

# International Bear News



Tri-Annual Newsletter of the  
International Association for  
Bear Research and Management (IBA)  
and the IUCN/SSC Bear Specialist Group

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24th International Conference on Bear Research & Management, June 12-16, 2016, Anchorage, Alaska, U.S.A.  
Read conference summaries on pages 8-14.

IBA website: [www.bearbiology.org](http://www.bearbiology.org)

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### Editorial Policy

International Bear News welcomes articles about biology, conservation, and management of the world's eight bear species. Submissions of about 750 words are preferred, and photos, drawings, and charts are appreciated. Submissions to regional correspondents by email are preferred; otherwise, mail or fax to the address above. IBA reserves the right to accept, reject, and edit submissions.



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Consult website for submission guidelines. Deadline for the Fall 2016 issue is 5 October 2016.



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The use of the IBA logo at the end of an article indicates articles submitted via the IBA regional correspondents and the IBN editorial staff.



The use of the BSG logo at the end of an article indicates articles submitted via the Bear Specialist Group.



The use of the IBA-BCF logo at the beginning of an article signifies work that was supported, at least in part, by the Bear Conservation Fund through an IBA grant.

# IBA President

## President's Column

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The heart of IBA is its people — not the council or officers or donors or committee chairs, but the member scientists, doing their work around the world. Nowhere is this more apparent than at our conferences. The 24th IBA Conference held this summer in Anchorage, Alaska, was our largest conference to date. Topics were wide-ranging and the amount of collaborative work presented was impressive. Council met to handle the nuts and bolts that keep IBA running. Committees worked on various tasks and conference organizers and students were the ubiquitous worker bees. But the palpable energy in the air rose from the mass of other attendees, there to glean knowledge, synthesize, and enjoy the company of colleagues.



This issue of IBN provides a glimpse of the conference week, including opening remarks, summaries of sessions, and associated community and media outreach. Several articles give recognition to individual IBA members, both long-time and new biologists. Dr. Chuck Jonkel, a founding member of IBA and one of its early Presidents, died in April of this year. He left a legacy of fierce advocacy for grizzly bears, polar bears, excellence in wildlife film, and social justice, as well as a devoted following of former students and mentees. If you didn't know Chuck, you will wish that you had after reading the tribute in this IBN. Dr. Ali Nawaz, a long-time member and early recipient of IBA grant funding, recently received the prestigious Whitley Award for snow leopard conservation work in Pakistan. Dr. Nawaz currently sits on our Research and Conservation Grants Committee. Three student members of IBA received recognition for their excellent conference presentations: Aimee Tallian (Best Oral Presentation), Andrea Del Pilar Borbón García (Best Poster), and Florent Bled (Peoples' Choice). And I have the pleasure here of announcing, to those of you who did not make it to Anchorage, the recipients of IBA's two professional awards.

### IBA Distinguished Service Award

The IBA Distinguished Service Award, given only occasionally by Council, recognizes an IBA member for outstanding service that is far beyond the call of duty or expectation. This year, Council honors Diana Doan Crider, who needs little introduction to most IBA members. Diana is co-founder and director of Animo Partnership in Natural Resources and Adjunct Professor at Texas A&M University. During my tenure on Council, it has never ceased to amaze me how much and in how many ways Diana contributes to the operations and well-being of IBA every day, year after year.

Diana attended her first IBA conference as a student in 1983 and spent the next 19 years learning about bears and building her network of biologist friends. Since attending her first Council meeting in 2002, she has served as 2-term Secretary, long-term webmaster, and student affairs coordinator. She organized and executed the 2007 IBA conference in Monterrey, Mexico, and helped author extensive guidelines for future conference organizers. Diana shepherded the website through several iterations, helped create and manage IBA's Facebook page, ushered IBA into the 21st century by establishing electronic voting and Eblasts, and designed and produced brochures. As the steady wind behind our student programs, she lobbied for and executed the student awards program, student events at conferences, a student list serve, the student auction, and, this year, the sale of conference T-shirts to provide future student travel funding. She has served on membership, public relations, travel grants, and abstract selection committees.



Diana surprised and overwhelmed by the standing ovation when she received her award.

Undoubtedly, what most IBA members know best about Diana is her unfettered dedication to our organization and to making it a welcoming and supportive organization. Diana has brought countless new members into our ranks. She communicates with more members on a daily basis than anyone I know. She keeps her ear to the ground for those needing help, or a message of encouragement, or material assistance. We cannot thank this remarkable woman enough. Congratulations, Diana. Without you, there is no doubt that IBA would be a different, and lesser, organization.

## President's Award

The President's Award recognizes someone of the IBA President's own choosing, for his or her contributions to the field of bear biology and conservation, contributions to the IBA, and/or for their particular importance to the president's own professional career.

I am humbled and happy to be in the position of giving this award to someone who fits all of these categories. Dr. Dave Garshelis has been Bear Project Leader for the Minnesota Department of Natural Resources for 33 years and Co-Chair of the IUCN Bear Specialist Group for over a decade. I know no one who has worked with more passion, dedication, diligence, determination, and generosity to reach out to biologists around the world and help them receive the training and resources they need to do their work, particularly in those places where bears are least known and most at risk. Dave has worked without fanfare or personal gain other than his own satisfaction in working in many corners of the world and moving conservation forward. He has done this while, at his "day job" in Minnesota, making significant contributions to and building an often-sought expertise in the study and management of North American bear populations. Through the years, Dave has been a trusted and regular contributor to key IBA programs, helping shape our publications, conferences, and grants programs with intelligence and integrity.

I admit to some conflicting feelings about giving this award to Dave. Would it seem too close, too much like "keeping it all in the family"? How could I present this award to someone, of all the deserving colleagues in the world, whose desk was 30 feet from mine for the past 33 years? But now that I am retired from my work at the Minnesota DNR, I can, with free conscience, recognize this man for what he has meant to bear conservation, to the IBA, and to me. And I know no one who would argue with how deserving Dave is of this recognition.

For me, personally, Dave has been mentor, confidante, field partner, advisor, and collaborator, both in research and in my work with IBA. He has challenged and taught me to be more discerning, more precise in my thinking, more articulate, more careful with my words and judgments, and more honest. We have shared many unforgettable moments, particularly in the woods of northern Minnesota, and I have been fortunate to work with him. It is a happy moment to honor and to give my deepest thanks to Dave Garshelis, tireless professional, colleague, and friend.



Karen (right) presenting Dave (left) with the President's Award.

## Council News Brief

Council had a productive meeting in Anchorage. Conferences are lined up for November, 2017, in Quito, Ecuador, and fall, 2018 in Ljubliana, Slovenia. A potential host in the United States has stepped up for 2019. Financially, IBA is strong, operating well in the black for the past 5 years. In 2015, IBA spent or allocated approximately \$76,000 for grants, \$35,000 for *Ursus* editorial services, production, and distribution, and \$10,000 for operations. Memberships currently number >600. Earlier this spring, Council submitted comments to the USFWS on the current proposal to remove the Yellowstone grizzly bear from the Endangered Species List. Council also submitted a letter to Washington State University in support of the continued operation and improvement of the Bear Research Center Facility located there. These comments can be viewed on the IBA website.



## BSG: Year in Review and a Peek Forward

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### Our Mission

The Bear Specialist Group strives to promote the conservation of bears living in their natural habitats across their world-wide distribution. We do this by gaining, synthesizing and disseminating information; aiding, promoting and supporting conservation initiatives; providing technical assistance and building capacity of those involved or interested in bear conservation; and becoming directly involved in issues that reduce threats and foster the conservation of any of the seven species of terrestrial bears.

### Activities and achievements

This year was devoted mainly to completing the Red Listing accounts for the seven species of terrestrial bears. Five of these bear species have clearly increasing threats, associated with forest cover loss, small isolated populations, commercial poaching for parts, conflicts with humans, and declining habitat and food availability associated with climate change. However, the ramifications of these threats for bear populations proved difficult to measure quantitatively making the Red List assessment challenging. The geographic ranges of Andean, sloth, sun, and Asiatic black bears are not well enough known in many areas to assess how they have changed over the years. Therefore, Red List assessments for these species were based on expert opinions of BSG members with regard to rates of population change. For giant pandas, we used population data from the Chinese 4th National Survey, but also relied on separate genetic information to gauge the discreteness of separate populations, which was a key variable in this species' Red Listing.

For brown bears, which globally are Least Concern, our brown bear experts undertook the mammoth task of assessing each of 44 separate populations. Some of these, in North America and Europe, have reliable population estimates and trend information, whereas others, in Asia, were not previously well-defined geographically.

The Red Listing assessments were a good opportunity to critically examine what we know and what we don't know about the world's bears. As such, they highlighted information gaps that we will strive to fill with more and better information. They also highlighted some deficiencies in ways that data have been collected and interpreted, and pointed to notable knowledge gaps and some differences of opinion as to the presence of bear species in some areas. It also provided motivation for our members to work closely with each other to synthesize information about the status of bears, methods of collecting data, and effective methods of conservation.

### Future goals and activities

While updating species range maps for the Red Listing accounts, we identified a number of areas where we are missing information on bear presence: we intend to investigate these on the ground. We are also pursuing better ways of monitoring populations, including the use of "by-catch" data from the monitoring of other species (notably tigers and rhinos — see example, page 20 of this issue).

Having successfully completed population-level assessments for the brown bear, there is interest in pursuing similar assessments for other species.

We are also hoping to better integrate information gained from ex situ bear studies into conservation initiatives.

Some of our members are working toward raising and releasing confiscated bears and restocking of bears to augment depleted populations. An exchange of ideas on this subject is needed.

### Terms end in September

The 4-year terms of members of all specialist groups (SG) end in September, coincident with the end of the term of the SSC Chair, Simon Stuart. Simon has been a wonderful SSC Chair, and a staunch supporter of the BSG's work. We will certainly miss him, and we wish him the very best in whatever he chooses to pursue next.

The new SSC Chair will be elected by the Members Assembly of the World Conservation Congress. That person will then appoint chairs of all the ~130 SGs, who are in turn responsible for choosing their SG members. There are no term limits for SG chairs or SG members, and the SSC has no established criteria for choosing SG members, for structuring individual SGs, or for minimum or maximum SG size. The BSG is comparatively large (200 members) because we strove to find 1 or more



It has been 100 years since the (posthumous) publication of Richard Lydekker's 3 volume treatise "Wild life of the world: a descriptive survey of the geographical distribution of animals" (1916, Frederick Warne and Co., Ltd., London). It contained over 600 original drawings (such as the one here of a sun bear), as well as 120 striking color paintings. One of the intriguing passages in this book is the description of sun bear range (vol. 2, p. 171-172): "The typical bear of southeast Asia is the sun bear (*Ursus malayanus*) which ranges from Chittagong to Borneo, and likewise extends into Sze-chuan province of western China." The historic distribution of sun bears, specifically whether it ranged as far north as Sichuan Province just 100 years ago, is still unsettled. The BSG found through the Red Listing process that even the current distribution of bears, particularly in south and southeast Asia, remains uncertain, which makes it difficult to assess range loss and hence population change.



members to represent each bear species in each range country.

