Sun bear. (Photo: Free the Bears)
Read about the first Sun Bear Symposium that took place in Malaysia on pages 34-35.
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An Incredible Opportunity

The strategic membership survey carried out in 2015 has provided IBA with very valuable insights about how our membership views us as an organization. Most notable, IBA’s membership has expressed a desire to explore how IBA can become a more effective and global player in promoting science-based management and conservation of bears. An anonymous donor has generously stepped up and engaged the management consulting firm Oliver Wyman to complete a 10-12 week study of IBA to identify an approach to achieving these objectives. Oliver Wyman is a world-leading global management consultancy with a strong background in organizational effectiveness and strategy. Oliver Wyman will conduct this study “pro bono”, i.e., it will be a free service to benefit IBA and society at large.

It is my belief that this represents a once-in-a-lifetime opportunity for IBA to help shape a plan for the IBA’s future organization and fundraising efforts while protecting its scientific integrity and member support. Oliver Wyman has asked IBA for a list of 20-30 key individuals as well as involved members, age geographic representation, to conduct in depth interviews. These interviews:

- aim to evaluate the organizational structure and key challenges facing IBA;
- explore how far we want to go in developing fundraising capabilities to increase IBA’s outreach in science-based management and conservation of bear populations and their habitats;
- identify possible partners (e.g., foundations, individuals) to support fundraising or re-organization efforts;
- seek to crystallize the core message(s) to prospective donors related to the need for conservation and management efforts (e.g., “Why bear research and conservation is needed in this world”); and
- lay out core tenets of a framework for evaluating and potentially prioritizing conservation initiatives for funding.

Based on feedback I have heard from other interviewees as well as based on personal experience, some of these questions were surprisingly hard to answer in a precise and concise fashion. For example, what narrative should be at the heart of the IBA pitch for support the need for bear research and conservation that most effectively distances the IBA’s efforts from being perceived as an instance of “saving Bambi”? What is the broader ecological significance of bears? How should we position our efforts to make it clear that they are not duplicative relative to other conservation organizations’ efforts? I suspect that for most of us the answers to these questions are intuitively clear, however, that relating your thoughts in a convincing manner to a neutral audience is much more difficult.

My hope and expectation is that this review will help IBA to build a structure that allows us to grow as an organization and increases our conservation outreach while maintaining our core values that are rooted in a scientific understanding of bear ecology and management. We are very much looking forward to the recommendations by Oliver Wyman.

New Faces on Council and Ratification of Bylaws

IBA Council welcomes several new members. Mei-Hsiu Hwang has been elected as Vice President Eurasia. Mei-Hsiu is Associate Professor and Director of the Institute of Wildlife Conservation at the National Pingtung University of Science and Technology in Taiwan. She has dedicated herself to the conservation of the Asiatic/Formosan black bear. We also welcome new Council members Agnieszka (Aga) Sergiel and Marta de Barba. Aga is Assistant Professor at the Institute of Nature Conservation of Polish Academy of Sciences in Kraków, Poland. Her research focusses mainly on behavior and especially physiological indicators of stress in wild and captive bears. Marta is a research scientist at the Laboratory of Alpine Ecology at the Centre National de la Recherche Scientifique, Université Grenoble-Alpes, in Grenoble, France. Marta is a wildlife geneticist mainly working on brown bears. She is the heart, brains and soul of a large Europe-wide conservation project working on the functional connectivity of bear populations in Europe.

I would like to use the opportunity to express my gratitude to the departing Council members Klemen Jerina, Emre Can, and Santiago Molina. Thank you for your contribution to Council and IBA, and I hope that you will be able to contribute to IBA in a different function in the future.

IBA members have ratified changes to the IBA Bylaws. These new changes ensure a balanced turnover of Council seats during each election cycle. To facilitate this amendment, the Secretary and one Council seat currently in the America's cycle will transfer to the Eurasian election cycle in future elections.
The World’s Least Known Bear Species Gets its Day in the Sun

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In 1819, Thomas Stamford Raffles, then Governor-General of Bencoolen, a province in southern Sumatra, received a pet sun bear (Helarctos malayanus), purchased for him from a villager. Although these bears were then common on the island, and common as village pets, the species had not yet been described to science. That pet bear became the basis for the first scientific description of the species. “He was brought up in the nursery with the children; and, when admitted to my table, as was frequently the case, gave proof of his taste by refusing to eat any fruit but mangosteens, or to drink any wine but Champaign” (Raffles 1821).

Since that time, research has progressed slowly on this species, while threats have dramatically increased, due (most recently) to habitat loss from rapidly expanding oil palm and rubber plantations, combined with hunting, spurred by a burgeoning commercial market for parts. Until very recently it was thought that the species had been completely extirpated from 2 of 11 range countries (Bangladesh and China). Populations were estimated to be declining (by 30–70% in 30 years) in all other range countries. No telemetry projects have been conducted in the last 5 years. The number of current field projects focused on this species could be counted on 1 hand.

This was the backdrop for the first scientific symposium devoted to this species, held in September 2017 in Kuala Lumpur, Malaysia, organized by Free the Bears, the Bear Specialist Group and TRAFFIC Southeast Asia. The First International Symposium on Sun Bear Conservation and Management attracted 100 participants, including range state government representatives, researchers and students, veterinarians and captive animal specialists, NGO representatives, and journalists and educators. The event was comprised of 2 parts: a 3-day scientific symposium, followed by a 2-day conservation planning workshop. As the ultimate goal was to draft a global action plan for the species, a special effort was made to support government representatives to attend, as government backing will be vital for implementing the plan.

The IUCN/SSC is committed to developing Conservation Action Plans for all 23,000 Threatened species on the Red List. That is a huge task, not to mention the even larger task of implementing such plans. Among the 8 bears, a global action plan has been created only for the polar bear (Ursus maritimus). In Asia, country plans have been developed for bears in South Korea (2001), Taiwan (2012), and India (2012). The first step in developing a plan is to collect and summarize the available data on status and threats. That was the focus of the 3-day symposium.

The large number of participants and high level of interest generated by this symposium pleasantly surprised us. Having said that, we note that much of the work being done on this species is in captivity, as there are large numbers of animals in sanctuaries in Southeast Asia, derived from confiscations of pets, traded, and orphaned animals. It is ironic that the first scientific specimen was a pet, and captive bears remain both a continuing problem as well as a large focus of current studies.

The symposium encouraged presentation of information relevant specifically to conservation and management. The symposium differed from many scientific conferences (such as IBA conferences) in that the emphasis was on interactive workshops and group discussion, the results of which were systematically captured in SWOT analyses (Strengths, Weaknesses or internal constraints, Opportunities, and Threats or external constraints). There were no less than 22 workshops during the symposium, covering diverse topics from captive health and welfare, habitat use and ecology, monitoring methods, human behavior change to reduce demand for bear parts, and strategies to reduce snaring (which is at epidemic levels in Southeast Asia, directed at a host of species). There was a focus on building stronger links between ex-situ management and wild bear conservation.

One workshop asked the question: what research issues and projects focused on captive bears can contribute to wild bear conservation?

A 2-day workshop, following a 3-day symposium in Kuala Lumpur, was used to frame a rangewide conservation action plan for sun bears. Here Brian Crudge, from Free the Bears, and main organizer of symposium, explains his working group’s synthesis of issues related to sun bear poaching, one of the 2 main threats for this species.
A number of presentations documented experiments and efforts to test new methods to survey sun bears in the wild. Innovative new approaches included duct tape to capture hair samples (instead of barbed wire, which does not work well for the short hair of this species), mark–recapture camera trapping using unique chest marks, and large-scale interview surveys with local people. Symposium attendees “voted” to strive toward more unified monitoring methods (not just a single method) to facilitate comparison of results regionally. A standardized method of monitoring for Andean bears (Tremarctos ornatus) is now being used in several countries (Márquez et al. 2017), and was presented as a potential model for sun bears.

The symposium revealed that more data are being collected on sun bears than previously thought. Interesting results of sun bear surveys and ecological research was unveiled in previously little-known regions including western Myanmar, Sarawak (Malaysian Borneo), Bangladesh, and northeast India. These recent surveys are revealing that sun bears are still widespread in Southeast Asia’s forests, and persist even in some very degraded habitats — some new camera trap photos revealed that sun bears still exist in Bangladesh (just as recent camera trap video revealed presence of at least 1 bear in China, although only 1 km from the Myanmar border: Li et al 2017).

The 2-day conservation planning process that followed the symposium was expertly led by Caroline Lees of IUCN’s Conservation Planning Specialist Group. This specialist group is responsible for helping other specialist groups develop their conservation action plans. We began by creating an overarching vision that depicted our grand aspiration for sun bears (and their interactions with human society) in the future. Next we conducted an issues analysis that identified obstacles to achieving the vision. This led to the identification of 3 broad goals for sun bear conservation — reducing habitat loss, controlling poaching and trade in bear parts, and employing captive populations as ambassadors for changing human behavior. We defined detailed objectives, assumptions, actions, and steps forward toward achieving these goals.

A substantial part of the conservation planning process involved assessing what we know and what we don’t know (but need to know). For example, to what degree are sun bears truly “dependent” on forest? Other bear species have demonstrated great adaptability to land use changes caused by people. What about sun bears? Tropical forest is being rapidly converted to plantations in Southeast Asia, particularly oil palm plantations. But research on bears living at the edges of plantations has shown that some individuals may benefit nutritionally by feeding on the oil palm fruits. They enter at night to avoid people, and retreat to the forest during the day. Should we therefore be trying to make oil palm plantations more bear friendly? Or would this simply entice bears into a population sink? And would working with industry to mitigate the harshness of vast oil palm plantations justify continued conversion of forest? We cannot launch into an action plan aimed at such uncertain outcomes, so many of our recommendations were for more research.

Having participated in a few previous action plans, we know that sometimes plans are overambitious and unrealistic, and therefore cannot be implemented. But we also recognize that action plans serve to establish a shared strategy and context for disparate individuals and organizations to contribute to; they have also helped justify conservation projects, secure funding, and create a regional network of practitioners that support each other in the conservation of a species.

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Do You Have a Paper on Sun Bears in Your Head?

Among the 8 species of bears, sun bears (*Helarctos malayanus*) are often referred to as the least-known, in part because the number of published papers on this species is so low. What became evident at the sun bear symposium is that potentially valuable information exists, which could aid in conservation, but is not yet published (and may never be published). A group of people at the symposium expressed interest in making a push to publish a collection of such papers in *Ursus*. I volunteered to act as Associate Editor. Papers would be peer-reviewed, as per normal for *Ursus*, but would have some added assistance by me prior to review, if needed. The concept is that by doing this as a group, people will be more motivated to submit a paper; and when published, they can all come out together as a nice collection of information on this little-known species. The aim is to submit draft manuscripts to me during Feb–April, 2018.

This offer is not limited to people who attended the sun bear symposium. If you are interested in submitting a paper on anything related to sun bears (even if it’s just a concept at this stage), please contact Dave Garshelis (dave.garshelis@state.mn.us).

