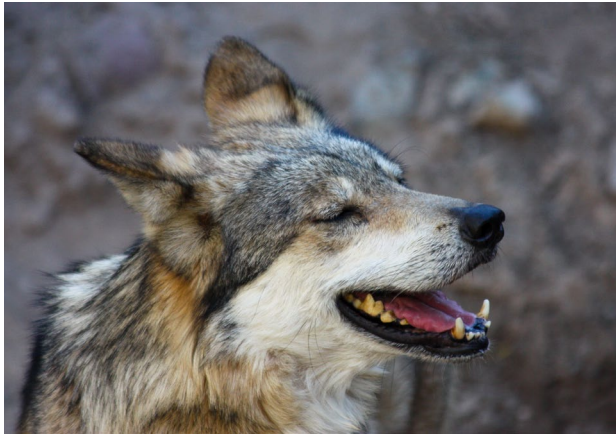
In July, CBSG presented these ideas in the Conservation Planning session at the North American Congress for Conservation Biology in Madison, Wisconsin. Recently we gave a similar presentation to The Wildlife Society in Raleigh, North Carolina in October as part of an invited symposium on zoos as conservation partners. In both presentations we described this important concept and offered a variety of tools and processes to help bring it to fruition. CBSG highlighted the IUCN *Guidelines on the Use of Ex Situ Management for Species Conservation* to provide a decision-making framework upon which conservation planning activities can be customized. Two CBSG workshops offered examples of different methods for applying this process: an *ex situ* planning exercise for threatened prairie butterflies led by the US Fish and Wildlife Service and the Minnesota Zoo, and an Integrated Collection Assessment and Prioritization (ICAP) workshop for 43 canid and hyaenid taxa to identify *ex situ* conservation roles involving the global zoo community, IUCN specialist groups, and field conservationists. These presentations encouraged the field conservation community to use the *ex situ* guidelines to consider the broad range of *ex situ* options and provided concrete but very different examples of how these decisions might be made within an OPA framework.



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Mexican Wolf Recovery Planning Update

CBSG's work continues with federal and state wildlife management authorities in the United States and Mexico on Mexican wolf recovery planning. Most recently, this work took us to Albuquerque, New Mexico in late August 2016, where CBSG facilitated the fourth workshop in this complex project. A bi-national team of habitat ecologists presented the results of their detailed habitat suitability analysis, which is designed to identify promising new habitat patches (primarily in



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northern Mexico) that could serve as new release sites for wolves. These new sites can help to satisfy the broad recovery goals and objectives discussed in the evolving recovery plan for the species.

In addition to the workshop facilitation component, CBSG continues to develop and expand the population dynamics model being used to evaluate long-term demographic and genetic viability of the Mexican wolf across its historic range. We are adding a detailed captive population component to the *VORTEX*-based model. This feature will allow us to explore a range of *ex situ* management conditions that could potentially serve the needs of the wild population through releases of captive-born animals to the wild.

Our next workshop will be held in Arizona in early November 2016. We will present preliminary results of demographic analysis designed to identify key parameters to target for effective wolf population management. In addition, we will work with the management communities to derive a set of population and/or habitat management scenarios that can be tested for their performance and efficiency using the demographic modeling tool.

The full range of federal and state management authorities involved in Mexican wolf conservation continue to compliment CBSG for their effective facilitation and oversight of this PVA-focused project. We remain dedicated to seeing the project through to its completion in the first half of 2017.

Providing Scientific Guidance to the Source Population Alliance

The Source Population Alliance (SPA) brings together experienced participants from conservation centers, private landowners, and zoological parks to maintain sustainable populations of endangered wildlife and to facilitate breeding of these species so that they may ultimately be returned to their native habitat. The SPA is closely linked to the Conservation Centers for Species Survival (C2S2), a consortium of large breeding centers from the public and private sectors that are dedicated to bringing novel approaches to conserving wildlife. The Alliance is currently targeting four priority ungulate species for conservation activities—addax, addra gazelle, scimitar-horned oryx, and sable antelope—through metapopulation management among North American accredited zoos and private sector landowners. This scientifically rigorous management approach is designed to achieve the population abundance necessary to provide insurance, avoid extinction, and ensure healthy and socially resilient herds.