The criteria for choosing BSG membership has been a source of discussion for many years. Our over-riding goal has been to select members who remain active, meaning they freely engage in email discussions, fill out surveys, offer opinions or data, and exhibit a passion for bear conservation. We also strive for a diversity of expertise and viewpoints. Noting that, however, our team structure relies on teamwork to function properly, and teamwork is based on mutual respect.

There will certainly be some turnover in our membership: that is, some current BSG members will not be reappointed and some new people will be invited to join. We believe that some turnover is healthy. We also foresee bringing in more technical advisors or specific scientific authorities to aid in "upgrading" some of the work anticipated for the future. We have purposefully kept the North American component of the BSG rather small, since most of the conservation issues that we deal with are in Asia, Europe, and South America. However, the BSG may benefit from having more members with certain kinds of technical expertise, even if their experience has only been in North America.

Since we do not yet know who will be appointed BSG Chair/Co-chairs, it would be presumptive of us to offer details of what the new BSG membership will look like. However, given the interest that was evident among many of the non-members who attended the BSG business meeting in Anchorage, we believe that it would be worth exploring ways of increasing the breadth of the BSG. We say this with the caveat that we are already one of the largest SGs, and most of our members are active and would likely want to remain.

If you are currently not a BSG member but wish to be considered for membership for the upcoming term, please send us an email explaining your interest in the BSG and how you think you can contribute to the organization and to bear conservation. We'll start a list that we (or the new BSG Chair) can work from.

# Conference Reports

## President's Opening Remarks to the 24th International Conference on Bear Research and Management

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I am happy to welcome you today to the 24th International Conference on Bear Research and Management. This is the second IBA conference to be held in Alaska. The first, in 1995, took place on the University of Alaska, Fairbanks, campus and brought together the largest group of bear biologists ever before assembled. This conference has done the same. I want to thank Grant Hilderbrand and all of his many committee members, for taking on this daunting project. I extend special thanks to WWF Alaska, Brandi Worden, and Margaret Williams, who stepped up at a critical moment to shoulder primary sponsorship for the conference, guaranteeing the financial bottom line.

In the member survey conducted last summer by the IBA Strategic Planning Team, we learned that conferences top the list of things that IBA members think IBA does right. Also high on the list are IBA's culture of support and the openness and accessibility of colleagues to each other. Thus I urge you to take advantage of these next four days with your colleagues and the conference's broad and packed agenda.

This year's theme is "Learning from the Past to Inform the Future". The people in this room represent thousands of individual years of learning. There is wisdom here born of many years' experience as well as brand new knowledge about population restoration, human-bear coexistence, nutrition and reproduction, behavior and mortality, and the essential nature of bears.

Some of the things we have learned in the past 45 years are big lessons about the nature of systems and human thought, for example, how tipping points give way to cascades of accelerating effects, that human impact on global systems is massive, and that we do not change peoples' minds with facts alone. We've learned that we can and do make a difference in conservation, one place at a time, one species at a time. But we also have seen that every time we raise our heads from our work and look around, the world has changed some more and something more will be required to stem the relentless erosion of habitat, natural landscape, un-humanized space. Much of this is due to a very large elephant in the room, rarely spoken of or addressed in public discourse.

In the year I was born, there were about 2.5 billion people in the world. When I entered first grade, this had risen to 3 billion. By the time I graduated from high school, there were 3.8 billion. By the year I got married, 4.1 billion. When I finished my graduate work and started studying bears for the state of Minnesota, there were 4.5 billion, when I had my first child, 4.9 billion, when, in the blink of an eye, I was sending that child away to college, 6.4 billion! And in the last 11 years, the world population has jumped to a phenomenal 7.4 billion. How do we comprehend these numbers? This is 3 people sharing the space that I had to myself on the day I was born, 3 times as many people in the towns and woods and beaches and parks that I grew up in. Is it any wonder that it so often feels like we are trying to stop the bleeding of the glaciers with band-aids?

Most of us in this room are driven to our work by what a prominent US columnist recently described as a "Big Love", born of experiencing great natural beauty and an awe that transcend our day to day experience. It is enormously disheartening at moments when we realize that, despite this great love and all our work, most of us will make far less of a difference, even in a lifetime, than we would like. But, it's not always the case. Once in a while, a Berlin Wall comes down, a treaty is signed, a Gandhi or Mandela is propelled to the surface, a paradigm shifts. And who can say what part in that we each play.

The capacity for that to happen has increased. The nature and speed of our communications today are astounding to those of us who grew up with rotary telephones on a party line, a black and white TV with 2 channels, and a set of encyclopedias to consult for school homework assignments. The speed at which change in knowledge, attitude, and endeavor can occur is unprecedented. So who knows what might happen when we work together? This is why we are here. Use this week. Make connections. Draw on the experience of others. Brainstorm ways to design studies and obtain crucial data. Talk about the elephant in the room. Delve into facts. Get input about how to work effectively in your part of the world. Support each other's work however you can. And have a great week!



## 24th International Conference on Bear Research and Management Session Summaries

### Bear Physiology with Implications for Humans

Moderator: Ole Frobert

Researchers from the US, Europe and Japan presented results, which might help us understand and treat human diseases. One of the biggest challenges to human health is sedentary lifestyle. However, brown and black bears lie still for up to half a year in the den and do not encounter health problems. The bears are obese when they go into hibernation and they avoid blood clots, heart failure, diabetes, kidney disease (they don't pee), osteoporosis, significant loss of muscle and they burn almost exclusively fat. Several promising lines of research inspired by bear physiology now aim at developing new therapies for a number of human diseases.

### Captive-Field Synergy for Bear Conservation Research

Moderator: Megan Owen

Maximizing our understanding of bear physiology, behavior and sensory ecology can provide important insights into how bear populations will be impacted by rapidly changing environmental characteristics. Additionally, emerging technologies will provide unprecedented access to collecting data on free-ranging bears non-invasively. In support of these endeavors, captive bears (i.e., bears in zoos, rescue facilities and temporary holding) provide opportunities for detailed research that are not possible with free-ranging bears. In this session, presenters shared research projects ranging from gaining a detailed understanding of seasonal physiology of Asiatic bears, mass loss rates and reproductive physiology of polar bears, and, importantly, validating proxy data captured through collar mounted accelerometers and extracting demographic data from camera trap photos.

### Physiology of Bears

Moderator: Sean Farley

The pairing of GPS locations and heart rates collected from collared bears was used in a novel fashion to provide insight into the physiological response of bears to roads. This represents an improvement over traditional technology and methods.

Our understanding of the cycles of reproductive endocrinology was improved using non-invasive monitoring of fecal metabolites of oestradiol and progesterone. It appears that in captivity the Andean bear is polyestrous and not seasonally specific as to ovarian activity.

The timing of ovulation in North American bears has been assumed to be induced by coitus, however recent behavioral observation and enzyme immunoassays work indicates that multiple variables may control timing of ovulation in black bears.

Recent work has compared patterns of exposure of Alaska brown bears to pathogens across time and geographic breadth of the state. Blood samples from 4 Alaska populations spanning the state clearly show wide variation in exposure, and highlight the need to understand the mechanisms of variation at the population level.

Asiatic black bears removed to refugia present significant health care issues, including liver cancer, decreased mobility, and cardiovascular compromise. Blood work comparisons between rescued, bile farmed bears and the Japanese subspecies clearly showed relationships for elevated gamma glutamyltransferase and lactate dehydrogenase (LDH) with liver cancer, blood urea nitrogen and LDH with reduced mobility, and creatinine with cardiovascular disease.

Data on fecal glucocorticoid levels are often used as indicators of stress levels in animals, however sampling can be problematic for animal re-introductions or free-ranging populations. The novel application of 2D-ultrasound was used to measure the ratio between the adrenal cortex and the adrenal medulla (C:M ratios) of European brown bears removed from illegal husbandry conditions. Data from day 1 of confiscation and from 1 year later showed significant reduction of the C:M ratio, and thus validated that 2D-ultrasound of adrenal cortex and the adrenal medulla can be used to assess chronic stress in animals.

Chemical signaling is common in wildlife, and bears in particular may have chemosensory variations driven by food and population density and habitat quality

Ursids employ chemical signaling through rubbing against trees, anal gland secretions, biting and clawing and urinating. Added to this is ground pede marking, validated by histological identification of apocrine sweat glands in the feet of two European brown bear populations (Carpathian and Cantabrian). These behaviors are known to present up to 20 distinct compounds, as measured with gas chromatography. A marked, exaggerated walking style typifies active or passive deposition from pedal glands, especially by males.

# Conference Reports

## Conservation and Ecology of Polar Bears

Moderator: Karyn Rode

The session on conservation and ecology of polar bears included 19 presentations largely focused on documenting polar bear responses to rapid changes in their sea ice habitat and identifying new tools for monitoring polar bear populations. This group of studies documented increased locomotion of polar bears due to changes in Arctic sea ice drift, declines in access to food, reduced body condition, decreased body size, and increased use of land and lower quality habitats in response to sea ice loss across multiple subpopulations. Updated long-term projections for polar bears continue to document further sea ice decline and consequent declines in global population size. In light of these projections, studies considered how to effectively manage harvest and interactions. New tools for monitoring bear populations were presented including use of synthetic aperture radar for detecting dens, video camera collars and accelerometers to estimate energetic costs, and gene transcriptomics for assessing bear health.

## Bear Predation and Harvest Management

Moderators: Nate Svoboda and Michelle Tacconelli

The Bear Predation and Harvest Management session was well attended with over 80 individuals attending each presentation. The session covered a range of topics related to harvest and management of bears (primarily brown and black), including the effects of hunting on bear foraging and resource use, shifts in home range in response to hunter harvest, and patterns and trends in harvest management of bears in Alaska. The session included a number of talks on bear predation including the impacts of bears on numerous ungulate prey species such as reindeer calves in Sweden, and muskox in Alaska. A few presentations incorporated the review and analysis of historical harvest trends while others comprised modern techniques such as the use of neck mounted GPS cameras to assess ungulate calf predation. A field manual to identify specific predators at predation sites was also developed and presented during the session. Overall, the session was well attended and well rounded, involving talks from Alaska, Canada, Sweden, and Slovenia.

## Bear Viewing

Moderator: Steve Stringham

Over 4 decades ago when the world's bear biologist first began meeting at IBA conferences, recreational bear viewing was not even a consideration. Since then, however, great strides have been made in research and management of bears for harvest, and in most of the previously back burner fields. But research on viewing and on those aspects of behavior best learned by directly viewing bears have lagged far behind, in part because most of us in this subdiscipline are still working quite independently of one another, focused on bears at the level of proverbial trees without more than glimpsing the larger forest of ecological, social, economic and political contexts in which bear viewing occurs and in which we conduct research and management. This breakout session was intended to provide a broader overview of that proverbial forest so that anyone involved with bear viewing could more fully understand the special challenges this entails and possible options for success.