Plans are underway to create a collection of sun bear papers to publish in *Ursus*. The cover shown here is a hypothetical depiction of a future issue devoted to sun bears.
Learning About Bears - An Experience and Exchange Opportunity in Sweden

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I have been a student member of IBA since 2013 and attended my first IBA conference in 2016 in Anchorage, Alaska. There I made valuable connections with bear biologists from all over the world and met with people from the Scandinavian Brown Bear Research Project (SBBRP). As a student it is crucial to gain hands-on experience and knowledge about how research works, aside from the theory we learn at university. However, it is challenging to find an opportunity to gain such experiences and to discover a path for your own research. Therefore, I was very happy when Andreas Zedrosser invited me to visit the SBBRP during the following summer. An Experience and Exchange Grant from the IBA made it possible for me to travel to Scandinavia, to develop two small research projects, to carry out the necessary work in the field, and to help with other research activities. My research took place within the SBBRP and at the Large Predator Park in Orsa from 29 June - 18 September, 2017.

The SBBRP was established in 1984 and aims to understand the ecology of brown bears (Ursus arctos) in Scandinavia and to provide knowledge to management authorities and information for the general public. During my stay at the SBBRP research station, I collected and analyzed scat samples from GPS-collared brown bears to compare food composition with data from past years in order to detect possible changes in the food composition. Furthermore, I obtained experiences with other field projects, such as a berry abundance study, a den survey, and a seed dispersal study. For the SBBRP, volunteers and international students are an important part of the research activities, and students and volunteers have the possibility to contribute their ideas to the overall project.

Orsa Large Predator Park (OPP) is one of Europe’s largest predator parks known for its spacious natural enclosures and home to 10 predator species, including the brown bear. The SBBRP and OPP have a close research cooperation. I participated in the routine work in the park, including feeding and caring for the animals. In addition, I conducted a questionnaire survey to evaluate the knowledge of visitors about brown bears before entering the park and then again when exiting the park, and to evaluate how to improve education in zoos and parks. I also focused on the effect of a park visit on the general perception towards brown bears. A tragic accident happened at the park on 4 August, when a zookeeper was killed by a bear. Due to this terrible incident and its presence in the Swedish and international media, I later began focusing on the effect events like this have on the perception of visitors towards brown bears. The decision to continue the study, and with this focus was only taken after long discussions with park personnel and members of the SBBRP. Studies like this are impor-
The evaluation of both projects is currently in progress. The work on the different projects was diverse and my personal learning outcomes extensive. First, I got to know more about bears in Scandinavia and the inner workings of a research project. I also learned to design, prepare, and carry out a small study by myself. The people I have met provided me valuable advice for my future career, and I am looking forward to applying what I learned. Being totally integrated into all projects as a complete part of the team made it clear how important team work is in research.

After the terrible accident, naturally many questions and doubts arose in the minds of my colleagues and myself. It was extremely helpful to be able to talk openly about these thoughts with my colleagues in the park and at the field research station, without being ashamed or feeling that it is disrespectful to have these thoughts. For example, I wondered how this accident might change my perception of an animal that fascinates me, and that I would like to focus my research on. For me, it was important to stick to the facts: a zoo stays a zoo, no matter how big and natural the enclosures are. Therefore, the behavior of an animal in captivity cannot be entirely transferred to the way an animal might have reacted in the wild. Wild animals normally do not want to interact with humans and zoo animals do so daily. I am aware of the fact that lethal and non-lethal accidents with bears in the wild do happen occasionally, but still these two settings are not comparable in my opinion. The viewpoints on whether it is okay to keep animals in zoos or not, vary widely and I do not think an accident like this is the place for that argument. Talking with a variety of people after the accident, I received many questions about how to react to bears in the wild and if the bear is “dangerous”. I used to think this question was easy to answer, but after this accident I think more about how to phrase things. All we can do is to keep educating people about how bears naturally behave, and that accidents like this happen in the wild as well, but are not very likely and not entirely transferrable to wild bears.

In conclusion I can say the following: No, this accident did not change my perception of brown bears. But it absolutely changed my perception on what we should teach people about bears. In my opinion, we should work on giving them a more realistic picture, away from the dangerous beast or the cuddly cute bear. We should teach people about how bears naturally live, how likely it is to encounter a bear in the wild, and what possibly causes accidents. There are many sources of information at zoos and parks on these topics, but some of the information might not be attractive enough to catch a visitors attention. I hope that my study can help to discover how a zoo visit can change the views and knowledge of visitors, and how we can optimize education in this leisure learning setting.

During the last 2.5 months, my fascination for large carnivores grew proportionally with the new knowledge I gained, and I look forward to using this experience in the future. I want to thank the IBA for giving me this chance through an Experience and Exchange Grant. I also want to thank the SBBRP, especially Andreas Zedrosser and Sven Brunberg for all their support. A special thank you for their kind support and help goes to the staff at the Predator Park, especially in memoriam Robert Lindvall († 2017).
Perched on a rocky outcrop, Javier silently surveys the distant rugged slopes. Not far away, my children Max and Kyle, ages 8 and 10, are busy turning over rocks, when they exclaim delightedly: “A scorpion!” The 1-inch scorpion scuttles away at lightning speed, a momentary distraction from our main objective—spotting a wild spectacled bear (*Tremarctos ornatus*).

A few minutes later, Javier points out a tiny black dot moving across the arid terrain. It is a spectacled bear making its way from a water hole high up in the hills to the treed plain below us. We watch it for twenty minutes as it meanders towards a narrow band of trees further down the valley that harbour ripe sapote fruit. To learn more about our experience viewing spectacled bears in the wild, visit our blog post: https://maxkyle.wordpress.com/2016/11/06/the-search-for-the-spectacled-bear-continues/

This early morning outing was organized by Javier Vallejos Guerrero and his eldest son José. Javier and Canadian bear biologist Robyn Appleton are the co-founders of the Spectacled Bear Conservation Society (SBCS), a non-profit organization working to conserve spectacled bears in the dry forest of north-western Peru. The Society runs a Conservation Centre in Batan Grande, a small rural town with a population of 3,000.

In Canada, I am a wildlife manager in Jasper National Park, where I specialize in preventing and managing conflicts between people and wildlife. Accompanied by my family, I spent 1 month at the Conservation Centre in October 2016 as part of a 6-month sabbatical which took us to South America and Australia. My main objective was to contribute to bear conservation in Peru and gain experience complementary to my work in Canada. I also hoped to compare and contrast my work as a Canadian bear manager in a large national park with 2 million visitors annually to a smaller grass roots bear conservation effort in a less affluent setting.

Despite many differences in program delivery, the main components of the SBCS conservation program were surprisingly familiar: improving scientific understanding of bear ecology in the dry forest ecosystem, carrying out education and outreach to raise awareness of the importance of bear conservation, and building local capacity for involvement in conservation.

In the Canadian Rockies, where black (*Ursus americanus*) and grizzly (*U. arctos*) bears frequently cross paths with visitors and residents, interactions between people and bears are intensively managed. In comparison, spectacled bears are very shy and little is known about their biology and behaviour, particularly in the dry tropical forest. One of the key ways SBCS has built up a detailed knowledge of local bear distribution and habitat use, is through a network of remote cameras. Start-up funding for this program was provided by the IBA in 2008 and 2009.

Bear face extreme conditions in the dry open forest, but this environment, devoid of lush vegetation, offers bear viewing opportunities not found elsewhere. It also concentrates wildlife at scarce water holes where the remote cameras provide insights into bear biology. For most of the year, these bears survive by eating the wood of the pasallo tree. During a short but critical window, they feed on the fruit of the sapote tree (*Casimiroa edulis*) allowing them to build up their fat reserves. During one of our field trips we camped in the shade of a fruiting sapote tree. For more details, please visit our blog: https://maxkyle.wordpress.com/2016/10/29/searching-for-the-spectacled-bear-our-first-field-trip/

Given their cryptic habits, even local Peruvians may be unaware that spectacled bears are living a
A significant part of the SBCS program focuses on raising awareness of this species, the role it plays in the local ecosystem and threats to its long-term survival. While we were at the conservation centre, we helped the SBCS team carry out educational workshops with local elementary school students and participated in an outreach program in partnership with the Peruvian parks service. For more information on these activities, see our blog post: https://maxkyle.wordpress.com/2016/11/06/spectacled-bear-education-and-awareness/

SBCS is also building local capacity by training and developing Peruvians from rural backgrounds to be wildlife technicians and by providing local women with employment opportunities through a handicraft program. More recently, the organization has been pursuing strategic partnerships with cultural heritage protection groups, local villages (casarios) and other non-government organizations to promote the establishment of local protected areas that will protect both bears and the region’s rich archaeological resources.

Peru is a developing country that is lacking many of the basics that we take for granted in Canada, such as clean drinking water, reliable and safe infrastructure, regular and well-paying employment, systematic garbage collection and disposal. In this context, it can be challenging to make a case for funding conservation efforts for an animal that many Peruvians will never see in their lifetime. This makes the work of non-governmental organizations like SBCS all the more important.

I feel a renewed sense that the cumulative efforts of bear conservation groups around the globe are making a difference, and that the work of both governmental and non-governmental organizations is complementary and critical for the protection of bears worldwide.

I would like to thank the IBA Experience and Exchange Program for supporting this professional development opportunity and encourage others to take advantage of the program. For a summary of our experience at the conservation centre, see our blog post: https://maxkyle.wordpress.com/2016/11/18/one-month-later/
The Malayan sun bear (*Helarctos malayanus*) is an icon of Southeast Asia’s tropical forests. Large areas of habitat, however, have been lost to agriculture, timber, and conversion to oil palm and rubber plantations. Of all sun bear range countries, Malaysia has experienced the greatest amount of deforestation in recent years: 14.4% from 2000 - 2012. In addition to habitat loss, protected and unprotected areas in Malaysia experience intensive poaching for the illegal trade in bear parts. Curiously, sun bears remain the least-studied bear species in the world, and information on status and trend of populations is particularly lacking. Local extinctions of sun bear populations will almost certainly occur without scientific information to inform effective conservation policies with political and public support. A collaborative research program through Sunway University in Malaysia is now addressing these critical information needs. The initial objectives of the research program are to assess sun bear distribution and population genetic structure in Malaysia, and to identify landscape characteristics that support sun bear populations and maintain or enhance connectivity among them.

When Shyamala Ratnayeke joined the Faculty of Sunway University’s Department of Biological Sciences in Kuala Lumpur, she established a sun bear research collaborative with Lancaster University in the UK, the Bornean Sun Bear Conservation Centre in Sabah, Monash University in Malaysia, and my institution, the USGS Northern Rocky Mountain Science Center in Montana. She organized a field exchange in February 2017 to convene all project collaborators. An Experience & Exchange Grant from IBA allowed me to participate in this important exchange. The primary objective of the exchange was to help establish a Scientific Working Group that links the science of the Sun Bear Research Program with effective conservation measures for sun bears in Malaysia.

Malaysian students enrolled in the M.Sc. Life Sciences Program at Sunway University have embarked on 3 integrated components of the sun bear research program: 1) developing nuclear and mitochondrial markers to assess genetic variation (M.Sc. student Sherene Wai Ling Lai); 2) evaluating methods for occupancy and density estimation in Tabin Wildlife Reserve (M.Sc. student Thye Lim Tee); and 3) habitat selection in a landscape mosaic of commercial plantations and natural forests (M.Sc. student Wai Pak Ng).