CBSG staff met with the SPA Executive Committee and member institutions outside Austin, Texas in September to discuss the use of predictive models of wildlife population dynamics as a tool for setting quantitative targets for successful management of SPA target species. These tools, based on the same models used in our species conservation planning workshop process to evaluate wildlife population viability, can help SPA partners identify the number of institutions that should participate and the size of their herds required to create a demographically and genetically viable wildlife metapopulation. Understanding the biological principles behind these models is a key step in getting private landowners to see the value of their participation in SPA. This is precisely where CBSG can use our expertise in applying and communicating complex scientific concepts to a broad audience.

We will continue to work with the SPA membership to collect the appropriate data on the animals in their herds. With dedicated participation from a broad range of public and private institutions, and with the kinds of analysis and deliberation CBSG brings to complex wildlife management programs, we are confident that we can help the Source Population Alliance fulfill their organizational goals in wildlife conservation.

The IUCN World Conservation Congress

More than nine thousand people from 190 nations attended the World Conservation Congress (WCC) in Hawaii, which took place 1-10 September, 2016. This was the first time that this quadrennial meeting, the largest conservation event in the world, was held in the United States. It was an intensely busy week with 1380 entries on the official program. The WCC is made up of two distinct parts: The Forum and the Members' Assembly.

The Forum allows people from all around the world discuss and develop solutions to some of the world's most pressing conservation challenges. Events include high-level dialogues, brief seminars, knowledge cafes, and day-long training workshops. CBSG presented its planning work at a seminar on SSC species conservation planning and at a full-day campus on species recovery projects.



At least 20 CBSG members were present at the WCC and some were able to meet for a group photograph.

The Members' Assembly follows the forum and is the decision-making portion of the Congress. Voting members of IUCN debate and vote on motions, approve the IUCN quadrennial program, and elect the IUCN Council, President, and Commission Chairs. At the 2016 Members' Assembly, 105 resolutions were approved. For the first time, the motions underpinning these resolutions were the subject of facilitated electronic debates prior to the Congress, which meant that only the most controversial topics needed to be brought to Hawaii for face-to-face discussion. CBSG provided support to the electronic debate and facilitated two of the most contentious contact groups (meetings in which all those with a stake in a motion come together to work towards consensus on the text of the motion before it goes to the floor for a vote): the motion to ban lead in all ammunition used for hunting and the motion to ban all domestic trade in elephant ivory. After grueling and often tension-filled sessions, the groups agreed on the text and both motions passed.

Commission mandates and strategic plans are voted on at the Members' assembly. The SSC mandate, containing a substantially increased commitment to species conservation planning, was approved. IUCN President Mr. Zhang Xinsheng (Jahng Zinshang) was re-elected and, after doing an incredible job at the helm for eight years, Simon Stuart stepped down as SSC Chair. Simon's deputy Chair, Jon Paul Rodríguez, was elected to replace him. Jon Paul's first involvement with IUCN was as a member of CBSG and he remains highly supportive. We look forward to supporting him in his new role.



A Global Animal Welfare Assessment Framework for Zoos and Aquariums

The first Zoo and Aquarium Accreditation Summit was convened and sponsored by the World Association of Zoos and Aquariums (WAZA), hosted by Wildlife Reserves Singapore, and facilitated by CBSG from 3 to 6 August 2016. Twenty-four participants from 17 countries worked together to build a common understanding of animal welfare-based accreditation. They developed and tested a variety of animal welfare-based accreditation models and finally drafted a framework that WAZA hopes will *serve as a globally applicable and easily understandable system to assess the welfare of animals in zoos and aquariums, with the aim of promoting the animals' physical and psychological condition.*

The framework is based on the *World Zoo and Aquarium Animal Welfare Strategy* and allows the user to identify concerns and generate recommendations for improving animal welfare.

2016 CBSG Annual Meeting

In early October, the CBSG community gathered in Puebla, Mexico for the 2016 CBSG Annual Meeting, which was wonderfully hosted by Africam Safari. Participants from 25 countries focused their energy on thinking about how human population growth and human behavior affect species conservation planning, and how CBSG can respond.