Federal and state management agencies, along with NGOs, researchers, and guides, gathered to discuss bear viewing in all its diverse forms. A global overview was provided by James Phillips. Best viewing practices guidelines and management challenges were reviewed by Joe Meehan (Alaska Department of Fish & Game), John Neary (US Forest Service, SE Alaska), Tania Lewis (National Park Service, Alaska), Kerry Gunther and Katharine Wilmot (National Park Service, Yellowstone and Tetons), Stephen Stringham (Bear Viewing Association, Alaska), and Grant Machutchon (Commercial Bear Viewing Association, British Columbia). Challenges of protecting viewable bears from human impacts were also discussed by Grant Machutchon and Barrie Gilbert (ret. from Utah State University). Methods of winning the trust and cooperation of bears for recreational viewing and research were presented by Lynn Rogers (Northwoods Research Station) and Stephen Stringham. Stringham also discussed the need to rethink "food conditioning," noting that its effect on human-bear conflicts depends far less on the types of food (anthropogenic vs. natural) than on the context in which it is obtained. Rogers and Stringham also gave presentations on bear body language – information that can potentially allow a person to minimize risk during a close encounter by assessing the bear's mood and intentions, then selecting the most appropriate response; they also warned of vastly exaggerating the attack risk associated with highly ritualized threat displays by bears. Gordon Burghardt, one of the earliest pioneers of bear behavior research, spoke on play behavior by black bears in the natal den, and then on how bears compare favorably with primates on cognitive abilities, due in part of parallel evolution of various brain structures. The session ended with an hour-long workshop during which audience members queried the entire slate of speakers.

## Bear toxicology

Moderators: Thea Bechshoft and Melissa McKinney

The session began with a summary of the collaborative International Polar Year project "BearHealth", focusing on the endocrine effects on thyroid hormones of, in particular, the hydroxylated PCB metabolites in East Greenland and Svalbard polar bears. Moving on to ecotoxicology in Canada, new research was presented on a Northern Contaminants Program project on contaminant-related metabolomic-profiling in Southern and Western Hudson Bay polar bears. Finally, hair mercury levels and trends were determined as part of a USGS project on southern Beaufort Sea polar bears of Alaska, with a focus on relationships to their increased onshore habitat and resource use. The session was rounded off with a summary of the findings of a systematic review of how ecological variables have (or rather, have not) been included in the published polar bear ecotoxicological research literature to date.

The subject of toxicology is still represented by a relatively small number of presentations at IBA conferences. Given the influence of contaminants on, e.g., reproductive, behavioral, and energetic variables, and the potential interactions with other natural and anthropogenic stressors, it is our hope that this research field will be even more well represented at future IBA conferences.

## Challenges and Approaches to Human-Bear Co-existence

Moderators: Kim Jochum, Larry Lewis, and Jake Schlapher

This session purposefully provided a large variety of presentations ranging from projects focusing on the challenges faced when living with bears or recreating in bear country to study approaches that aim to understand and minimize human-bear conflicts. The common goal was to improve our understanding of humans and nature to allow for future co-existence across ecosystems. Many studies applied spatial analysis to human and bear behaviors; other studies applied social science approaches, or both.

Challenges discussed in this session included if large carnivores contribute to recreational values in forests, impacts of humans to bear behavior, overemphasizing of human-bear conflicts in the media, institutional and community responses to inflicted human injuries, amongst others. Presenters came from across the world including India, Russia, Slovakia, Poland, Scandinavia and North America.

Research approaches taken to reduce human-bear encounter challenges were based on various theories and statistical approaches including choice experiments, fear ecology, resilience theory, resource selection functions, step selection functions, generalized linear models, multi-state capture-recapture methods, structured survey designs and interviews. On the management side, approaches discussed included the strength of cost-sharing programs, the use of electric weapons to target problem bears, the use of hunting as a shaping force of bear populations in highly anthropogenic landscapes, and the importance of a well-structured multimedia outreach program for highly-used recreational sites.

Geospatial analysis revealed that black bears actively selected for human development across years on an individual level dependent on availability of quality bear habitat in Colorado. In Scandinavia brown bears were found to use human shields to mediate sexual conflict between male and female bears.

Southwest Alaskan's reported to learn how to be bear aware mainly from friends, not the agency personal. We further learned that on Kamchatka brown bear density does not seem to have an effect on human-bear conflict distribution and that regulatory measures are stringently needed to manage legal hunting. Additionally, sloth bears in India are highly defensive, most likely due to being surrounded by predatory species such as tigers, but a predatory attack has never been observed. Many other important results were communicated through this session about current 'challenges and approaches to human- bear coexistence'. Session chairs are grateful for the large interest and breadth of research identified in this field.

## Population Monitoring

Moderator: Andrea Morehouse

The Population Monitoring session included 9 presentations that reported on results from North America, Japan, and Romania. The session began with a presentation by M. Haroldson that discussed effects of capture on annual survival estimates for grizzly bears in the Yellowstone Ecosystem. There was no support for either short or long-term negative impacts from captures and handling. Any impacts of capture were seen immediately, most typically within 4 days. K. Kendall presented density and annual rate of change for a threatened grizzly bear population in Glacier National Park and the Northern Continental Divide Ecosystem. Kendall et al. estimated positive growth rates for females and males, and growth rates estimated from rub trees were similar to those from hair snags, but slightly higher than those from telemetry estimates. J. Clark presented on the feasibility of spatially explicit capture-recapture (SECR) to produce robust density estimates for large areas while still being cost-efficient. He used simulated data to show that SECR estimates are fairly robust to trap and cluster spacing, and these study designs will be implanted in Florida to produce a state-wide estimate for black bears. F. Van Manen reviewed evidence for density dependence in brown bear populations. He presented information on the relationships of

# Conference Reports

age-specific survival, reproduction, and body growth with population density. Bear populations might be expected to show long-term oscillations around carrying capacity, resulting in periods of decline followed by increase. A. Morehouse presented density and abundance estimates for grizzly bears in southwestern Alberta. Many more bears use this area than are considered residents; management should consider both metrics, and increased collaboration with Montana and British Columbia will likely improve management and monitoring of this international bear population. M. Pop compared population estimates for brown bear, gray wolf, and European lynx to those reported in the literature to evaluate the biological plausibility of the estimates reported by managers in Romania. For brown bear, reported rates were typically higher than realistic growth rates in the published literature, and overestimation in official abundance estimates for brown bears was common. Wolf growth rates were mainly plausible, while lynx abundance was often underestimated. Counties that made the most revenue from brown bear hunting were the most likely to overestimate brown bear abundance. H. Robison presented a new method of estimating brown bear abundance in arctic Alaska using a mark-resight design. The survey is designed to happen after den emergence, but prior to leaf out. A 20,000 km<sup>2</sup> area was separated into subunits and a plane with an observer searched each unit for approximately 1 hour photographing each bear that was observed. A second plane followed and repeated the survey. Photographs between plane observers were compared to determine which bears were marked by the 1st unit, and caught by the 2nd. This method produced the first population estimate in 25 years and estimated about 21 independent brown bears per 1,000 km<sup>2</sup>. T. Mano presented information on brown bear population trends for Hokkaido, Japan. There was an island wide increasing trend in bear population growth; on average population sizes in 2014 were 1.9 times higher than in 1990, though there were large confidence intervals around these estimates. Future work will include hair snag population estimates. A. Tri presented a historical perspective on Minnesota's attempts to use information from harvested black bears to evaluate abundance and population trend. Over the past 30 years they have used a method from Paloheimo and Fraser (1981), a deterministic age-sex model, integrated population models, Downing population reconstruction and statistical population reconstruction. Results using the same data differed between methods. The integrated population models appear to be the best method for now. As evidenced by the talks in this session, estimating population abundance, density, and trend continues to be an important issue in bear ecology and management. The session was well attended and generated thoughtful questions and discussion.

## Informing the Conservation of the World's Bears

Session chair: Dave Garshelis

This session, which included all 7 species of terrestrial bears, examined examples of projects from around the world that are helping to provide information useful to bear conservation. Emre Can led off the session with a global look into the future of bear conservation. He noted that the BSG and IBA frame the way people think and act about research and conservation efforts. To be resilient tomorrow as a research and conservation community, we need to prioritize investing in excellent people; revitalize conservation education and create practical tools for researchers and practitioners.

Next, Diana Doan-Crider showed results of her worldwide survey about bear food monitoring. Diana looked into the prevalence of food monitoring for each of the species in various types of circumstances. Food monitoring was relatively common, but it has often been short-term or the results not applied in any way. She would like to put together a food monitoring working group.

Three papers followed on Andean bears. Paulina Viteri presented results of an exhaustive review of publications about this species. This review suggests that most of the information produced through research projects ended up as abstracts of conference proceedings, technical reports or theses; only a small percentage (10%) is being published in peer-reviewed journals. New scientific journals from Latin America that allow publication in Spanish have increased the number of papers, but information on population size, density, and limiting factors are still missing. Robert Márquez (paper presented by Isaac Goldstein) discussed a large-scale occupancy-based monitoring of Andean bears designed to discern population status and trends (e.g., with respect to conflicts). He observed that population monitoring has often been a waste of time, either because it is too imprecise to detect real effects, or because the information is never used to investigate factors impacting populations. Santiago Molina investigated Andean bear demographics on a smaller scale — in the vicinity of Quito, Ecuador. Twenty individual bears were identified from camera-trap photos, based on their facial markings. A density estimate of 5.0 bears/100 km<sup>2</sup> was derived from a spatially-explicit capture-recapture model.

Moving onto European brown bears, Jonas Kindberg examined the variation in methods used to estimate the size and trend of Europe's 10 bear populations, residing in 22 countries. He concluded that the quality of monitoring methods was a reflection of the wealth of the country, rather than management needs. If methods and databases were shared between countries, it would significantly improve monitoring of the many transboundary populations. To this point, Djuro Huber discussed the importance of data from dead bears as a monitoring tool. Each bear death should be mapped, and a database created that includes sex, age, and cause of death as well as indicators of poor health (e.g., pathogens). This could provide a useful picture of population health and potential threats, and yield clear directions for future management. Rok Černe

reported on bear management in the Dinaric-Pindos and Alpine populations, stressing the transboundary nature of these populations and hence the need for harmonization of methods of population monitoring and conflict mitigation. The project LIFE DINALP BEAR is working to improve collaboration and trust among responsible management and research institutions in 4 countries, as well as interest groups such as farmers, hunters, foresters and NGO's.

The session concluded with 5 talks about bears in Asia. Fakhar-i-Abbas discussed increased governmental interest in bear conservation in Pakistan, including the near end to bear baiting. He presented a distribution map of many disjunct brown bear and Asiatic black bear populations, and a rough estimate of number of bears in each, based on local interviews, and also discussed human-bear conflicts and their influence for adopting a compensation policy. Helly Joshi showed the change in sloth bear habitat in Gujarat state of India during the last 5 decades using the satellite imagery. She talked about the habitat fragmentation occurring at a landscape level in this western-most edge of sloth bear range. Bhupendra Yadav looked at sloth bear status along the northern edge of the range, in Nepal. He obtained camera-trap photos of sloth bears from a tiger survey in 4 reserves in the terai, calculated occupancy and detectability (both of which varied by area and month), and compared these results with a sign-based sloth bear survey in these same reserves in the mid-1990s.