On the first days of the work exchange, we reviewed and discussed genetic components of the project, and it was gratifying to see that graduate student Sherene Wai Ling Lai had already mapped the mitochondrial genome of sun bears based on 16,789 base pairs. She is currently developing mitochondrial markers for phylogeographic analyses. For the next two study components, we visited 2 field research sites in Sabah, Borneo (East Malaysia). The first field site was in Tabin Wildlife Reserve, a 1,123-km² forest reserve consisting of lowland dipterocarp rainforest. Incidentally, this was the area where the last Bornean rhinoceros (*Dicerorhinus sumatrensis harrissoni*; 1 of 3 subspecies of the Sumatran rhinoceros) in Malaysia survived in the wild; it was deemed extinct in Malaysia by 2015.1 The last 3 individuals were moved to captivity at Tabin Wildlife Reserve and we had a chance to watch them being fed. Seeing the last of these beautiful animals in captivity, the notion of species extinction was palpable, serving as a reminder of
the urgency to link science with conservation for species that still have a chance, like the Malayan sun bear. We joined Thye Lim Tee and his field assistants to visit hair sampling and remote camera sites. A major logistical challenge for DNA sampling is that the barbed wire used to collect hair for other bear species is ineffective on sun bears given their short and sleek fur. It took quite a bit of experimentation with captive bears at the Bornean Sun Bear Conservation Centre to develop an effective technique (see International Bear News 2016, issue 3). And when everything else fails, there is always duct tape! It appears that a triangular corral of steel cable wrapped with reversed duct tape or simply a ribbon of duct tape on a tree may do the job. The first hair samples from such collections were successfully genotyped, suggesting that the glue from the duct tape was not contaminating the DNA sample. Samples are also placed at each sample site and records obtained so far are encouraging, with about 1/5th of all photos showing females with offspring. The second field site involved about a day’s drive to the Bengkoka Peninsula of Sabah. As we passed through one oil palm plantation after another for the entire duration of the drive, the massive scale of forest conversion became apparent. The Bengkoka Peninsula is unique, however, in that the landscape is not a monoculture but a mosaic of acacia plantations of different age classes, natural forest patches (some are in reserves), as well as 63 indigenous villages (Rungus and Tembanua). We examined several camera sites with Wai Pak Ng, who is conducting a study to investigate what landscape conditions are associated with site occupancy of sun bears. This research should provide insights into crucial questions regarding sun bear use of managed/natural forest mosaics, and whether forest management can be compatible with sun bear conservation. Of 30 remote camera sites sampled so far, bear presence was documented at 8 sites, and at 2 additional sites based on bear tracks. Reproduction was evident from several of the images. Captures are planned for deployment of GPS collars, which will serve as a pilot study for future research efforts.

I thank IBA for supporting my air travel for this work exchange. This important visit allowed me to use my background and experience in bear research and international bear conservation and assist with building such capacity in Malaysia, ultimately linking scientific efforts with sun bear conservation practices. As a demonstration of the effectiveness of IBA’s Experience and Exchange Grant program, this exchange led to a formal Technical Assistance Agreement between Sunway University and the U.S. Geological Survey-Northern Rocky Mountain Science Center, a testimony that both institutions are committed to this collaborative research program.

Remote camera photo of a sun bear at a sample site in Tabin Wildlife Reserve, Sabah, Borneo (photo credit: Sun Bear Research Program, Sunway University).

Remote camera photo of two sun bears at a sample site on the Bengkoka Peninsula, Sabah, Borneo (photo credit: Sun Bear Research Program, Sunway University).

1 During 2013–2016, a small population of Sumatran rhinoceros was discovered in Kalimantan, the Indonesian portion of Borneo.
Revival of Handicraft Aides Survey for Asiatic Black Bear Corridors in Hormozgan Province, Iran

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We started a project to study and conserve the Asiatic black bear (*Ursus thibetanus*) in Hormozgan Province of southern Iran in 2009. We have gathered essential data for the conservation of this critically endangered species (classification of so-called Baluchistan bear in Iran). Specifically, we investigated its distribution, diet and conflicts with humans. Parallel to the field work, we have been involved in related activities such as education, participation of local people and revival of forgotten handicrafts mostly made of Persian Mazari palm.

Connections Between Handicrafts and Conservation

Persian Mazari palm (*Nannorrhops ritchiana*) is an item in the Asiatic black bear’s diet. New leaves of this plant are the main food source in the region during June through mid-July, when date palms are not yet ripe and it is too dry for other natural plants. Old leaves of Persian Mazari palm used to be pruned yearly by local people to make handicrafts for daily use. This produced a natural cycle, involving the gathering of old leaves by people for handicrafts, which stimulated the growth of new leaves as a food source for the bear.

During the course of our project, a study on the local community lifestyle using Participatory Rural Assessment (PRA) methods, we learned that the fabrication of traditional mats, baskets, and utensils, mostly from Persian Mazari palm, had been a forgotten art for decades. Use of plastic products had become more common. However, we thought it would be important to try to save this old culture, which would also help provide food for the Asiatic black bear at a time of scarcity. The project motivated local people to revive their old palm-weaving and introduced the product to the people of big cities, such as Tehran.

We also thought that reviving these handicrafts and selling them with a surplus “conservation fee” might also provide some funding to start training local people to survey and monitor possible bear corridors — one of our key conservation goals. The handicrafts had 2 different prices: one was the price that local people chose plus other extra costs associated with transporting (baskets US$ 5–20, mats US$ 4–30); then there was the price that included our conservation fee (additional US$ 3 per piece). Handicrafts carried a logo and short explanation of the conservation project. We explained to people that this added fee was optional — some people were motivated to donate more.

Field Surveys Yield New Information

During field surveys we had identified 2 main habitats for the black bear in Hormozgan Province: Bashagard and Roudan regions. However, we did not know how many separate populations there were, or corridors connecting these in this very arid habitat.
In Minab County, one of the main unsurveyed areas located between Bashagard and Roudan, we met a local person, Mr. Morteza Arianezhad, who was eager to participate in the project. He had accompanied us earlier on 2 training field trips in the Bashagard area during 2015 and 2016. He started his survey in Minab's bear habitats in August 2016. The project supported him with information, camera traps, and covered his trip expenses. He gathered information from old herders and farmers to find habitats suitable for bears. He set 4 camera traps on wildlife trails and near caves. After 147 trapnights of effort he captured 4 photos of black bears on trails near a date palm garden and a den.

Minab County is thought to contain the best habitats for black bears in Hormozgan Province, as well as being a possible corridor between Hormozgan and Kerman Province. The photos and other bear signs collected in this area reveal previously unknown bear habitat and implicate this region as a potentially important matrix of corridors among Asiatic black bear populations. This region deserves further comprehensive surveys to determine the status of black bears.

Acknowledgements

We thank Nahid Ahmadi, Sohrab Poshtareh, Armin Sadeghipour, and Mostafa Arianejad for field work and collaboration in preparing of this article. This project is supported by the Bears in Mind Foundation and Hormozgan provincial office of Department of Environment, which we appreciate.
The Andean Bear (Tremarctos ornatus) is the only bear species and one of the big mammals in South America with an altitude range from 210 – 4,750 m.a.s.l. (Peyton 1999), and living in a big diversity of habitats from dry tropical forest, highlands, to amazon tropical forest, among others. Despite their wide-range distribution from Venezuela to northern Argentina, the conservation threats to this species, being considered as vulnerable, result from anthropogenic activities such as hunting, expansion of the agricultural frontier, and the destruction and fragmentation of habitat. In Peru, national legislation protects the species (considered as vulnerable to extinction) and recently in 2016 the First Andean Bear Conservation National Plan (2016 – 2026) was presented. Manu Biosphere Reserve (12° 6' 20.15" S, 71° 42' 24.81" W) is one example of the difficult coexistence between humans and the Andean Bear because it is perceived as a threat to the family economy, as they damage crop fields (especially Zea mays) and can threaten livestock, both main means of subsistence for local Quechua communities.

Since 2013, the Manu National Park – MNP and the NGO Frankfurt Zoological Society Peru have been working to reduce the human-bear conflict in the Mapacho’s valley (Lucuybamba community), by focusing on ecological and socioeconomic perspectives about the problem in order to understand it and apply activities to reduce it. Principal actions were monitoring Andean Bear presence and diagnosing conflict (corn damage and bear-cattle interaction). The social focus of the project is based on activities such as environmental education, identification and application of deterrents, training communal volunteers, and diversification of the main means of subsistence through agricultural and handicraft pilot projects. This is the first human-animal conflict project in Peru focused on Andean Bear conservation with a long term scope.

Three years of Andean bear presence monitoring show that 9 individuals moved across a communal territory and part of the MNP limits (approx. 82 km²). Movement was most frequently during maize season (April to July), which brought them closer to people. Also, during one year of diet monitoring in 2016, 30 species of foods were recorded in the dry season (main representative families Bromelacea, Ericaceae and Symplcaceae), whereas in the rainy season more than 70 food species were recorded (Bromelacea, Ericaceae, Melastomataceae, Rosaceae and Symplcaceae) (personal commentary from Lidia Valenzuela and Manuel Llanos 2017).

From conflict diagnosis, crop damage monitoring showed that maize consumption by bears was reduced in the community from 2,453 in 2015 (approx. 50% of wild animal’s damage) to 233 in 2017 (3.66% of total damage), which resulted from the use of deterrents and more vigilance. However, it is important to notice that the pressure on maize by bears over three years of monitoring was not the same, and will need further research. It is worth mentioning that there are other wild animals that damage maize crops and are more harmful, such as parrots and mice, nevertheless, they are not the first
animals to be blamed by local people. On the other hand, bear-cattle interaction reports for 3 communities in 2016 showed 72 events of dead cattle. Fifty were blamed on Andean bears, 19 on puma (*Puma concolor*), and the rest from other causes. This was based on local perceptions of the cause of death and not from inspecting the field. With respect to that, there are two important points: 1) local people don’t report cattle death because they know there isn’t compensation payments, and 2) bear signs (footprints, feces, feeders) are commonly the only evidence to blame the bear. This is one of the big challenges when facing the reduction of human-bear conflict.

The main activities that seek to diversify the means of subsistence held in Lucuybamba, are developing pilots in gold berries (*Physalis peruviana*), honey, and handmade textile, and providing more support to alternative sources of income. This included forming local producer’s associations with 62 beneficiary families, technical support, and connections to local markets. These activities allowed the researchers/partners (specialist, park rangers and chief) and locally affected families to strengthen relations, and to better understand conservation, which includes local develop and benefits for Manu’s neighbors. Now people recognize the importance of protecting the Andean bear and the benefits of being part of Manu Biosphere Reserve.

In environmental education, workshops were implemented in 9 schools, developing diverse topics such as protection of forest, importance of natural resources, avoiding forest fires and contaminations. This included the Bear Festival (Ukuku Raymi), a big event that joins local people, MNP staff, local authorities, schools, among others who share time in education activities and sports competitions such as “the Bear cup”. Much of the information collected was done with the help of important local monitors, who were selected by the communities to work with us in collecting data on bear presence, maize damage, and cattle interaction.

Actually, FZS Peru is working on the second phase of this initiative, where stakeholders will have a more important role. Development and application of deterrents and supporting economic alternatives shall be continued. Community change of behaviors and perceptions about Manu and the Andean Bear shall be measured and participation of local government and National institutions shall be stimulated. The top product of this new period will be a human-bear conflict guide for local authorities that will collect our experiences, involve institutions’ perceptions about the conflict, and provide some recommendations to be applied in Peru.