Our keynote speaker Mark Barone (EngenderHealth) discussed projections for global human population growth. He described how providing access to family planning resources and empowering and educating women and girls across the world is the most effective response to the booming global population and the problems that come along with it. Sarah Bexell (University of Denver/Chengdu Research Base of Giant Panda Breeding) led the group in an activity that asked participants to consider why conservationists avoid talking about human population growth and ways we could start doing so now (look for a paper or report on the results of this activity coming soon).

Working groups explored topics related to the theme as well as other relevant issues to our community, such as prioritizing the collection of samples for genetic rescue, mini-training sessions in *VORTEX* and *META MODEL MANAGER*, and integrating species distribution models into CBSG processes. Some of the actions formed as a result of these working groups include:

1. Reviewing the CBSG project library to retrospectively analyze the value of adding human dimension into planning processes and how it contributed to successes.
2. Developing a list of social science resources and contact information for the CBSG community.
3. Organizing a training program for species distribution modelers to be integrated into the CBSG workshop process.

Reports of the working groups and a full report of the meeting proceedings are in progress and will be available soon.

While we got plenty of work accomplished during the day, the evenings were filled with culinary experiences in Puebla and fantastic tours that allowed participants to see the beautiful city and the remarkable Africam Safari. Our hosts ensured that the meeting ended memorably with a celebration featuring delicious local food, games and prizes, traditional dances, and fun for all the participants. That evening, Onnie presented GCN board chair Jo Gipps with the Chair's Citation of Excellence Award in recognition of his 25 years of dedication to CBSG's conservation mission, values, and unique spirit; his continuing contribution to its work and governance; and his deep affection for CBSG.

CBSG is grateful to Amy Camacho and the Africam Safari staff for their excellent hosting and seamless organization of the entire meeting from beginning to end!



Photos: Africam Safari

Species Conservation Toolkit Initiative Update

In response to suggestions from users, we continue to make a number of bug fixes and enhancements to the *PMx* software for population management of *ex situ* populations and the *VORTEX* software for population viability analysis. Please keep those suggestions coming in! (You can send ideas to scti@vortex10.org.) Also, Taylor Callicrate recently added to both *VORTEX* and *META MODEL MANAGER* the ability for the programs to call R scripts to calculate dynamic simulation parameters from models of changing environmental variables and threats experienced by the population. Bob Lacy used this new feature to make projections for the Canada Department of Fisheries and Oceans of the beluga whale population in the St. Lawrence estuary, as predicted from models of the demographic impacts of changing climate (declining winter ice cover and increasing summer water temperature), prey availability, contaminants, and noise disturbance.

SCTI

**The Species Conservation
Toolkit Initiative**

At the CBSG annual meeting in Puebla, we had one working group dedicated to a short training session on several of the more powerful but complex features in the *VORTEX* and *META MODEL MANAGER* software. (See the upcoming meeting proceedings for a full report of the working group.) We also made the exciting announcement there that we are now seeking to hire a Coordinator of Training for SCTI, with funding from our partners sufficient to support the position for at least two years. The announcement of this SCTI position is below.

Job Announcement: Coordinator of Training, Species Conservation

The Chicago Zoological Society / Brookfield Zoo is seeking applicants for the position of Coordinator of Training, Species Conservation. The Coordinator of Training, Species Conservation will develop and implement a program of training and user support for the software tools of the Species Conservation Toolkit Initiative ("SCTI"), a partnership to ensure that the new innovations and tools needed for species risk assessment, evaluating conservation actions, and managing populations are developed, globally available, and used effectively. This position will work with conservation scientists of the SCTI to develop and implement a program to build the capacity of conservation scientists, natural resource managers, and students to use the software tools effectively to further species conservation. This position will develop innovative training and support methods, work with content experts, and manage logistics and budgets for training programs.

If interested in being considered for this opportunity, please visit the CZS Career Center at www.czs.org/careers to obtain more details about the position, including position requirements, and to apply by submitting your profile. Please look for requisition number 1246BR. The Chicago Zoological Society is an Equal Opportunity Employer / Affirmative Action Employer – Minorities / Women / Veterans / Disabled.