Dajun Wang discussed recently-released results of the Fourth National Panda Survey. The survey indicated an increasing population during the past decade, based on estimated numbers (1596 to 1864) and area of occupancy. This led to a downlisting of pandas from Endangered to Vulnerable on the IUCN Red list: this is an example of a conservation success story, but due to its small population and range, and declining numbers in the southern-most populations, the panda is still very much conservation-dependent.

David O'Connor trained citizen scientists to conduct human dimensions surveys in Lao PDR to assess knowledge, attitudes and usage of bear parts (Asiatic black bears and sun bears). He found that 5-10% of Lao and Chinese used or will use bear bile in the past or future 12 months. Lao people had a stronger preference than Chinese for wild bile (over farmed or synthetic). Demand reduction campaigns should be tailored by country and ethnicity. Further surveys are underway in Cambodia and Vietnam. Liu Fang also discussed issues related to bear bile, specifically whether bear farming in China helps to reduce poaching of wild Asiatic black bears. This was the subject of an IUCN Resolution at the World Conservation Congress in 2012, which prompted a survey of wild bears by the China State Forestry Administration. Village interviews suggested that bear ranges in northeast and south-central China have been slowly expanding, but further study and field verification are needed.



## Student Awards Committee Wrap-up

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The student paper and poster competition was a marked success in Anchorage. In all, 24 students participated in the oral competition and 24 students participated in the poster competition. The breadth and quality of the student research was impressive. We especially thank all those that assisted with the student competition: Kerry Nicholson (AK DFG), Kevin Laves (US Forest Service), Emily Fairbanks (Event Travel Management), and all of the judges that assisted us. Without their dedication, we would not have been successful. We also thank all of the participants in the competition. It was not too long ago when we were giving our first IBA presentations as students and we appreciate all the care, time, and effort that you devoted to your entries.

The winners of the student competition are:

- Best Student Oral Presentation: Aimee Tallian, Competition Between Apex Predators: Brown Bears Decrease Wolf Kill Rate
- Best Student Poster: Andrea Del Pilar Borbón García, Characterization of the Gut Microbiota of Spectacled Bears (*Tremarctos ornatus*) from Feces: Insights into their Feeding Ecology.
- People's Choice Poster: Florent Bled, Multiple Datatypes and Integrated Population Models: How to Improve Our Knowledge of Bears and Other Apex Predators Population Dynamics.



# Conference Reports

## Public Outreach Events of the 24th International Conference on Bear Research and Management, Anchorage, Alaska

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Public outreach for the Anchorage conference was conducted by the Anchorage Bear Committee, a 15 member stakeholder organization created to educate and advise the municipality on human-bear conflicts. Committee members met once a month over a period of 6 months to organize public outreach events.

Our kick-off event was a bear storytelling event at the Bear Tooth Theater Pub on Thursday, July 9th. The event was sold out with more than 400 people in attendance and generated \$2,424 for bear conservation, with half of these proceeds going to the Bear Conservation Fund and half going to our partner organization, WWF for their polar bear programs. The evening was super-fun with bluegrass music provided by Todd Grebe & Cold Country, a first-tap brew named "Trouble" after the bear which kept breaking into the Anchorage Zoo, and 7 stories by locals and bear professionals, including Steve Amstrup. Here's a link to the stories: <http://aknoosphere.com/?s=bear+tales>

Pre-conference radio interviews with Steve Amstrup, Dave Garshelis and Margaret Williams of WWF were conducted by Steve Heimel of "Talk of Alaska": <http://www.alaskapublic.org/2016/06/03/the-science-of-bears/>

Evening lectures provided free to the public on Monday, June 13th, Tuesday, June 14th, and Wednesday, June 15th, were attended by 212, 130 and 120 people, respectively, who chose bears over beautiful evenings of sunshine. Dan Bigley's experience of rebuilding his life after a bear mauling was profiled on KTVA June 14th in the following link: <http://www.ktva.com/blind-bear-attack-survivor-shares-his-story-during-conference-in-anchorage-286/>

Other activities organized by the Public Outreach Committee were a Kid's Passport Game, a Bear Aware Clinic and a Bear Spray Demo put on by the National Outdoor Leadership School, featured in the Anchorage Daily News June 14th: <http://www.adn.com/adventure/outdoors/2016/06/14/watch-an-expert-demonstrate-how-to-use-bear-spray/>

Sandra Talbot, both artist and bear genetics expert, organized a bear art exhibition at a local gallery of contemporary art which was featured in the Anchorage Daily News June 7th: <http://www.adn.com/culture/arts/2016/06/09/international-conference-art-show-and-parade-of-bears-coming-to-anchorage-this-month/>

A permanent art installation, a "Parade of Bears" was also organized by our public outreach committee and the Downtown Anchorage Partnership, featured on KTVA June 27th: <http://www.ktva.com/parade-of-bears-bright-colorful-bears-to-find-permanent-homes-in-anchorage-423/>. The roll-out date for the decorated bears is August 5th. Extra proceeds from the sale of bears will be used to fund student travel grants for the conference in Quito, Ecuador.

Polar bears received a good deal of media coverage:

- June 13, KTUU: <http://www.ktuu.com/content/news/Polar-bears-focal-point-of-international-conference-in-Anchorage-382713391.html>
- June 13, ADN: <http://www.adn.com/arctic/2016/06/12/beaufort-sea-polar-bears-are-spending-more-time-ashore-and-it-may-be-a-wise-move/>
- June 15, ADN: <http://www.adn.com/alaska-news/wildlife/2016/06/14/sea-ice-has-been-keeping-polar-bears-and-humans-apart-until-now/>
- June 17: ADN: <http://www.adn.com/arctic/2016/06/16/want-to-know-how-a-changing-climate-is-affecting-polar-bears-look-at-what-theyre-eating/>

The intelligence of bears with regards to food conditioning and modern bear baiting practices was profiled on June 16th, Anchorage Daily News: <http://www.adn.com/alaska-news/wildlife/2016/06/15/could-brainy-bears-raid-denali-park-campsites-after-feasting-at-bait-stations/>

Lastly, local reporter Rhonda McBride conducted a series of TV interviews with visiting bear biologists. Here is a link to her interview with John Hechtel on bear attacks and Elisabeth Kruger of WWF on June 17th, KTVA Frontiers: <http://www.ktva.com/shows/frontiers/frontiers-extra-bears-bears-bears-759/>



## IBA ELECTIONS

In accordance with IBA bylaws, a Nominations Committee was selected by the President last April to seek out potential candidates for upcoming elections this fall. There are 7 positions open for the 2017 Council: President, Vice-President (Americas), Secretary, Treasurer, Council (3 seats open). The Nominations Committee has presented the list of Candidates to the Secretary, as listed below.

### President:

Chris Servheen (United States)  
Andreas Zedrosser (Norway/Austria)

### Vice-President Americas:

Martyn Obbard (Canada)  
Ximena Velez-Liendo (Bolivia)

### Secretary:

Karine Pigeon (Canada)  
Jennapher Teunissen van Manen (United States; Incumbent)

### Treasurer:

Jennifer Fortin-Noreus (United States)  
Jared Laufenberg (United States)

### Councilor (3):

Nishith Dharaiya (India; Incumbent)  
Klemen Jerina (Slovenia)  
Carl Lackey (United States)  
Andrea Morehouse (Canada)  
Colleen Olfenbuttel (United States)  
Yashikazu Sato (Japan; Incumbent)  
Nuria Selva (Poland)  
Agnieszka Sergiel (Poland)  
Gordon Stenhouse (Canada; Incumbent)  
Konstantin Tirronen (Russia)

Elections will be online; instructions and voting codes will be sent via post card and election specifics will be announced when the voting codes are mailed. Your IBA membership MUST be current in order to vote.

### DEADLINES:

- September 20, 2016: Additional nominations from IBA members submitted to the IBA Secretary, Jennapher Teunissen van Manen (jennapher.teunissenvanmanen@outlook.com)
- October 15, 2016: Deadline for Candidates' Statements to post to website
- November 5, 2016: Post cards mailed out with vote codes.
- November 20, 2016: Online voting opens
- December 15, 2016: Online Voting Closes

Please DO NOT inquire about your vote code unless you have not received it by December 1, 2016. If you have not received it by December 1, 2016, contact IBA Secretary, Jennapher Teunissen van Manen (jennapher.teunissenvanmanen@outlook.com)

If you have any questions regarding the nomination or election process, contact IBA Secretary: Jennapher Teunissen van Manen (Phone: 1-406-600-3397 Email: jennapher.teunissenvanmanen@outlook.com).

# IBA Member News

## Tribute to Dr. Charles Jonkel 1930 – 2016

Edited and compiled by: Diana Doan-Crider (email: Diana@animopartnership.org), Frank Tyro (Retired, Salish Kootenai College, email: frank\_tyro@skc.edu), and Elizabeth Jonkel (email: ejonkel@hotmail.com)

*On July 16, people from all walks of life gathered to celebrate the life of Dr. Charles "Chuck" Jonkel, in Missoula, Montana. It was the anniversary of his birthday, which was often spent with his former students camping along the North Fork of the Flathead River. You might see his name in early publications about bears, or perhaps read that Chuck was the first President of the IBA and first representative for the IUCN/SSC Bear Specialist Group. But for those people who were fortunate enough to know him well, he left a well-marked path of his philosophy on many of us in the IBA that is unseen. He had a deep respect for native peoples everywhere, their intimate knowledge of their environment, and their spirituality. Many of his students at the Border Grizzly Project continue to have a high impact on bear research and management today.*

*We could pen no better words than his daughter, Elizabeth, who wrote this speech to commemorate her father:*

"My father . . . was born on this day in 1930 and he left us on April 12th of this year. . . My father always seemed to me an unstoppable force. . . Even when still, his mind was active and full of thoughts. Chuck could offer answers to what seemed like mysteries of the natural world. And he had a practical sense about how to remedy problems from the mundane, like how to get a car started with air, water and piece of string, to the complex, like how to protect and preserve bear habitat in a way that balanced with the needs of humans . . .

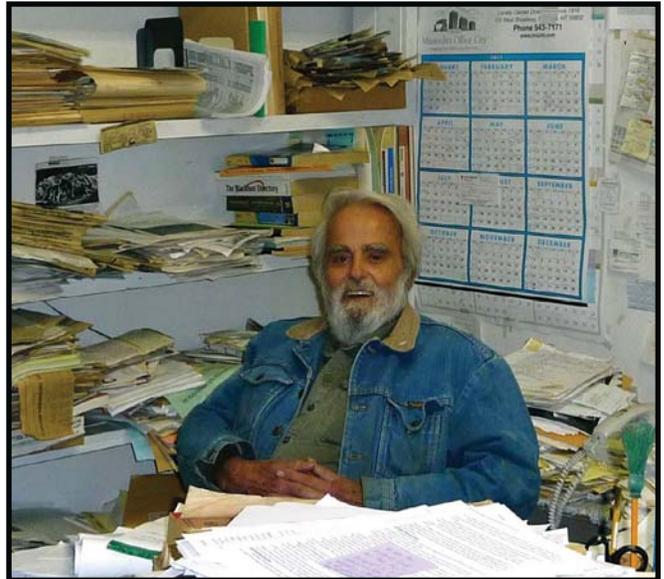
Dad came into this world in Chicago, Illinois, into the poverty that characterized America during the Great Depression. He often retold the story of his mother, Ruby, bringing him home, a tiny premature baby weighing only 3 lbs, 2 oz., in a shoe box provided by the hospital. He joined his sister Theo and brother George, or Duke. Their father, George Jonkel, was a police officer for the Chicago PD. When Chuck was 2 years old, Ruby and the children left for their grandparents' farm, where the three of them swapped urban poverty for country poverty in rural Neillsville, Wisconsin.