**Acknowledgements**

We thank Manu National Park staff for supporting our work, also local authorities and Lucuybamba communers for trusting in the project goals. Finally, we want to thank all the volunteers who supported us.

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Human-Bear Conflicts

The Dichotomy of Feeding Bears, and Considerations for Human–Bear Conflicts

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Human-bear conflicts often result from the availability of high-calorie, human-related foods. In an effort to reduce these widespread attractants and thus human-bear conflicts, 23 North American jurisdictions that manage American black bears (Ursus americanus) and grizzly bears (U. arctos) have passed anti-feeding legislation (AK, AR, AZ, BC, CA, FL, LA, MB, MD, NH, NJ, NV, NY, OR, PA, RI, SC, VA, VT, WA, WI, WV, YK).

In the Pacific Northwest of the U.S., diversionary feeding (also referred to as supplemental feeding) has been used and promoted as a means of reducing black bear damage to commercial timber. The concept is that by providing an attractive alternate food, hungry bears will not attempt to strip the bark of trees to obtain a lower quality food (cambium). The state of Washington currently enforces an anti-feeding legislative rule but the diversionary feeding program was exempted because it was considered a useful forest management practice. The use of dogs and baiting for hunting bears on these properties was also exempted when these hunting methods were banned in Washington in 1996. The diversionary feeding program allows private timber companies to provide pelleted food ad libitum to bears in timber stands of vulnerable age classes during March to mid-June (at which point natural foods become readily available and bears stop feeding on cambium). It has been estimated that in western Washington alone, the Western Forest Protection Association (WFPA), a consortium of private timber companies, currently places approx. 800,000 pounds (360,000 kg) of bear food annually (exact numbers are unknown as they have been considered proprietary since 2007).

The perceived efficacy of this diversionary feeding program stems primarily from a single study (Ziegltrum 2004) conducted by the animal damage control program (ADCP) of WFPA. Since 2004, a pair of additional articles have accompanied that publication describing the program as a non-lethal success but do not contribute additional scientific evidence of damage reduction (Ziegltrum 2006, 2008). Other manuscripts have also recognized this diversionary feeding program as a successful strategy for reducing commercial tree damage, based on these publications (Garshelis et al. 2017). However, the original studies seem to have neglected the effects of bears that were killed while the feeding program occurred: that is, the targeted removal of bears combined with general spring and fall hunts were not considered when touting the benefits of the feeding program.

The diversionary feeding program has been ongoing for 3 decades in western Washington yet timber damage complaints have not declined; as a result, some timber companies have ceased feeding. Additionally, requests for agency-issued kill permits have increased on these properties since 2004 and some forest representatives have stated that the problem continues to increase. Whether the bears being killed are those that damaged (or would have damaged) trees, or other bears that simply took advantage of feeders is unknown. Other studies have found that predictable artificial foods may attract bears from other areas (Massé et al. 2014), and also cause earlier den emergence. Artificially fed bears also grow faster and get larger, have an earlier age at first reproduction, and may have increased litter sizes. Given the amount of food being provided, it is likely that den emergence, reproduction, dispersal, survival, and density are all affected in the feeding areas, so it is unclear whether the feeding actually has a net positive or negative effect on timber damage. Addressing the problem by altering silvicultural practices, such as planting mixed species of trees and more natural spring bear foods (clover and graminoids) or altering stocking densities and thinning practices has not been tested.

A significant source of food being provided to bears in other areas is via baiting for hunting purposes. Baiting has the advantages of: (1) increasing hunter success; (2) enabling greater hunter selectivity in terms of sex-age and presence of offspring;
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and (3) attracting (and removing) animals that are more accustomed to feeding on human-related foods. However, hunter baiting can be at odds with a conflict-management program. Currently, 19 jurisdictions allow baiting for black bears (AB, AK, BC, ID, MB, ME, MI, MN, NB, NC, NH, NJ, NL, NS, ON, QC, UT, WI, WY), and in Wisconsin alone an estimated >15 million L of food was placed by hunters annually (Kirby et al. 2017). Such large amounts of bait on the landscape has been shown in at least 1 case to significantly bolster population growth rates through enhanced reproduction, and additional concerns include disease transmission, intra-species aggression, and toxicity from chocolate-based food items (Beringer et al. 2016).

Baiting and diversionary feeding programs generally operate under a different classification than other attractants like garbage and bird feeders as they are considered wildlife agency management tools that occur away from people. But in Washington, there is no area >30 km from a human development; even many of the mountain ranges directly abut large scale human-dominated areas. Both baiting and diversionary feeding stations are typically placed only a short distance from a road network, so the perception that these activities occur away from people may be a misinterpretation, as a bear can cover this distance in a day. What effect this feeding has on bear behavior and whether this activity is contributing to habituation and food-conditioning and increased human-bear conflict continues to be debated (Steyaert et al. 2014).

Given these perspectives, where 1 or more of these programs exist, could baiting and feeding be complicating a wildlife agency’s analysis and evaluation of existing bear management programs? Might feed stations reduce some conflicts while increasing conflicts elsewhere? Do feeding programs contribute to inconsistent and confusing public messaging about attractants and feeding of bears? Will feeding result in higher bear densities than the habitat can support, thus resulting in increased human conflict? Where damage occurs, are feeding stations attracting more bears to the very areas that are trying to be protected, thus perpetuating damage? It is our hope that future research can be designed to test the assumptions of these complex issues in a more comprehensive manner.

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Sloth bears (*Melursus ursinus*) are known to feed on termites, ants, honey, and fruits. The mixture of these items varies by area and by season. However, since they specialize on ants and termites, which tend to be common across their range, sloth bears seem less prone than the other omnivorous bears to seeking out human-related sources of food. Sloth bear conflicts with people generally have more to do with bear attacks, or actions related to fear of attacks, than to property damage. Situations that lead to encounters between sloth bears and people often result in such conflicts, with bad outcomes for people and bears (Bargali et al. 2005, Akhtar 2006, Dharaiya and Ratnayeke 2009, Ratnayeke et al. 2014).

Sloth bears in Maharashtra state, India, generally fit this pattern: recently, human maulings have increased drastically. We were investigating this during this year (since April 2017) when we became aware of an atypical conflict situation, which we describe here. We were conducting research in Buldhana wildlife division, in mid-northern Maharashtra. The division comprises 840 km² of forest, with 3 wildlife sanctuaries (Amba Barwa, Dnyanganga and Lonar WLS) along with patches of unprotected forests.

Villagers reported that on 8 June 2017, a bear had visited the village of Nandri and entered a house by breaking the wooden door. We looked around the house and found that before breaking the door, the bear had searched for other possible ways of entering the house, as evident by many claw marks on the earthen outer walls. Inside, nearly every household article was damaged by the bear. We found an empty, bitten cooking-oil container, and the walls and floor of the house were wet with the splattered oil. We found a fresh bear scat just outside the house, containing seeds of *Aegle marmelos*.

The house (20°36'48.2” N, 76°17'31.6” E) was well separated from the rest of the houses in the village. A *Ficus benghalensis* tree close to the house had several bear claw marks from about 6 months before, suggesting bears had visited this site previously, although villagers noted that this was the first incidence of such a break-in. The house owner had been away to attend a wedding ceremony in a nearby village when the incident occurred.

A second similar incident occurred in a temple (20°35’18.4”
N, 76°24'22.8" E) located near a dam in the territorial forest close to the Dnyanganga WLS. This happened on the night of June 10. A bear broke the 1.6-m high accordion-style iron security gate. Inside the temple we found nearly everything destroyed, and again observed a broken oil container, and oil-stained walls. The bear’s pugmarks were still visible on the floor, smeared in the oil. Outside was a freshly opened anthill.

Temples are known to have fruits (mostly coconuts) and oils offered by pilgrims (for use in lamps), and according to the local people, bears regularly visited these temples at night to feed on the offerings. Whereas such behavior might seem natural for an Asiatic black bear (*Ursus thibetanus*) (although this area is well south of their geographic range), this behavior is quite atypical of sloth bears.

It seems reasonable to conclude that the main attractant in these 2 cases was the oil (probably groundnut or cottonseed). Although no human attack or causalties occurred, the boldness of the bear(s) is alarming. We could not determine whether this was the same individual bear at both sites, or why it was so motivated to break in — was there a shortage of natural foods, or had this bear previously tasted and liked the oil?

Whatever the reason, it is likely that word of this will spread, and the reputation of sloth bears further tarnished, thus increasing the chances of villagers reacting even more negatively toward bears that they encounter in the future.

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First Legal Shooting of a Bear in the Italian Alps, in the Name of Conservation

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The small, isolated population of brown bears (Ursus arctos) in the Trentino region of the Italian Alps lost a breeding female when the decision was made to remove her after her second attack on a person. This population had been augmented by a reintroduction in 1999-2002, after which it grew rapidly, then levelled off at 49-66 (Groff et al. 2017). Changes in population size have been monitored through non-stop genetic sampling since 2002. Escalating conflicts were handled via a 24-hour hotline, emergency action team, concerted efforts to reduce attractants, and compensation for damages. However, most concerning to the public have been some recent bluff charges, and 2 recent attacks.

The bear involved in these attacks was genetically identified as KJ2. In both cases (2015 and 2017) she was with cubs, and in both cases seriously injured men walking alone in the forest with a dog, not far from the city of Trento (100,000 inhabitants). At the time of the second attack (July 22, 2017) she was 15.5 years old and with her fifth litter (2 cubs).

Following that attack, the President of the Province issued an order to remove the bear. It was recognized that the bear’s behavior was not abnormal — it was a defensive attack to protect her cubs, and likely provoked by the dog. Nevertheless, the order was motivated by a concern for human safety as well as to appease public apprehension and possible negative reactions, especially given that the same bear had attacked 2 people in 2 years.

A plan was developed to capture, collar, and release the bear, conduct genetic tests to confirm identity, and then once doing so, track it down and remove it. Against some public pressure, the decision was made to kill it rather than take it into captivity.

The first bear captured and collared, a female with 2 cubs, turned out not to be KJ2. On 1 August another female with 2 cubs was captured and collared; a couple of days later this bear was confirmed as the right one. Attempts to track down and kill this bear were initiated immediately.

The plan, though, was more difficult to implement than thought due to the shyness of the bear and the rough terrain. During 9 days of very intensive monitoring and patrolling of the area, which was full of tourists at that time, the bear could not be approached close enough to shoot. Finally, on the evening of 12 August she was shot dead with a single shot.

The 2 cubs (7 months old) were left in the wild, considering them to have a good chance to survive on their own, based on a literature review and previous cases of orphaning in Trentino (3 of 3 survived).

The shooting raised considerable discussion in the media and on the web. For the first time ever in Italy a bear was legally shot. Would this become a policy for all future attacks? The Bear Specialist Group was asked to weigh in on the situation, and submitted a letter in support of the actions taken.

“In certain circumstances killing the offending bear, while potentially distasteful, may be in the best interest of the population as a whole. The removal of a targeted ‘problem’ animal allows the public to view the conflict as under control. While a defensive attack on a person (e.g., mother defending cubs, as in this case) is typically not grounds for removal of a bear in many jurisdictions, management agencies must balance the worth of the bear to the viability of the population versus the trust and tolerance of the public gained by its removal. As we understand, this bear had been involved in previous bluff charges toward people when defending her cubs — a normal maternal behavior. However, when she crossed the line and actually attacked, she undermined...
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public confidence that people could safely share this habitat with bears; keeping a bear with such a history could impede conservation efforts not only in Italy but for other small populations in Europe, as it would prompt distrust in management agencies.”

Additionally, the BSG recommended that hikers carry bear spray, which has proven to be very effective at preventing unwanted consequences in close encounters with bears in North America. However, this product is still forbidden in Italy and in several other European countries.

The attacks led to a significant loss of public support that had been hard-won over the past 20 years. Poaching was already on the increase, so with growing discontent over conflicts with bears, the removal of this single bear was deemed a necessary action demonstrating that conservation is not a trade-off with public safety. We have to keep in mind that possibly the most important aspect of any bear management program is to nurture public support.

We will continue to emphasize modifications of human behaviors to help avoid such conflicts with bears. We will also employ aversive conditioning, including bear dogs, to modify bear behaviors. But as a last choice, we may someday again have to remove a bear that is viewed by the public as threatening their safety.

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Bears in the Himalayas

Himalayan Black Bear Discovered in Babai Valley of Bardia National Park, Nepal, Co-occurring with Sloth Bears

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In Nepal, the Asiatic black bear (Ursus thibetanus; normally called Himalayan black bear in Nepal) occurs across the Middle Hills and has also been detected within all of the Mountain Protected Areas (National Parks: Makalu-Barun, Sagarmatha, Langtang, Shivapuri Nagarjun, Shey-Phoksundo, Rara and Khaptad; Conservation Areas: Kanchenjunga, Annapurna and Manaslu; and Dhorpatan Hunting Reserve). It has also been recorded from the districts of Dhading, Surkhet, Dailekh, Dadeldhura, Doti, Bajura, Rukum and Myagdi (Jnawali et al. 2011). It is considered to occur at elevations of 1,400 - 4,000 m (Jnawali et al. 2011), but not in the lowland Terai of Nepal, which is occupied by the sloth bear (Melursus ursinus). A single record exists, from a camera trapping survey in 1999 - 2000, of a Himalayan black bear in the Babai Valley (along the Babai River) of Bardia National Park (Jnawali et al. 2011). This park is within the Terai in southwestern Nepal (28.7193 to 29.0515°N; 80.0609 to 80.4120°E). However, since then there has been no further evidence of the presence of this species on the Terai of Nepal despite continuous and extensive camera trap surveys and other ecological research in last decade. Here we present photographic evidence of another Himalayan black bear captured in a camera trap in Bardia (BNP), after a 16-year absence.
A camera trapping survey aimed at tigers was conducted across the entire BNP (968 km²) from January 18 to March 28, 2016. A total of 269 grid cells of 2 x 2 km were superimposed and surveyed successively in 4 large blocks. The camera trap location within each grid cell was selected following an extensive survey of tiger signs. In each sampling point a pair of motion-sensitive camera traps (Cuddeback Color Model C1, Cuddeback Attack, Reonyx 500 or Reonyx 550) was installed at 45 - 60 cm above ground on either side of a game trail, forest road or stream bed, maximizing the probability of tiger (Panthera tigris) capture. Camera traps were checked every day. Cameras were active for at least 15 days in each grid cell. Camera trap photos were given unique identification names and sorted by species.

Methods

Camera trap locations where a Himalayan (Asiatic) black bear was photographed in Bardia National Park, Nepal, in 2000 and 2016.

(left) Camera trap photographs of Himalayan (Asiatic) black bear in Babai Valley of Bardia National Park, Nepal during 2016 tiger survey and (right) during 1999/2000 survey. The old photograph was found in the photo archive of the National Trust for Nature Conservation.
Results and Discussion

A total of 4,035 camera-trap nights from 257 sampling locations yielded 489,764 photographs of 28 species. We recorded 3 photos of a solitary Himalayan black bear from a single location along the riverbed at Dhanuse area in Babai Valley on March 5. We compared the photos with Asiatic black bear photos on the IUCN redlist webpage (Garshelis and Steinmetz 2016) and national redlist of mammals of Nepal (Jnawali et al. 2011) to confirm the identification. The bear capture location was in the eastern part of BNP, 27 km east of the camera trap photo of a black bear in 2000, and approx. 3 km from the border of Banke NP. Other large mammalian species detected at this site included tiger (Panthera tigris), sambar (Rusa unicolor), wild boar (Sus scrofa), chital (Axis axis) and red muntjac (Muntiacus muntjac). Scat and tracks of a bear were also recorded at multiple locations beyond the camera trap location.

Himalayan black bears have been reported from low elevations (< 1,000 m) along the Terai Arc in India, overlapping the range of sloth bears in Corbett Tiger Reserve and Rajaji National Parks, Uttarakhand (Bargali 2012). However, Garshelis et al. (1999) reported little or no overlap of sloth bear and black bear ranges in Nepal. The reason for this separation in Nepal, but overlap in India, remains a mystery. Sloth bears have been recorded in Bardia regularly, including the Babai valley (Garshelis et al. 1999, Jnawali et al. 2011, Dhariya et al. 2016). Although the evidence for presence of black bears in this valley is sporadic, these records suggest a marginal overlap with sloth bears in Nepal. A targeted study to better understand this dynamic would be very useful.

Acknowledgements

The camera-trap survey was a collaborative effort of the Government of Nepal, Department of National Parks and Wildlife Conservation, Department of Forests, National Trust for Nature Conservation and World Wildlife Fund (WWF) Nepal. We would like to acknowledge all field technicians and team members.

Details of the camera trap locations where an Asiatic black bear was photographed in Bardia National Park, Nepal, in 2000 and 2016.

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Acknowledgements

The camera-trap survey was a collaborative effort of the Government of Nepal, Department of National Parks and Wildlife Conservation, Department of Forests, National Trust for Nature Conservation and World Wildlife Fund (WWF) Nepal. We would like to acknowledge all field technicians and team members.

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Deadly Crossing: Roads are the Emerging Threats to Sloth Bears in India

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Human-induced mortality has been identified as a major factor affecting threatened species. This includes mortality arising from the development and expansion of roads (Ree et al. 2015). Sloth bears (Melursus ursinus) are endemic to the Indian subcontinent and have been reported throughout India, occupying diverse habitats from wet or dry tropical forests to savannas, shrublands, and grasslands (Garshelis et al. 1999). However, its historical range has been fragmented and decreased overall because of large scale deforestation to facilitate human development. In addition, diminished food resources, retaliation killing, illegal killing for gall bladders, and the taking of young sloth bears from the wild for bear dancing has resulted in severe population declines and some local extirpations (Yoganand et al. 2006).

India is one of the 18 mega-biodiversity countries in the world and is projected to be the most populous nation by 2028, with approximately 1.45 billion people (Karanth and DeFries 2010). The country has the second largest road network (5,472,144 km) and highest road density (1.66 km/km²) in the world, and a rapid growth of motor vehicles at 9.9 % during 2005-2015 (Anonymous 2014-15). As a consequence of India’s increasing population and development, adverse impacts on wildlife are simultaneously increasing. In India, the sloth bear received highest protection status and is listed in Schedule I of the Indian Wildlife (Protection) Act 1972. However, the level of sloth bear mortality due to road accidents remains unknown across its range.

Odisha (155,707 km²) is one of the eastern coastal states of India and represents prime habitat for sloth bear in the country (Yoganand et al. 2006, Debata et al. 2017). An increase in journalistic reporting about sloth bear mortality due to vehicular collision, in print and in electronic media was observed in the last year. We collated such reports for a total of 15 sloth bears killed in 12 incidents of road accident during May 2012 to August 2017. Of these, 7 sloth bears have died in the last eight months of last year. All the road kills occurred outside the protected areas.

Since the inception of project tiger in 1973, conservation efforts (establishing tiger reserves) have improved the situation for sloth bears along with tigers (Panthera tigris) inside the protected areas in India. Pressures from agriculture, surface mining, and urban expansion on remaining sloth bear habitat, where substantial populations occur, have continued to grow over the past 4 decades. Along with a fast-growing economy, India has put considerable effort into developing a bear conservation and welfare action plan (Sathyakumar et al. 2012). However, lack of prescribed regulation and mitigation measures for threats posed by roads to the sloth bear, emphasize the urgent necessity of intensive studies.

Although our study was limited to a short period and limited data, it still provides some insights into sloth bear mortality due to road accidents. We believe that this information will be useful for management and research perspectives for this globally threatened species across its distributional range.
Road kill location of sloth bear in Odisha, eastern India including number, sex and age.

<table>
<thead>
<tr>
<th>Year</th>
<th>Month</th>
<th>Location (near village, Block or Range, Forest Division or District)</th>
<th>#</th>
<th>Sex</th>
<th>Age*</th>
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<tr>
<td>2017</td>
<td>Jan</td>
<td>Bamebari-Namira road, Joda, Keonjhar Forest Division</td>
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<td>A</td>
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<td>Feb</td>
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<td>1</td>
<td>M</td>
<td>A</td>
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<tr>
<td>2017</td>
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<td>1</td>
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<td>A</td>
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<tr>
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<td>Aug</td>
<td>Kamara, Borigumma, Koraput District</td>
<td>2</td>
<td>Unk</td>
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<td>June</td>
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<td>M</td>
<td>A</td>
</tr>
<tr>
<td>2015</td>
<td>Dec</td>
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<td>A</td>
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<tr>
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<td>June</td>
<td>Keshapur Village, Purusattampur, Berhampur, Ganjam District</td>
<td>1</td>
<td>Unk</td>
<td>C</td>
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<tr>
<td>2014</td>
<td>June</td>
<td>Golanthara, near Roland college, Berhampur, Ganjam District</td>
<td>2</td>
<td>M &amp; F</td>
<td>S</td>
</tr>
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<td>2012</td>
<td>May</td>
<td>Machhua village, Nilgiri, Balasore District</td>
<td>1</td>
<td>M</td>
<td>C</td>
</tr>
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<td>Oct</td>
<td>Saposil, Jeypur, Koraput District</td>
<td>2</td>
<td>M</td>
<td>S</td>
</tr>
</tbody>
</table>

* = Adult (A); Subadult (S); Cub (C)

Literature cited


Risky Climbing: First Records of Accidental Trapping of Sloth Bears in Trees

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Sloth bears (Melursus ursinus) are synanthropic species as they can easily adapt to human-dominated landscape. They are omnivorous in dietary habit, characterized by feeding on social insects (predominantly ground living ants and termites) and sugar rich fruits (Garshelis et al. 1999). They live in seasonal tropical forest, often show predictable responses to fluctuating food resources; preferring insects in the wet season and fruits in the dry season (Seidensticker et al. 2011, Palei et al. 2014). Their diet is considered “moderately myrmecophagous” when compared to other insectivorous mammals, in terms of the percentage of occurrence of undigested materials in the faecal matter (Sacco and Valkenburgh 2004). Sloth bears forage on the ground, breaking termite mounds and turning the rocks or logs, to feed on ants and termite broods. Usually sloth bears eat ripe fruits fallen on the ground. The animals spend little time in trees, climbing trees mainly to obtain honey from beehives (Garshelis et al. 1999). In Royal Chitwan National Park, a cub was observed eating honeycombs on the ground which had been dislodged by its mother from the tree above (Laurie, and Seidensticker 1977). Also, the authors observed sloth bears climbing up trees to devour weaver ants (Oecophylla smaragdina) and ripe fruits such as figs (mainly Ficus racemosa, F. hispida and F. semicau data) and jack fruits (Artocarpus heterophyllus). However, accidental trapping of sloth bears in trees has not been reported in earlier studies or observations. Here we report on the observations of sloth bears accidentally trapped in trees on two occasions in Odisha, India.