Chuck worked hard throughout his childhood. He told stories of digging wells, harvesting grapes, and, once, building a fence with his brother Duke for payment of a jar of honey. . . Chuck, reminiscing on this time, wrote:

"I started out, looking up at monstrously large human beings, my mother, my Uncle George, my grandma and grandpa, and my vastly superior brother and sister, both older than me. Then there was Tizard, a cat about my size, and Molly, our ever-loving dog. In the woods were mice, squirrels, "chicken hawks," good animals and bad animals. According to my brother, we could all be killed during the night, if a continental glacier came, and I worried about the forest fires that could burn us all, just like that. Then my brother and I poached those animals good to eat, since we had no meat. We took squirrels, cottontails, blue jays, even woodchucks, and eventually whitetails, simply because we needed protein and had no money. I liked wildlife, but only as red meat. And as Thoreau said, 'the woodsman knows the forest, by cutting down the tree.' [So] I became a wildlife biologist."

In 1948, Chuck joined the U.S. Army and served as a supply sergeant while seeing action in the Korean War. . . After leaving the army in 1953, Chuck traveled to Montana to visit his brother Duke, who was enrolled at the University of Montana. Duke convinced Chuck to take advantage of the GI Bill and enroll in school himself. . . He eventually attained B.S. and M.S. degrees in wildlife biology in 1957 and 1959. It was in 1956 that Chuck met Joan Murphy, who was to become his wife of 58 years . . . Their son James was born in 1959 in Missoula where Chuck was a biologist for the Montana Fish, Wildlife and Parks working on black bears. Over the next 6 years, they shared time between their home in Whitefish and Vancouver, B.C., where Chuck was enrolled in the University of British Columbia Wildlife Biology Ph.D. program.

An opportunity to work for the Canadian Wildlife Service took the family next to Ottawa, Ontario. This is where I was born . . . Once there, Chuck began his groundbreaking work on polar bears in the Canadian Arctic . . . In 1974, the family chose to return to Montana where Chuck began his work with the Border Grizzly Project at the University of Montana. This was shortly after grizzlies were given protection under the Endangered Species Act . . . In 1977, Chuck founded the International Wildlife Film Festival, which as we all know, continues to this day to promote awareness of wildlife through excellence in



Chuck Jonkel in his office at the Great Bear Foundation.

film . . . In 1981, Chuck and others founded the Great Bear Foundation, dedicated to protecting grizzly, black and polar bears across North America . . .

Chuck could connect with all people: freshly arrived UM students, with a drive to learn and make a difference; ranchers, farmers and hunters who are the conservationists of Montana's resources; children who helped make plaster casts of grizzly prints; First Nation peoples who further inspired his love of land . . . these are but a few of the people that Chuck met, taught, learned from, respected and enfolded into his world . . .

So I remind you: a tribute to Chuck's memory should come through your actions and your promise to make this world a better place. Go outside. Be good to the Earth. Respect animals. Treat each other with dignity, but fight with all you've got if the cause is good . . ."

For now, we all say farewell to this magnificent person, some of whose ashes will be spread in a polar bear den on James Bay Island.



## IBA Grants Program News

### Experience and Exchange Grants 2017: First Call for Proposals Due November 30

Could you benefit from some cross-project field experience? Do you want to: broaden your perspective on bear management and conservation in other places? Gain specific technical skills through hands-on training by visiting another field project? Initiate a collaboration between projects? Bring an outside expert to your research area for input and advice? If so, consider applying for an IBA Experience and Exchange Grant.

This grants program is designed expressly to help fund travel for cross-project experiences. Grants provide up to \$1500 per proposal. Applicants must demonstrate that the exchange is collaborative, with benefit to both host and visiting biologists. Hosts should show efforts to keep costs low by providing, where possible, living arrangements, local transportation, and/or food. Visiting biologists provide labor, training, collaborative planning, and/or expertise in return.

Extend your horizons and experience bears in a different part of the world!

Proposals are due November 30, with grants awarded by March 1. Priority goes to proposals for work exchanges lasting several weeks to several months in which tangible benefits are identified for both host and visitor.

For more information and instructions to apply, go to the IBA website at: <http://www.bearbiology.com/index.php?id=eeg01>.



### Research and Conservation Grants Awarded for 2016

Gordon Warburton, Research Grants Committee  
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The Research and Conservation Grants Committee (RCGC) is pleased to announce the awarding of \$76,000 to 11 exciting research projects on bears around the world with awards ranging from \$3,808 to \$9,924 per project. The approved projects include important research on 5 species of bears (Brown, Andean, Asiatic, Sun and Sloth Bears) in 9 countries. The RCGC received 25 proposals requesting a total of \$186,082 for various research and conservation projects.

Here is a sample of all the projects we were able to fund this year. Shyamala Ratnayake will assess the influence of landscape characteristics on population genetic structure of sun bears in Malaysia as part of a 2 year project. The committee granted funding to 3 studies on the Andean Bear; Dana Morin (population density and connectivity), Sam Steyaert (marking behavior), and Maria Viteri (genetics). Yeshey Wangdi will receive funding to study the distribution and relative abundance of Himalayan black bears and Sloth Bears in the Southern Trans-boundary Region of Bhutan. Several studies of bear-human conflict/coexistence were also funded for 2016. These included funding to l'Orso Salviamo for consolidating the Genzana Bear Smart Community (Italy), Muhammad Waseem to study mitigating human-bear conflict through development of joint rapid response mechanism in Mansehra District, Pakistan, Patel Nandita for an assessment of human-bear interactions in Gujarat, India, and Francesc Girò who will develop a mediation project in order to improve the acceptance and cohabitation of brown bears and humans in the Pyrenees. Anne Loosen received funding to look at grizzly and black bear habitat use in

# IBA Grants Program News

a multi-use landscape in Alberta, Canada, and Liya Pokrovskaya will examine conservation and behavioral ecology of the Kamchatka brown bear in Russia. So, you can see that the RGC was able to fund a diversity of bear projects on different bear species all across the world!

The total of \$76,000 awarded to the grant recipients was made available by the BCF, which included \$12,500 from the Homer Fund (limited to proposals eligible for the Homer Fund), \$2,000 from an anonymous donor (\$ 1,000 of which targeted to Andean bears, and \$1,000 to SE Asian bears), and \$500 from the Little Rock Zoo (targeted to Sun bears).

The RCG committee is very grateful to the 25 investigators who sent proposals for consideration this past year and urges bear researchers and biologists to submit worthy projects for next year!

The Bear Conservation Fund (BCF) is a program of the International Association for Bear Research and Management (IBA), created to manage funds for IBA's grants programs. Donations to the BCF come from annual charitable distributions of the John Sheldon Bevins Memorial Foundation and the Homer Bear Conservation Fund, an IBA donor-advised endowment, as well as from generous individual donors and zoos. The Bear Conservation Fund was initiated in 2004 to expand a 12-year conservation grants program funded by the Bevins Foundation. Now, each year the BCF brings in approximately \$80,000 that supports 6-10 Research & Conservation grants, 1-4 Experience and Exchange Grants, several Conference Travel Grants, and a small grant to the Action Fund of the IUCN Bear Specialist Group.



## 2017 IBA Research and Grants Application Now Available Deadline December 1, 2016

The Research and Grant Committee announces that applications for the 2017 field season are due by December 1, 2016, to RCG Chairperson Dr. Paolo Ciucci. The application can be found on the IBA website, <http://www.bearbiology.com/> under "IBA Grants Program" – "Research and Conservation Grants" – "RCG Application Process".

Over the many years of the grants program, IBA has been able to fund many important research and conservation efforts that have made big differences for bears all across the world. IBA supports well-designed projects, either research or conservation-oriented. Research should ultimately support conservation efforts; conservation projects should be strongly based on good science and also well-linked to local and regional communities. Anyone may apply, including undergraduate, graduate, or post-doctoral students; researchers; educational institutions; conservation organizations; and government agencies. Applicants must become IBA members before they begin the application process.

We encourage those involved in bear research or conservation around the world to begin work developing solid proposals for funding important work on bears. If you have questions about the IBA grants process, please contact any of the members of the RGC (also on the website).



## Leaving a Legacy to Help the Bears

By Patti Sowka

Five years ago, my mother, the person who meant the most to me in the world, was diagnosed with terminal cancer and given at most a year to live.

Fortunately the prognosis was wrong and we were blessed with almost 4 years with my mom. She handled the chemo pretty well and we got to do some things together and I will cherish those 4 years for the rest of my life. But we did take the doctor's advice and get her affairs in order without much delay. Thankfully my mom was a very organized and together person and all we had to do is update the will that she and my dad had already put together. But while we were doing that, I realized that life can throw you a curve ball at any time and I didn't want to get caught without a will. After all...I was about to turn 50!

It's easy to forget about things like wills when you aren't married or don't have children. But I realized that if something happened to me and I was unfortunate enough to be killed in an auto accident, a horse mishap or God forbid, by a terminal illness, I wanted to make sure that the assets I had worked hard to acquire over the years, and the ones I will inherit from my parents when they pass on, will not end up passing to the State! I want to make sure that they go to family members and to organizations that work hard for the causes that I feel passionately about. I want my assets to go to people and organizations that work to make the world a better place – organizations like the IBA.

I'm sharing my story to hopefully plant some seeds out there. Those of you who have already done wills, please consider including a bequest to the IBA in your will if you update it. Those of you who haven't yet done your will or think you don't

need to do a will because you don't have any heirs, please think about whether you want your retirement accounts, real estate holdings, etc. going to the State that you live in when you pass. Wouldn't you rather they pass to an organization like the IBA that can really use the funds and put them to good use working to help bears? Join me in leaving a legacy gift to the Bear Conservation Fund.

If you are interested in including the IBA in your will and would like assistance with this, please contact Julia Bevins, at [BCF@bearbiology.com](mailto:BCF@bearbiology.com). It can be as simple as the following: I hereby give, devise and bequeath \_\_\_% of my total estate, determined as of the date of my death, (alternatively, " \_\_\_dollars") to the International Association for Bear Research and Management, a non-profit organization, Federal Tax ID # 94-3102570.



## Conservation

### Eminent Pakistani Conservationist Awarded the Prestigious Whitley Award 2016 – The Green Oscar – Prize Awarded for Conservation of Endangered Snow Leopards in the Mountains of Northern Pakistan.