On 26th May 2012, while returning from a field trip from Bhanjabasa, Similipal Tiger Reserve, Odisha, India, we came across the odour of rotting flesh near Nalakhanja forest beat house. Following the source of the stink, a dead and rotting sloth bear was found in a tree hole. The tree hole was 8 feet above the ground. Sloth bear claw marks were found on the tree trunk. From the surroundings it was noted that the sloth bear had a tragic death as the body of the animal was stuck while trying to exit after eating honey combs in the tree hole. From examining the carcass, the animal was presumed to have died 7-8 days prior. The incident was reported to the forest department authorities to register it as an undetected case on the same day.

On another occasion, on 1 April 2017, a sloth bear was trapped in mango tree in Chadheimara village, Debagarh district, Odisha state, India. The sloth bear had come to the mango orchard to eat honeycombs, and its right leg became trapped between two branches of the tree. The animal was stuck the whole night. After seeing the animal, the villagers informed the forest department, who rescued and released the animal back into the forest.

Like any other accidental death, wild animals can be prone to accidents they cause on themselves. Despite being expert climbers, sloth bears may face such tragic deaths, for which humans cannot be blamed. Rather, vigilant local communities or front line forest staff that come across such incidents should take prompt actions to avoid similar unprecedented deaths of sloth bears.

Literature Cited


A Discussion of Black Bear Management

Rich Beausoleil

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This month, with a revision to my agency's black bear (Ursus americanus) management plan underway, I reached out to fellow agency managers via the IBA's online manager's forum to get input on several aspects of bear management including the value in collecting teeth from hunter kills for ageing, the use of median ages as a guide for management, harvest rates, and an appropriate scale at which to analyze all of these parameters. There was a lot of overlap in the answers, but some useful information that is worth sharing with the readers of IBN.

Collecting teeth is one of the least expensive and time efficient tools managers have available to them and it facilitates a working relationship with the hunting public. Almost all agencies that responded said tooth collection was important but many pointed out that ages of hunter-killed bears are of limited value for the most critical agency management objectives (population reconstruction & estimation) but could be utilized better by integrating results with other data (surveys, survival, etc.). That value decreases if the tooth submission process is not mandatory and only a portion of teeth are collected. If agencies require more than the pelt and skull for inspection, morphometrics can enhance data collection efforts. Age structures of the harvested population may also be used in Downing reconstruction to estimate population growth rates and may describe likely scenarios of recent population change.

Overwhelmingly, managers agreed that median age was not a reliably valuable technique. Harvest data can demonstrate both increasing and decreasing population trajectories as each can exhibit the same age structure and/or sex ratio and trends may not be consistent with the true population trajectory. Said another way, a low median age could be because all the adults have died or because cub production was high. Predictably, higher median ages can be observed in a population that is lightly hunted and lower median ages in areas where hunting pressure is higher as a result of greater access (high road densities). When higher harvest situations are monitored, median age tends to drop abruptly and then remain constant, so median age is not sensitive to changes in harvest and likely not useful to managers. One suggestion made was that managers may look at tracking the percent- age of male and female bears >12 years of age rather than using median age. Finally, rather than using median age, it was mentioned that age data could be used to simply classify bears into adult and subadult categories and track those long-term average trends. Several agencies agreed that age data may be biased towards older bears, as hunters are less likely to submit a tooth from younger bears (especially when it’s not mandatory, or because they already know the age). Median age may be one of several variables that could be useful in classifying game management units into data analysis units or for grouping units to describe management expectations.

Harvest rates were a tougher question to answer as it is highly variable and dependent on habitat quality, levels of non-hunt mortality, and whether the discussion is the eastern or western US where growth rates are higher and lower, respectively. Many agencies use population reconstruction and do not have science-based field estimates of abundance and density making a harvest rate difficult to estimate. Additionally, density can vary dramatically within a jurisdiction so harvest rates could vary based on locale. Environmental conditions also play a large role in harvest annually, as it can dramatically impact bear behavior and hunter success so harvest limits may be required to stay within harvest objectives. Most agencies agree that female harvest is more of a management concern as productivity and survival of females drives population dynamics.

To analyze harvest objectives, most agencies use a management zone/unit scale (clumping game management units (GMUs)'s of similar habitat type and/or access), some use the GMU level, and some simply look at harvest on a statewide basis. It was suggested that the only good way to monitor harvest is to estimate population size or trend and base harvest objectives on that; a few states do that but most do not. Managing for trend by using an adaptive management approach and testing whether harvest responds to different harvest strategies was also suggested. To develop management units or zones, managers may want to take into consideration not only the differences in the characteristics of bear subpopulations, but also the different characteristics of harvest, habitats, development patterns, and the public. The areas should also be large enough that data collection and sampling efforts are sufficient and meaningful for modeling and other analyses. However, there is a tradeoff as it relates to female harvest as the larger the management unit, the less sensitive it is to female harvest rate and % females in the harvest.

Thanks to everyone that responded to my inquiry and provided their expertise including:

J. D. Clark, United States Geological Survey
J. J. Beecham, Idaho Department of Fish and Game (retired)
A. Timmons, New Hampshire Game and Fish
J. Hayden, Idaho Department of Fish and Game
C. Offenbuttel, North Carolina Wildlife Resources Commission
D. Telesco, Florida Fish and Wildlife Conservation Commission
A. Howard, Arizona Game and Fish
D Bjornlie, Wyoming Game and Fish Department
S. Haskell, Maine Department of Inland Fisheries and Wildlife
Manager’s Corner

People are Building a Better Bear Trap

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Email: Richard.Beausoleil@dfw.wa.gov

Managers had a great discussion on the IBA Management Committee online forum recently regarding bear traps. Many new innovations are being developed and I thought this discussion would be useful for readers of IBN. Some minor modifications of comments were made to fit submission guidelines.

The discussion was started by Adam Vashon, Wildlife Services, USDA in Maine. He asked:

I am preparing to purchase a culvert trap and am curious if anybody could provide me with either a manufacturer or specifications for fabricating. I am aware there are a lot of important details to consider for both human safety and welfare of the bear; that is my guiding principle. I currently have the specs for the “Cambrian Design” (Ontario MNR) which I am strongly considering but would love to have input from those who may deal with this subject on a regular basis. Thanks for any suggestions you may have

Dave Telesco, Florida Fish and Wildlife Conservation Commission:
We have been replacing traditional culvert traps with a modified Cambrian style, primarily using AMP Trailer as the manufacturer. AMP has a webpage advertising their trap design: http://www.beartraptrailers.com/. We have made several modifications to the original Cambrian design we consider practical improvements. Mike Orlando (Mike.Orlando@MyFWC.com) has the most experience in our agency working with these traps, and would be happy to answer any questions you might have.

Carl Lackey, Nevada Department of Wildlife:
We have six of the traps built by Teton Welding in Choteau, Montana Tetonwelding@montana.com and we have been pleased with them overall for the last 20+ years.
Manager’s Corner

Rich Beausoleil, Washington Department of Fish and Wildlife:
I also use the one Carl mentioned but would suggest the side-mounted door rather than the guillotine. The collapsible frame for the guillotine tends to warp and the track gets dirty which reduces closing speed of the door. Releasing a bear is also much easier with the side-mounted door. I like the looks of the Cambrian design but wonder if there is a way to construct it with aluminum (like Teton uses) to reduce the weight without compromising its ability to contain a bear. It resembles the cougar live-traps we use and they have limited angles for immobilization.

Steve Nadeau, Idaho Department of Fish and Game:
We also never used guillotine style near campgrounds or anywhere people or pets could get injured. Swinging doors were safer.


Charlie Brown, Rhode Island Fish and Wildlife:
This summer we purchased a culvert trap from Wildlife Control Supplies in CT. We have not had to use it yet but I like the features and it comes mounted on a trailer. They were recommended to me by Paul Rego of CT who may have one or more of their traps.

Mark Vieira, Colorado Parks and Wildlife:
Another option for a lightweight trap design several of us have used, and modified, for various purposes in Colorado. This trap can be slid into a pickup by a single burly individual, and two people can carry it a reasonable distance (hundred+ yards) if needed. This has worked for all sizes of black bear, although I would suggest reducing the small jab pole window as I had an adult female escape without skipping a beat. The door isn’t guillotine style, more of a swing down using an archery release as the trigger.

David Kocha, Virginia Department of Game and Inland Fisheries:
You know how our equipment works. Basic all aluminum culvert trap (except trigger and grate at end) with guillotine door. Vehicle mounted equipment allows for loading and weighing of bear by one person. Traps are on runners and can be pulled to remote areas behind an ATV. Ours are manufactured locally by Kreider Machine Shop in Harrisonburg.

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Kim Annis, Montana Fish Wildlife and Parks:
For the last 10 years I’ve used traps made by Teton Welding out of Choteau, Montana. I have 2 of their single traps and a family (double) trap. I very much like their lightweight design (all aluminum), and that they can be unbolted from their trailers and placed on the ground or in the back of a truck bed. Without their trailers, the traps are very lightweight and I can push one in and out of the bed of my truck by myself (when empty of course). I had my single traps modified to have the bait pull come from the floor instead of from the ceiling. I use a dart pistol for all of my immobilizations, so I can’t comment on how well the top windows or front window works with a jab stick. I haven’t had any issues with the drop door or frame, but the pulley system works well for releasing. For grizzly bears, we stay inside the truck and use a pulley to open the trap door with a truck winch mounted to the headache rack.

Maria Almeida, Ontario Ministry of Natural Resources and Forestry:
The Cambrian trap is now also available as a multi-compartment trap to allow capture of female with cubs, and in cub-size. The plans are available from Jeremy Inglis, Ministry of Natural Resources and Forestry, jeremy.inglis@ontario.ca. In 2015, a mining company in an area with a limited road network modified the design to allow for transportation by aircraft; the 8’ trap can be divided into two 4’ transport cages and constructed out of aluminum for “long lining” beneath a helicopter. Those plans are available from B&D Manufacturing in ON, Canada ryan.catton@bdmfg.com. One of the designers of the original Cambrian trap was involved in developing the aluminum trap modifications: Mike Hall – mike.hall@ontario.ca. The mesh size is important as wider spaces allow a bear to grab onto it with their claws such as a female did in 2003. The better mesh size to reference is: 1/2” #13 F Flat (.188) Heavy Expanded Metal Sheet. The small trap was developed before coming up with the “partitioned” version of the full-sized trap (2’ X 2’ X 4’ instead of 4’ X 4’ X 8’). It has proven quite effective for successfully capturing and releasing family groups. Even with the partitioned traps, we still have occasion to use the smaller cub traps (e.g. orphaned cubs). All Cambrian trap design plans are available upon request.

(top left) Aluminum Cambrian bear trap used by Ontario Ministry of Natural Resources and Forestry staff with middle separator for capturing family groups. (center) Aluminum Cambrian bear trap used by Ontario Ministry of Natural Resources and Forestry staff that can be transported by helicopter in 2 pieces. (right) Two commonly used mesh sizes for Cambrian bear traps. Ontario Ministry of Natural Resources and Forestry staff prefer the smaller mesh to avoid injuries to the bear’s claws. (bottom left) A Cambrian bear trap destroyed by a bear (before escaping) when the larger mesh size was used, smaller mesh to also avoid this happening. (right) Two sizes of Cambrian bear traps used by Ontario Ministry of Natural Resources and Forestry staff for catching family groups. (Photos: Maria Almeida).

In 2017, the FWC received a total of $825,000 to share the cost of bear-resistant equipment with local governments to reduce bear access to garbage (http://myfwc.com/news/news-releases/2016/december/13/funding-announcement/). In addition to $325,000 in CWT funding, the FWC was appropriated $500,000 from the Florida Legislature. The majority of the State-appropriated funds (approximately $375,000) came from proceeds of permit sales for the FWC’s 2015 bear hunt. At least 60% of the State-appropriated funding had to go to local governments who implemented ordinances requiring trash be kept secure from bears.

Over 90% of the 6,000 bear-related calls the FWC receives each year come from 16 of the 67 counties in Florida. Therefore, the FWC worked directly with those counties, as well as cities and homeowner’s associations (HOAs) within those counties, to encourage them to apply for funding. The FWC received 19 applications from 13 counties, 3 cities, and 3 HOAs. A panel of FWC staff evaluated each application based on several factors, including:

- Does the local government have an ordinance in place that requires residents and businesses to keep trash and other attractants secure from bears?
- How many households within the local government area have significant human-bear conflicts?
- How much funding will the local government match for the project (funds or in-kind or a combination of both)?
- What is the likelihood the project will result in a community-wide reduction of human-bear conflicts?
- How many residences and businesses are expected to benefit from the project?

The FWC awarded funding to 11 counties, 3 cities, and 2 HOAs, who in turn provided a total of $429,000 in matching funds and in-kind services, resulting in an overall 34% match to grant funds. The projects will ultimately result in 5,200 bear-resistant trashcans, 3,800 sets of hardware that can be added to regular trashcans to make them bear-resistant, and 40 bear-resistant dumpsters.

In addition to providing over 9,000 residents with bear-resistant equipment, the funding also provided incentives to local governments to pass ordinances requiring trash be kept secure from bears. After the funding was announced, 3 counties (Lake, Orange, and Santa Rosa), 1 city (Fort Walton Beach), and several HOAs passed ordinances requiring trash be kept secure, which will result in community-wide reductions in human-bear conflicts.

Before announcing the funding, only 1 company (Kodiak Products, http://www.kodiak-products.com/) offered bear-resistant trashcans that were compatible with fully-automated waste service systems. After the announcement, the FWC worked with 2 additional companies (Rehrig Pacific, http://www.rehrigpacific.com/ and Toter, http://www.toter.com/), and now all 3 companies are offering this advanced capability. In addition to meeting the needs of more advanced waste collection systems, the increase in the number of companies offering this product helps bring down the cost of these cans, and therefore increases their use, among residents and businesses.

The 2017 grant program was so successful that the Legislature provided $415,000 in General Revenue funds to pay for the program again in 2018. In addition to the State-appropriated funds, the FWC received $100,000 in CWT funds for 2018. The FWC is offering to cost-share a total of $515,000 to local governments to help reduce human-bear conflicts in 2018 (http://myfwc.com/wildlifehabitats/managed/bear/wise/). Between 2007 and 2018, the FWC will have provided a total of $1.56 million in incentive funds to local governments, private businesses, and Florida residents to assist them in securing garbage and other attractants to reduce human-bear conflicts.
Workshop Reports

Shining a Light on Sun Bears

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Sun bears (Helarctos malayanus) are often referred to as the least-known or most forgotten of all bear species. This can be attributed, in part, to the relative difficulty inherent in conducting ecological field research on this elusive forest-dwelling species. Also, until recently most sun bear range states did not have the capacity for, or interest in, conducting robust ecological research. And throughout much of their range, sun bears historically shared their habitat and the spotlight with such attention-grabbing species as tigers, elephants, and orangutans.

In September 2017, sun bears were front and centre when 100 experts, researchers, conservationists, government representatives and population managers from across the globe convened in Kuala Lumpur, Malaysia, for the 1st International Symposium for Sun Bear Conservation and Management. The 3-day symposium was co-hosted by Free the Bears, the IUCN Bear Specialist Group, and TRAFFIC Southeast Asia.

Although sun bears remain the least-studied bear species, research and conservation efforts have advanced greatly in the past few years and the symposium achieved what would have been inconceivable 10 years ago: over 30 presentations and more than 20 hour-long panel discussions and workshop sessions dedicated solely to the conservation and management of sun bears. A diverse array of topics was covered, including: updates to the IUCN Red List Assessment and range map; genetic analysis; assessing wild sun bear populations; health and welfare; thermoregulation and metabolic rates in captive sun bears; trade and use of sun bears as traditional medicine; education and behavior change; status review and threat assessment of ex-situ sun bear populations; and habitat requirements of in-situ populations.

Among the participants were representatives from, or those knowledgeable about, 10 of 11 sun bear range states. China, which has just 1 recent record of an individual sun bear occurring in Yunnan Province (Li et al. 2017), was the only range state not represented. Sixty percent of participants are currently involved in sun bear conservation projects, while 43% are involved in sun bear research. Participants represented both in-situ and ex-situ sun bear populations and were affiliated with several international conservation and management bodies, including: the IUCN Bear Specialist Group; BSG Sun Bear Expert Team; BSG Captive Bears Expert Team; regional zoological associations (EAZA, AZA and ZAA); and regional Bear Taxon Advisory Groups.

The symposium was designed to capture the collective knowledge and expertise of those in attendance in order to inform the development of a range-wide conservation strategy for sun bears, which was initiated during a 2-day conservation planning workshop held immediately after the symposium. The conservation planning workshop was facilitated by Caroline Lees.
Workshop Reports

of the IUCN Conservation Planning Specialist Group (CPSG). The planning process followed the CPSG's One Plan Approach which promotes integrated in-situ and ex-situ species conservation planning. The approach considers all populations of the species, inside and outside their natural range, under all conditions of management, and engages all responsible parties from the very start of any species conservation planning process (Byers et al. 2013).

During the conservation planning workshop, the 25 participants divided into working groups to discuss in depth the issues of: habitat protection; trade and consumption; ex-situ management; and communications. For each issue, a set of objectives were defined and prioritized, informed by the discussions during the symposium. Specific actions required to achieve the objectives were then identified for implementation over the next 5-10 years. The conservation strategy document will be finalized and circulated in 2018.

Despite the diversity of threats, opinions, and solutions that existed amongst participants, everyone was united by a common desire to see the sun bear survive and thrive in its natural environment as an important part of the forest ecosystem. It is hoped that this symposium and subsequent conservation action plan will help galvanize support for this often-overlooked species and ensure that the smallest of all bears continues to enjoy days in the sun for many years to come.

Acknowledgments

The organizing committee for the 1st International Symposium on Sun Bear Conservation and Management comprised: Brian Crudge and Matt Hunt (Free the Bears); David Garshelis (IUCN Bear Specialist Group Co-chair); Robert Steinmetz (IUCN Bear Specialist Group Co-chair; Sun Bear Expert Team Co-chair); Gabriella Fredriksson (Sun Bear Expert Team Co-chair); Lalita Gomez (TRAFFIC Southeast Asia); and Siew Te Wong (Bornean Sun Bear Conservation Centre).

The symposium and workshop were kindly supported by: Wildlife Reserves Singapore; Perth Zoo Wildlife Conservation Action; Taronga Conservation Society Australia; Bornean Sun Bear Conservation Centre; Hauser Bears; and the International Association for Bear Research and Management Research.

We thank Peppermint Narwhal for designing the symposium logo. We are grateful to all donors for their support of sun bear conservation in Southeast Asia and beyond, and for helping to shine a light on sun bears.

#savesunbears

Literature Cited


Workshop Announcements

5th International Human-Bear Conflicts Workshop

March 25-29, 2018 | Gatlinburg, Tennessee

Book Your Room Now for the
5th International Human-Bear Conflicts Workshop

The workshop planning team is asking that you please book your hotel room and register now. A block of rooms are being held for the workshop, however a decision to release a portion of those rooms will need to be made soon. Although there are other hotels in the area, due to workshop logistics it is best to stay at the Park Vista Hotel. To book your room please contact Park Vista hotel at 1-800-421-PARK or http://www.parkvista.com. The workshop rate is US$91.00/night and the group code is HBC. To register for the workshop, please visit the workshop web site at http://www.humanbearconflict.com. Registration is US$100 US (US$75 for students).

Workshop sessions include a range of human-bear conflict topics that are common to all 8 bear species worldwide, but most topics and specific issues will focus on the 3 North American bear species. Presenters will have the opportunity to publish their work as part a special issue on human-bear conflicts in the Jack H. Berryman Institute Human-Wildlife Interactions journal (https://digitalcommons.usu.edu/hwi/). There will also be a poster session one evening, as well as an entire day devoted to working groups/special sessions (e.g., Polar Bear Conflicts Working Group, SEAFWA Large Carnivore Working Group, etc.). To request a working group/special session, please contact Bill Stiver (bill_stiver@nps.gov) or Dan Gibbs (Dan.Gibbs@tn.gov).

13th Western Black Bear Workshop
Grand Junction, Colorado  May 21-24, 2018

The Colorado steering committee, and the Western Association of Fish and Wildlife Agencies (WAFWA), would like to extend an invitation to the 13th Western Black Bear Workshop, scheduled for May 21-24, 2018 in Grand Junction, Colorado.

The workshop, meals and lodging will all be at the Doubletree Hotel located at 743 Horizon Dr., Grand Junction, Colorado and only 1 mile from the Grand Junction Regional Airport.

- The Grand Junction Regional Airport has numerous commercial flight options and connections from both Denver and other western hubs on American Airline, Delta and United.
- Additional tourism and travel information is available at: https://www.visitgrandjunction.com/
- The workshop will begin with a social on the evening of Monday, 21st and conclude on the afternoon of Thursday, 24th.

We plan to devote a full day on topics involving human – bear conflicts including agency communication and messaging, human dimensions, quantifying conflicts, bear management techniques to reduce conflicts, and legal/liability aspects of bear attacks. Workshop topics will also feature jurisdictional updates, sessions focusing on harvest strategies, bear predation of ungulates, general ecology and others. Additional topics may be added as we receive and review abstracts over the next few months.

A First Call for Papers and First Call for Posters will be going out mid-November 2017 so keep an eye out for that.

Once the WAFWA website page is ready to accept workshop registration, we will send another email, reminding you that it’s time to register. In the meantime, if there are any questions regarding the workshop venue please email marie.haas@state.co.us
The 26th International Conference on Bear Research & Management will be held between September 16-21, 2018 in Ljubljana, Slovenia. This IBA Conference entitled “Life with Bears” will be hosted in Slovenia for the first time.