London- UK, Islamabad-Pakistan:

HRH The Princess Royal presented a Whitley Award, a prestigious international nature conservation prize to Dr. Muhammad Ali Nawaz, at a ceremony on April 27, 2016 at the Royal Geographical Society, London, attended by over 550 guests including Sir David Attenborough. Ali, an educationist, researcher and conservationist from Pakistan, has been honoured for his efforts to protect the endangered snow leopard in the mountains of northern Pakistan.

Based at the Quaid-i-Azam University, Ali has established snow leopard program in Pakistan, which is a unique research and conservation initiative in the country. The snow leopard program is a partnership initiative between the Snow Leopard Foundation, Federal Ministry of Climate Change, provincial Wildlife Departments, and local communities. Snow leopards are considered critically endangered in Pakistan where Ali is working in the Himalaya-Karakoram-Pamir-Hindukush mountain complex to conserve the species. Threatened by poaching, habitat degradation and subsequent decline of natural prey, snow leopards are sometimes killed by herders in retaliation to livestock predation. This loss to herders' livelihoods can be the equivalent of a month's salary, but through scientific research and introduction of innovative measures that buffer against livestock losses and increase tolerance, Ali is reducing human-wildlife conflict. Besides this, the snow leopard program has generated unprecedented scientific information on the unique ecosystem of this mountain complex, through state of the art research tools. The program is nurturing young ecologists to build country's capacity in field research and prepare next-generation conservationists.

With his Whitley Award Ali will bring together people, NGOs and government in a unified effort to develop a multi-stakeholder strategy for 25,000 km<sup>2</sup> of this mountainous habitat. This will be Pakistan's first landscape-level strategy for snow leopard conservation and will be used as a model to guide future conservation planning in the country. The project will train 50 wildlife managers, whilst engaging with 6,000 herders to enable the co-existence of communities and carnivores. Ali's work represents one of the first steps towards the Global Snow Leopard and Ecosystem Protection Programme's (GSLEP) goal to secure 23 important snow leopard habitats by 2020.



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## Sloth Bear Rediscovered in Shuklaphanta Wildlife Reserve, Nepal

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Historically, sloth bears were distributed from Sri Lanka and the southern tip of India northward to the Terai and Siwaliks of Nepal, and extending eastward from there through the Duars of Bhutan (Garshelis et al. 2008, 2015). In the 1990s this species existed at high density in the Chitwan-Parsa complex (consisting of Chitwan National Park and Parsa Wildlife Reserve) and low density in Bardia National Park, but extirpated from Koshi Tappu Wildlife Reserve and Shuklaphanta Wildlife Reserve (SWR) (Garshelis et al. 1999). Since then the sloth bear has not been recorded in SWR despite continuous and extensive research on tigers and prey base monitoring throughout the 2000s. We present here the first evidence of sloth bear presence in SWR, which occurred during the National Tiger Survey in 2013 (Dhakal et al. 2014).

### Methods

Camera trapping was conducted in the entire 305-km<sup>2</sup> area of SWR, located in the southwest corner of Nepal (28.7193 to 29.0515°N; 80.0609 to 80.4120°E). SWR is part of the trans-boundary Terai Arc Landscape (Wikramanayake et al. 2004). A total 88 survey grid cells of 2 × 2 km were superimposed in SWR, and grouped in 2 blocks, which were sampled separately during 10 February — 15 March 2013. In each grid cell a pair of camera traps (Reconyx 500, Reconyx 550, or Bushnell Trophy Cam HD) was installed facing each other at 45—60 cm aboveground. The camera trap location within a grid cell was selected (generally trail or streambed frequently used by tiger) following an extensive survey of tiger signs. Camera traps were checked every morning to observe the capture of tiger and other species during the previous night. Cameras were left for 15 days in each grid cell, yielding 1320 nights of trapping effort (see detailed methodology in Dhakal et al. 2014).

### Results

We found 3 photographs of a single individual sloth bear captured in a camera trap (Bushnell Trophy Cam HD) on 8 March 2013 at 02:26 AM. The camera trap location (28.89171°N, 80.31134°E) lies in grid 87 at an altitude of 196 msl. This is in the fringe area of the park, in Sal (*Shorea robusta*) forest along the north-south forest road (fire line) to Jonapur security post of SWR. The terrain there is undulating. No tigers were photographed at this location. In addition to this camera trap record of a sloth bear, we also found the scat and footprint of a sloth bear the next year (25 February 2014) at the edge of Sal forest and grassland in grid cell 57 (28.86946°N, 80.25438°E), about 6 km from the camera trap that photographed the bear.

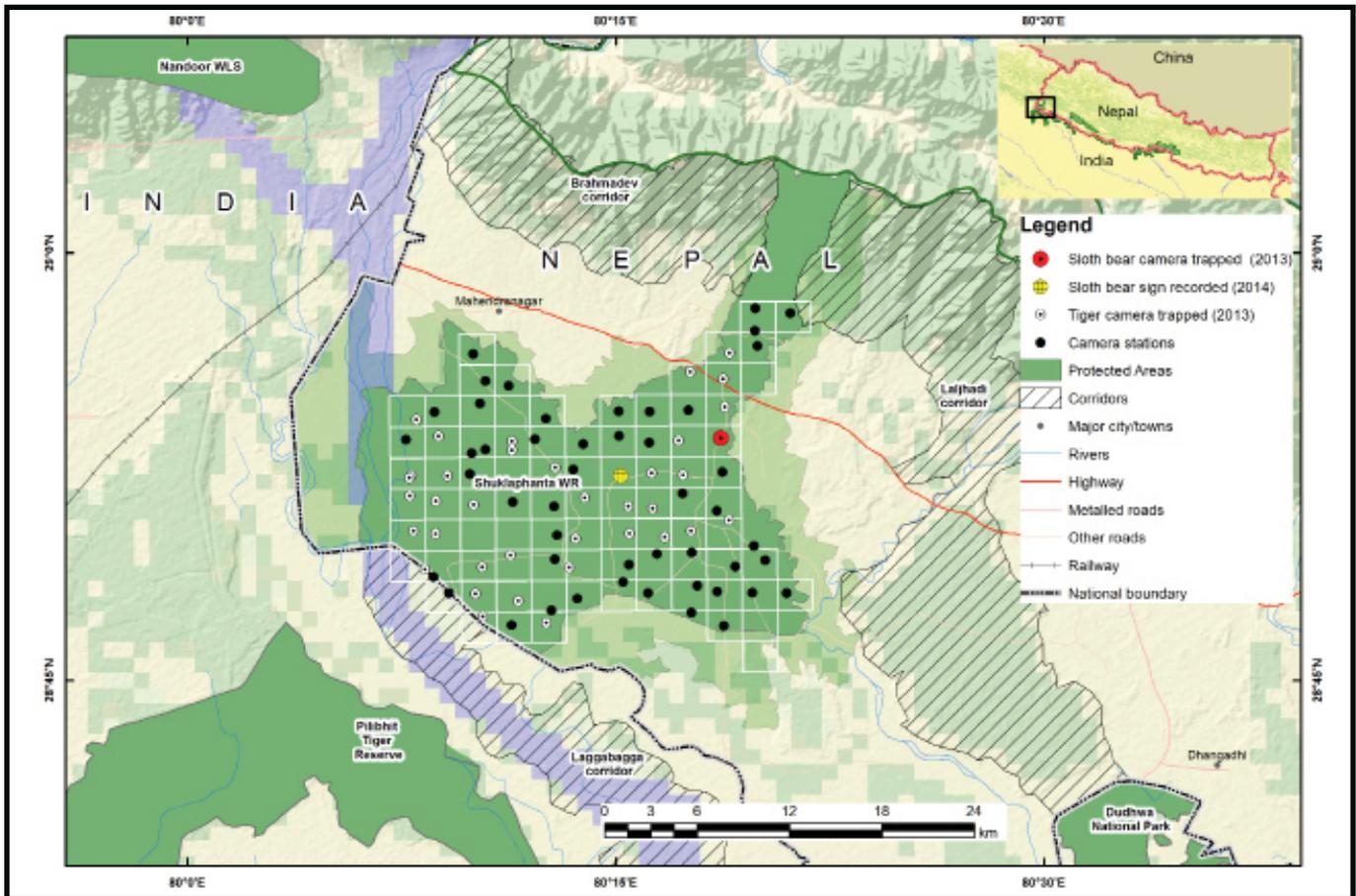
### Discussion

Sloth bears disappeared from SWR during the 1980s, possibly due to poaching (Garshelis et al. 1999). Habitat of SWR (including grasslands and Sal forest) is very similar to other terai protected areas where sloth bears are thriving. Frequent observation of termite mounds (personal observations), the major food source of sloth bears, suggests that SWR should be able to support sloth bears.

Based on the location of the camera-trapped bear, we assume that it came through the protected Laljhadi corridor all the way



First camera-trap photo of a sloth bear in Shuklaphanta Wildlife Reserve, Nepal (March 2013).



Survey grid (2 x 2 km), camera trap locations, and locations where sloth bears and tigers were recorded in Shuklaphanta Wildlife Reserve, southwestern Nepal (2013).

from Dudhwa National Park (DNP) or the Laggabagga corridor from Pilibhit Tiger Reserve (PTR), India. Both DNP and PTR have good populations of sloth bears (Mudit Gupta, WWF India, personal communication). Why it has taken 3 decades for a sloth bear to find its way into SWR is a mystery.

This reappearance of sloth bear in SWR opens up a new possibility to bring back the sloth bear population in SWR. However, only a single individual was photographed (2013) and a single occurrence of sign found (2014), and no observations of sloth bear made since then. Supplementation or re-introduction of the sloth bear in SWR should be initiated by government and conservation partners to re-establish a population in this area.

## Acknowledgements

The National Tiger 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 WWF Nepal. We would like to acknowledge all team members involved in this national effort.

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# Human-Bear Conflicts

## Increasing Fatal Brown Bear Attacks on Humans in Russia

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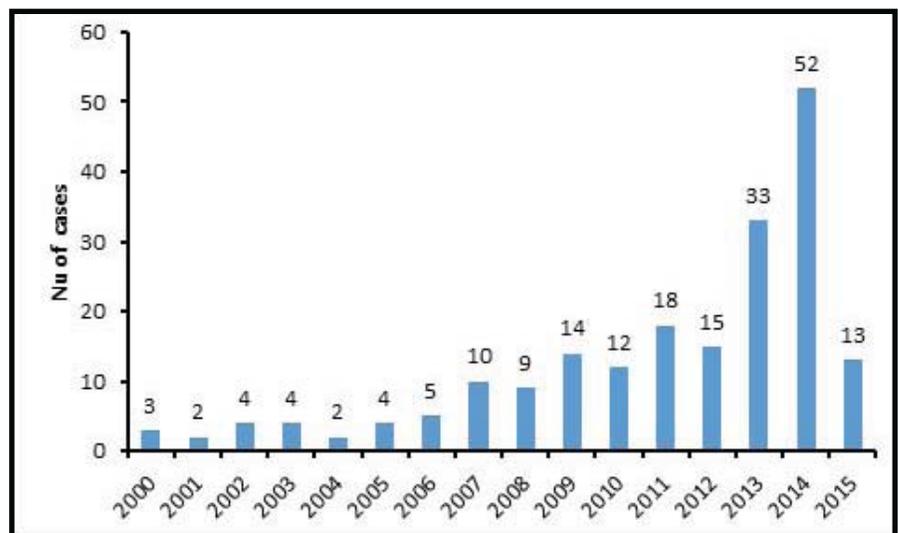
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Recently, Penteriani et al. (2016) described the striking increase in large carnivore attacks on humans in developed countries of North America and Europe during 1955–2014. Here we focus on brown bear attacks. We collected information on brown bear attacks on humans in Russia during 1984–2015 and compared these situations with 40 fatal brown bear attacks described in North America during 1980–2015 ([https://en.wikipedia.org/wiki/List\\_of\\_fatal\\_bear\\_attacks\\_in\\_North\\_America](https://en.wikipedia.org/wiki/List_of_fatal_bear_attacks_in_North_America)).

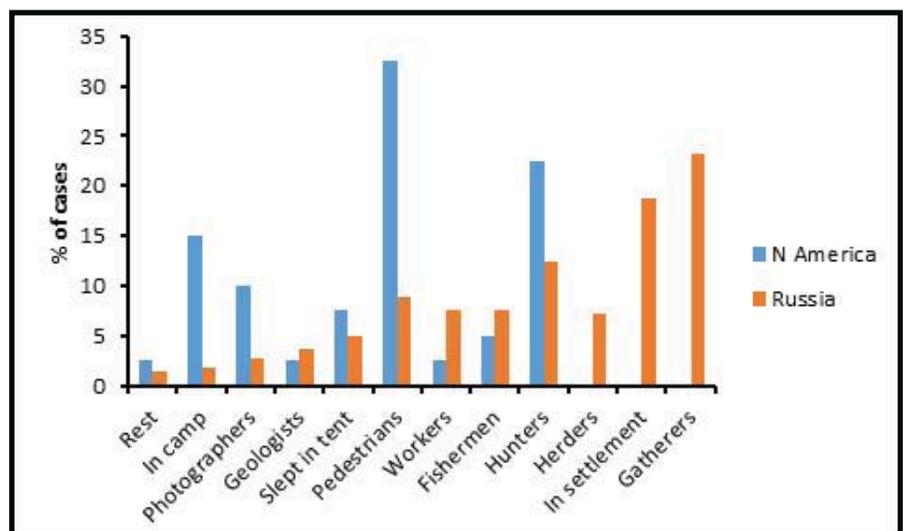
We observed a dramatically rising number of fatal attacks by brown bears on humans during 2000–2015. This did not seem to be associated with any obvious change in the habits of Russian people. Local people suggest that food shortages (e.g., berries and salmon) in the 2000s triggered more aggressiveness in bears.

Penteriani et al. (2016) identified 5 main human behaviors that were associated with half of carnivore attacks: unattended children, walking an unleashed dog, searching for a wounded large carnivore during hunting, engaging in outdoor activities at twilight/night, and approaching a female with young. Two of these corresponded with our records of bear attacks: people encountering female bears with cubs, and hunters pursuing wounded bears.

A comparison with the North American data revealed major differences in situations that resulted in fatal bear attacks. We found 15 human fatalities associated with females with cubs and 8 with hunter-wounded bears from a total of 280 during 1984–2015. Walking with unleashed dogs is usual in Russia. In some cases, the dogs saved their masters by barking and biting the bears, thus diverting them. Well-known Siberian Laika dogs are brave and aggressive enough to attack bears. In 5 of 9 cases when people have been with dogs during a bear attack, the dogs saved their masters. However, in 2 occasions the dogs attracted the bears and became a cause of their master's death. In Sakhalin



Increasing brown bear fatal attacks on humans in Russia during the past 15 years.



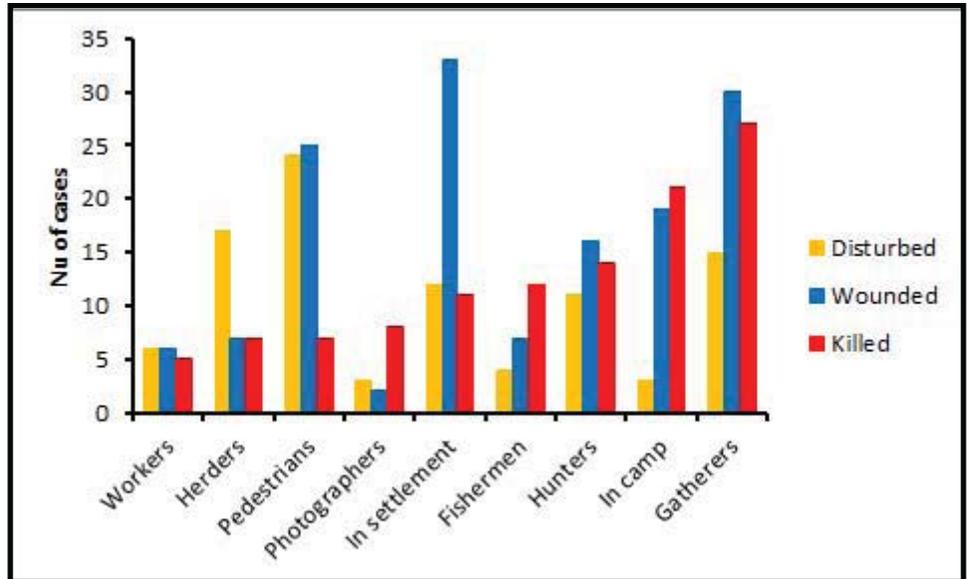
Situations associated with fatal brown bear attacks on humans in North America versus Russia.

# Human-Bear Conflicts

Island, 5 workers were sitting in an open shelter, observing and videotaping their dog aggravating a cub. Its mother attacked the humans, killing 3 and wounding 2. The workers shot video of their last minutes of life (<https://youtu.be/Q5Vx-b6-2Uo>).

Collectors of berries, mushrooms, and ferns have sometimes become subjects of brown bear attacks. These activities are extremely popular in Russia, being a significant part of subsistence economy. In addition, in 37 cases, brown bears have visited Russian villages and even mid-sized cities and attacked and killed humans on the streets. Attacks in human settlements have occurred mainly at night, when fewer people were out.

A particularly notable observation is that a high proportion of the brown bear attacks in Russia result in human deaths. Gatherers of plant resources and inhabitants of camps die or are wounded most often. Herders (mostly reindeer herders) often escape bear attacks by being vigilant.



Results of bear attacks on people in different situations in Russia.

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## First Record of *Baylisascaris transfuga* (Nematoda: Ascarididea) in an Andean Bear (*Tremarctos ornatus*) in Ecuador

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There are few reports of parasites in Andean bears (Goldstein 1989; Wolff 1989; Schaul 2006; Castellanos 2010, 2014; Figueroa 2015). In general, these reports are obtained with samples identified by eggs or cysts, a method which often generates partial or unreliable identifications.

*Baylisascaris transfuga* is an ascaroid that parasitizes all 8 species of bears (Rogers and Rogers 1976, Schaul 2006, Testini et al 2011). This paper reports the first discovery of the parasite in Ecuador, found in faeces of a wild Andean bear.

In September 2015, in the paramo of the Cayambe Coca National Park, Ecuador, at an altitude of 3,800 m, a reintroduced female Andean bear was attacked and partially eaten by a large male bear. Along with the remains, bulky faeces of the perpetrator were found (Castellanos 2016). In 1 of these, 3 nematodes were encountered. The specimens were collected, fixed and stored in 75% alcohol, and later stained in lactophenol. Three immature females of the genus *Baylisascaris* (Sprent 1968) were identified. As demonstrated by the morphology of the lips and the cut made in one of them at the height of the cephalic wing and by the morphometry it was possible to identify the species as *Baylisascaris transfuga* (Rudolphi 1819). Rudolphi originally described the species as a parasite of polar bears (Rudolphi 1819), but it seems to be a common parasite in all species of bears, although molecular markers might prove it to be a species complex. The specimens were deposited in the collection of the Ecuadorian Museum of Natural Sciences in Quito, Ecuador.

In Ecuador, Luzuriaga (2014) reported *Ascaris* eggs in faeces of wild Andean bear, however we believe that the identified parasite could be a species *Baylisascaris sp.*, probably *B. transfuga*.

The species is highly infectious as up to 50-100% of bears have been shown to harbor this parasite (Sprent 1968). Indeed, it is particularly difficult, if not impossible, to eliminate infective stages from the enclosure environment of captive bears. Heavy infestations can cause illness or death in bears. Thus, without frequent diagnostic and therapeutic interventions Baylisascaridosis will often affect bears kept in captivity (Testini et al. 2011).

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## Photographic Monitoring of the Western Hudson Bay Polar Bear Population



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The goal of our research project was to further develop and use cameras and photography analysis methods to noninvasively collect body measurements from free-ranging wildlife. These methods could then be used to evaluate and monitor wild bear populations including polar bears. We focused our efforts on the most southerly subpopulation of Western Hudson Bay. Because of early break-up and late sea ice formation in Hudson Bay over the last 30 years, polar bears in this subpopulation have less time to hunt seals. This results in lower fat stores available for use during the ice-free period in summer. Declines in skull and body size, survival, abundance, and cub recruitment have been observed in several polar bear subpopulations during the last 10 years apparently related to declines in sea ice.

In 2012-2014, we photographed bears from Tundra Buggies<sup>®</sup> using 2D Nikon DSLR cameras and a laser rangefinder. In 2015, we developed a 3D camera system using two Nikon DSLR cameras synced to capture a photograph at the same time. Both methods use similar triangulation calculations to estimate the distance to the photographed object. In the 2D system, distance to the bear, the focal length of the lens, and sensor size are used to develop a scale for the photo. With the 3D system, size calculations incorporate the location of each camera relative to the other, the focal length, and the disparity between the locations of the same points on two different images.