Slovenia is a small Central-European country characterised by an exceptional diversity of landscapes, pristine nature and friendly people. It is also a home to approximately 500 brown bears that occur there in one of the world highest population densities. The Slovenian brown bear is the western-most population of the Dinara-Pindos brown bear population, and was used as a source for all reintroductions of this species to Western Europe (Italy, Austria and France). Bears are recognized in Slovenia as an important natural heritage. While in the past their value has mainly been for hunting trophies and for their meat, today the bears are seen as an important part of nature, and in recent years an important ecotourism attraction. While there are tangible benefits for people for coexisting with bears brings, human-bear conflicts remain an ongoing challenge and Slovenia is continuously taking steps to face this challenge and improve coexistence. An important issue for bear conservation in the politically fragmented landscape of Europe is transboundary, population-level coordination of management planning and implementation of actions. A consortium of Slovenian expert organizations in cooperation with partners from Croatia, Italy and Austria, took a lead in tackling this challenge through implementation of an international project entitled “Population level management and conservation of brown bears in northern Dinaric Mountains and the Alps” (or LIFE DINALP BEAR). The project is financed through the European Union’s LIFE programme and is the host of the IBA conference.

This already traditional conference will once again bring together world-leading experts to discuss and give insight into the latest developments of bear research and management, tackling all important challenges and opportunities of coexist-

(top left) Zmajski most (photo: Aleš Frelih), (center) Čevljarski most (photo: Dunja Wedam), (right) Panorama of Ljubljana (photo: PhMatej Kastelic), (bottom left & center) Venue (photos: The Grand Hotel Union), (right) bears (photo: Marko Masterl).
Conference Announcements

Ljubljana is the capital of Slovenia and is regarded as a logistically stress-free destination: its compact size allows for walking between most venues and hotels; the public transport network, or even biking using own or public bikes, are an option to move around from less central hotels.

The venue for the conference will be The Grand Hotel Union. Centrally located close to the Old Town, it is the largest convention hotel in Ljubljana. Built in 1905 in the Art Nouveau style, it combines elegance and a long-term tradition in hosting successful events and prominent guests.

Few more points underlining the qualities of the destination:

- Safety counts: two Reader's Digest social experiments placed Ljubljana among the most honest cities in the world (the lost wallet or mobile phone test). Slovenia also ranks in the top 30 safest countries on the world crime and safety index published by Numbeo.
- Ljubljana has been named European Green Capital 2016 as a result of its long-term sustainable development vision and the visible results achieved over the last decade.
- In spring 2015, Ljubljana received the Tourism for Tomorrow Award for the most sustainable destination at the Global Summit of the World Travel and Tourism Council (WTTC).
- Forbes ranked Ljubljana fifth among the most desirable cities to live in Europe – we simply like to share our quality of life with visitors from abroad.
- Lonely Planet, the world’s leading travel guide book publisher, has listed Ljubljana at No. 2 on its Best in Europe 2014 list, which includes 10 European destinations considered by LP editors as the most worth visiting this year.
- Ljubljana is a city for the human scale, with a personal touch and imbued in green. It is distinguished by an attractive historic quarter with a cozy, lounge-style feel and offers very good value for money.
- Locals have good foreign language skills in all everyday situations: being understood is easy.
- With 60,000 university students in a population of 280,000, Ljubljana has a young, creative vibe.
- The quality and diversity of the gastronomic offer in all price ranges is also an asset of the destination.

Student Forum

Truman Listserv and Facebook Page

- Discussions pertaining to bear biology, management, or study design challenges
- Assistance with proposals and study design through IBA professionals
- Job searches, announcements, information regarding the IBA and student membership
- Planning for IBA student activities and meetings
- IBA membership is encouraged, but not required, for initial sign-up

Listserv Signup Instructions
- Follow the links to request an invitation
- If you’re a new member, please submit a paragraph about your project and include your contact information so we can all get to know you.

Facebook Signup Instructions
- Visit: https://facebook.com/groups/IBA.Conference/
Post-Conference Homework for Students

Amy Macleod
MSc student, University of Alberta, Edmonton, AB, Canada
Email: acmacleod@gmail.com

I write this before the IBA conference in Ecuador but you will all be reading this issue of the IBN after the conference is over so here I will address some post-conference homework that is essential to maximizing the benefit of attending a conference.

You’ve completed the marathon that is a conference and you’ve returned home. After a lot of planning and prep work hopefully it was a successful conference for you: you learned new information, maybe presented your own research, gained experience, and made connections as you networked. It’s usually a good feeling coming out of a conference, you’re energized by the experience but turning that energy into something more takes a bit more work. We all unpack our bags and have a small pile of documents from the conference: workshop documents, conference program with notes in the margins or on separate pieces of paper on various presentations, more pieces of paper related to vendor wares (projects, equipment, books, newsletters) from the exhibit hall, business cards and email addresses taken down and put in a safe place for ‘later’, new Social Media connections made or you have usernames of people you want to follow, etc. All that needs a bit of attention so schedule in some post-conference tasks during the week following your return home, as hard as that is to do with an overflowing email inbox, a to do list that hasn’t been touched in a week (or more), and family/friends wanting some quality time. If you don’t give it some attention that small pile of conference information will become an artifact on your desk, one that you mean to get to but never do until you finally give up and file away with the rest of past conference documents.

So, go through that pile. Pull out the important information in the notes you made, they may be ideas you had, analyses you’d like to apply to your own work, or contact information, and move forward with them. Make a list of the things you want to apply to your own work. Send a few follow-up emails to people you met or got inspiration from their presentations, ask questions about their research or thank them for their advice if they pointed you in a direction you wouldn’t have thought to go with your work (you may want to draft and wait a few days to send, remember they are dealing with a full inbox too). Emails are also good to (re)connect with people you know that would be interested in work you saw but weren’t able to attend the conference, or to connect them to the presenter (or vice versa). If you didn’t do it during the conference, like, friend, follow your new social media contacts. Also follow up on questions or comments made to your social media posts during the conference, these may be attendees of the conference but they may also be non-attendees who are following the conference hashtag or following people that are posting about your work. Finally, decide what you want to keep a digital and/or paper copy of and recycle the rest. And be disciplined about it, will you really look at it again? If not, don’t add more clutter to your life by keeping it.

Some attendees are forced to address the pile sooner rather than later if they are required to report back to an employer or grantor on the conference and/or experience gained. Whether required or not sometimes a thank you for allowing time away from the office or funds to attend a conference is a nice gesture to emphasize how much you appreciated it and how you benefited from the experience. Perhaps someone did this previously and was part of the reason you were able to go, and/or this gesture will give them more reason to let others attend in the future.

I hope the IBA conference in Ecuador, or any other conference you attend, are events you never forget. A great conference can inspire you, advance your work and your career, expand your network of professional contacts, help you reconnect with old contacts, and sometimes, you’ll even gain a few life-long friends in the process.

Recent Bear Literature

Marion Schneider
mfschneider@gmx.de

If you have an article recently published please email the citation for inclusion in the next issue of Recent Bear Literature. The deadlines for the next issues are:

- Spring Issue: 5 February: Agnieszka Sergiel: agasergiel@gmail.com
- Summer Issue: 12 July: Agnes Pelletier: asg.pelletier@gmail.com
- Fall Issue: 5 October: Marion Schneider: mfschneider@gmx.de
Publications

For easy access to articles, we are now including the DOI citation and corresponding author email address, if available. To open articles from their DOI, enter the DOI citation in the text box provided at the following website: http://dx.doi.org


Albrecht, J., K.A. Bartoń, N. Selva, R.S. Sommer, J.E. Swenson and R. Bischof. 2017. Humans and climate change drove the holocene decline of the brown bear. Scientific Reports 7(1):10399. DOI: http://dx.doi.org/10.1038/s41598-017-10772-6. Email: joerg.albrecht@senckenberg.de.


Pigeon, K.E., E. Cardinal, G.B. Stenhouse and S.D. Côté. 2017. Recognizing the importance of an all-inclusive approach to brown bear conservation now and into the future. Oecologia. DOI: http://dx.doi.org/10.1007/s00442-017-3950-0. Email: karine.pigeon@gmail.com.


Song, C., B. Wang, J. Tan, L. Zhu, and D. Lou. 2017. Discovery of tauroursodeoxycholic acid biotransformation enzymes from the gut microbiome of black bears using metagenomics. Scientific Reports 7:45495. DOI: http://dx.doi.org/10.1038/srep45495. Email: wangbc2000@126.com, moc.621@iamnujnat.


Wenhan, C., X. Zhouqing, L. Yi, L. Ming and S. Liguang. 2017. Response of polar regions to emerging organic pollutant organophosphorus esters (opes), a review. Advances in Polar Science 13-22. Email: wcheng@ustc.edu.cn, zqxie@ustc.edu.cn.


Yan, Z. and J. Li. 2017. Giant panda survival crisis remains serious based on the ecosystem catastrophe model. Ecological Modelling 359(Supplement C):128-134. DOI: https://doi.org/10.1016/j.ecolmodel.2017.05.022. Email: lijq@bjfu.edu.cn.


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About the International Association for Bear Research and Management (IBA)

The International Association for Bear Research and Management (IBA) is a non-profit tax-exempt organization open to professional biologists, wildlife managers, and others dedicated to the conservation of all bear species. The organization has approximately 500 members from over 50 countries. It supports the scientific management of bears through research and distribution of information. The IBA sponsors international conferences on all aspects of bear biology, ecology, and management. The proceedings are published as peer-reviewed scientific papers in the journal Ursus.

IBA Mission Statement

Goal: The goal of the International Association for Bear Research and Management (IBA) is to promote the conservation and restoration of the world’s bears through science-based research, management, and education.

Objectives: In support of this goal, IBA’s objectives are to:
1. Promote and foster well-designed research of the highest professional standards.
2. Develop and promote sound stewardship of the world’s bears through scientifically based population and habitat management.
3. Publish and distribute, through its conferences and publications, peer-reviewed scientific and technical information of high quality addressing broad issues of ecology, conservation, and management.
4. Encourage communication and collaboration across scientific disciplines and among bear researchers and managers through conferences, workshops, and newsletters.
5. Increase public awareness and understanding of bear ecology, conservation, and management by encouraging the translation of technical information into popular literature and other media, as well as through other educational forums.
6. Encourage the professional growth and development of our members.
7. Provide professional counsel and advice on issues of natural resource policy related to bear management and conservation.
8. Maintain the highest standards of professional ethics and scientific integrity.
9. Encourage full international participation in the IBA through the siting of conferences, active recruitment of international members and officers, and through financial support for international research, travel to meetings, memberships, and journal subscriptions.
10. Through its integrated relationship with the Bear Specialist Group of the World Conservation Union (IUCN)/Species Survival Commission, identify priorities in bear research and management and recruit project proposals to the IBA Grants Program that address these priorities.
11. Build an endowment and a future funding base to provide ongoing support for IBA core functions and for the IBA Grants Program.
12. Support innovative solutions to bear conservation dilemmas that involve local communities as well as national or regional governments and, to the extent possible, address their needs without compromising bear conservation, recognizing that conservation is most successful where human communities are stable and can see the benefits of conservation efforts.
13. Form partnerships with other institutions to achieve conservation goals, where partnerships could provide additional funding, knowledge of geographical areas, or expertise in scientific or non-scientific sectors.