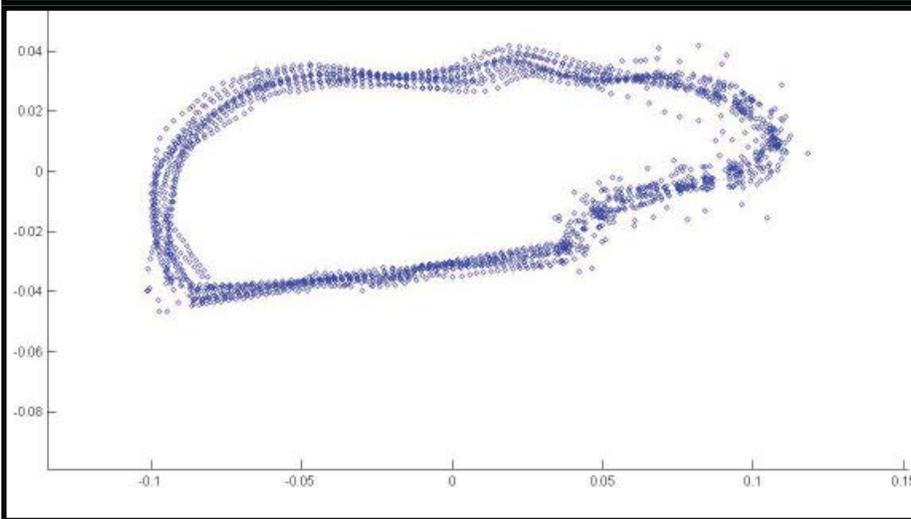
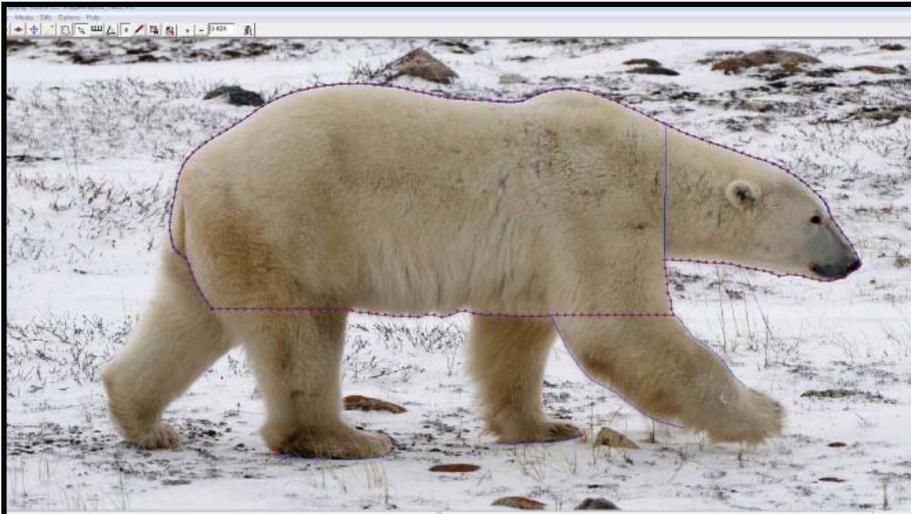
With the funding we received from the International Bear Association (IBA), we conducted fieldwork near Churchill, Manitoba in fall 2015 in collaboration with Polar Bears International (PBI), Frontiers North Adventures, the University of Wyoming, and Dartmouth College. In total, we spent 25 days in Churchill and 16 days on a Buggy and collected 4,896 photos using stereoscopy of at least 15-20 different bears. During 2015, we also began visiting and collaborating with scientists in zoos and research facilities to photograph and collect physical body measurements of captive bears to calibrate photographic measurements. To date, 7 zoos as well as the Washington State Universities Bear Research, Education, and Conservation Center have collaborated with us to collect both photos and physical body measurements of bears for use in calibrating the photographic data to body size.

Using geometric morphometrics (Webster and Sheets 2010) and measurements of Euclidian distances among pixels in the photo (Wang et al. 2005), we identified a suite of landmarks on the body of a 2D photographed polar bear to estimate various body measurements. Image analysis involves a multivariate statistical approach that incorporates the placement of over 400 landmarks and 50 measurements using both scaling techniques and ratios. We are currently analyzing the 3D photographs using Matrix Laboratory (MATLAB, Natick, MA) and AgiSoft Photoscan Software (AgiSoft LLC, St. Petersburg,



(left) The 3D camera system that uses two DSLR cameras to photograph in stereoscopy. (right) The 3D triangulation (location of each camera, focal length of lens, and disparity between locations of point on the two images) methods for determining size of bears.

# Biological Research



(above) The photographs of wild and captive bears are analyzed using TPS and IMP landmark-based geometric morphometric shape analysis software. (below) An example of contours from multiple placements of landmarks (blue symbols) and the average contour (dotted black line) aligned and analyzed using IMP.



An example of a set of photos from the DSLR stereoscopy set-up that are processed using 3D software. This male polar bear was photographed in late October 2015 consuming a seal near Churchill (Note: Proper viewing of this image requires 3D glasses).

Russia).

Our initial results show that while many body features are highly correlated, some measurements, such as facial features, are not, and we are working to use these uncorrelated measurements to develop the necessary ratios to measure bears in photos lacking the associated distance measurements or data for measuring scale.

Using this measurement method that incorporates ratios to determine scale, we are developing a standard protocol based on consistent measurements to evaluate historic photographs. PBI maintains a library of photographs from Churchill ranging across the last 30 years that will be used in the analysis to evaluate changes in body size and condition over the three decades that coincide with the observed decline of sea ice in Hudson Bay.

We also worked with the Director of the International Center for Biometric Research at Purdue University to explore the possibility of using facial recognition software to identify individual bears. Unfortunately existing software was ineffective for individual identification, but with advances in facial recognition software for pets by Facebook and other social media companies, we anticipate that such software will be adapted to wildlife field studies in the near future.

Finally, the motivation for this research began as an idea to develop a citizen science project for tourists visiting Churchill. Tourists could help collect photographs of bears that scientists would use to monitor this population. The measurement methods we are developing will be used by Dr. Steven Amstrup and PBI along with a website that will allow tourists/citizen scientists to upload their photos from Churchill and both score their photos for body condition and collect body measurements.

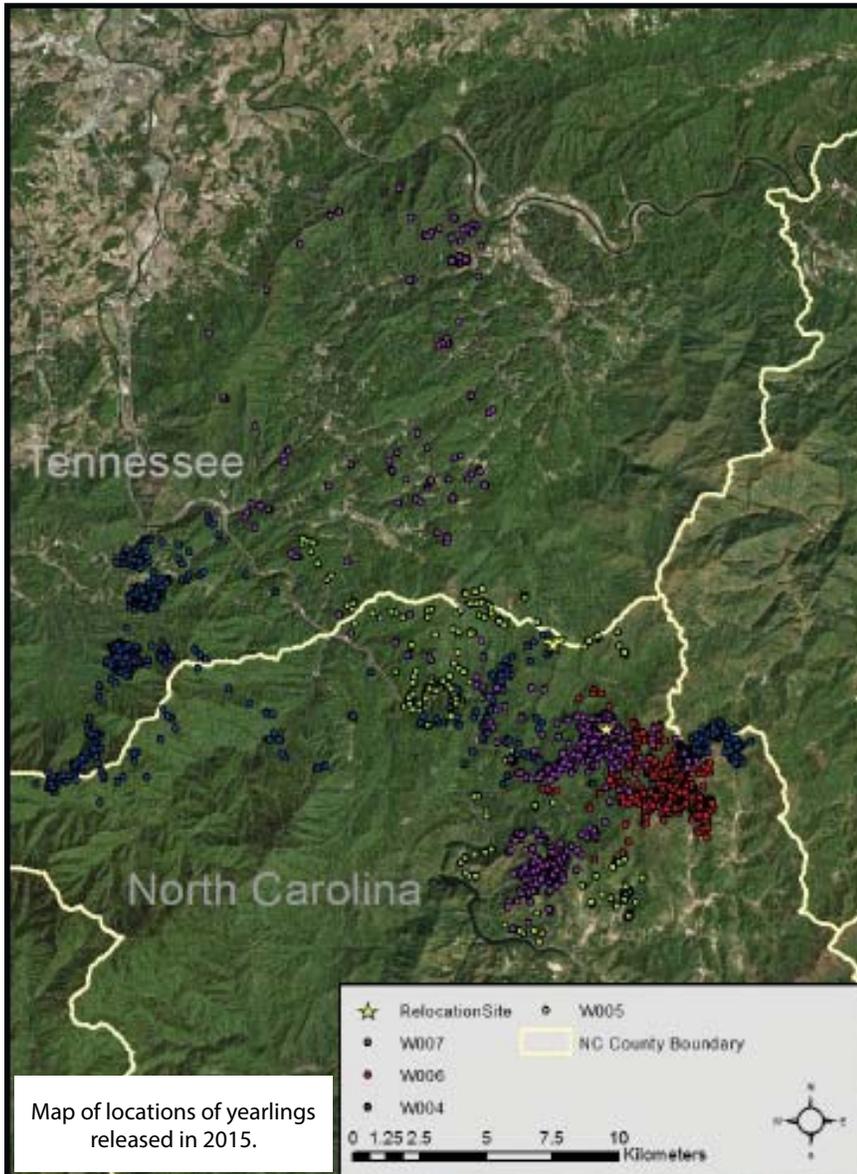


## Rehabilitating Orphaned Black Bear Cubs: North Carolina's Program and Efforts to Determine Fates of Rehabilitated Bears

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Since 1976, the North Carolina Wildlife Resources Commission (NCWRC) has received approximately 171 orphaned black bear cubs, and has rehabilitated and released 114 back into the wild through our agency's cub rehabilitation program. In the early stages of the program (1970s–1980s), cubs were released in an effort to supplement population numbers, as the agency's goal was to increase and restore the bear population. While black bears in North Carolina have been restored to a sustainable population, the rehabilitation of orphaned cubs has continued due to the public's expectation for how this public trust resource should be managed.



The NCWRC receives orphaned cubs-of-the-year from a variety of circumstances, with the majority arriving April–June. If the cubs are not weaned or are in poor condition, they are placed with a licensed private rehabilitator (20+ years of experience with bears) or the North Carolina Zoo. Rehabilitators provide the necessary care with limited to no human interaction until bears are about 7–8 months old; and then released into a 0.92 ha wooded enclosure that is owned and managed by the NCWRC. By taking over the direct care of the orphaned cubs, our agency is able to maintain oversight of the program, which better assures that bears are rehabilitated and released in excellent condition and are not habituated.

The current enclosure uses naturally-occurring hardwood forest for habitat structure, and has a chain link fencing with a 90-degree overhang at the top and an electric wire. In addition to the natural foods provided by the habitat, the bears are provided with high protein dog food through automatic tripod feeders. The bears overwinter in this enclosure, which may help to remove any habituated behavior that may have occurred during the preliminary rehabilitation process. Rehabilitated bears are released as yearlings in late May and June; the period of time when natural family break-up occurs and early summer foods are emerging. In addition, the yearlings are large enough (>100 lbs.) to easily wear a GPS collar. Bears are released in the region (Mountains, Piedmont, Coastal Plain) where they were

# Biological Research



(left) NCWRC staff carrying transport cage containing a yearling bear out of the enclosure.  
 (right) Yearling black bear peering out of transport cage after recovering from immobilization.

NCWRC

originally found, at sites that are reasonably far from human development and on state-managed lands.

In December 2012, the NCWRC's Black Bear Committee, comprised of agency biologists and chaired by the statewide black bear biologist, recommended that the fates of rehabilitated black bears be determined in order to assess the rehabilitation program and determine if any changes needed to be made. Our agency was also getting questions from NCWRC staff and the public, who wondered if rehabilitated bears were more likely to become "nuisance" bears. Until recently, we were unable to monitor the fates of rehabilitated bears due to lack of funding, limitations in tracking technology, and restrictive access to highly-controlled immobilization drugs (e.g., Ketamine). However, revenue generated through the Federal Aid in Wildlife Restoration Act has increased, providing the necessary funding to purchase tracking collars. In addition, GPS collars now exist that can be placed on yearling black bears because of their light weight and remote-release mechanisms (e.g., radio and timer controlled drop off). Lastly, we have access to BAM™, an anesthesia combination of Butorphanol, Azaaperone, and Medetomidine that has a low DEA classification—making it more easily accessible—and can be quickly reversed.

Starting in 2015, we began collaring yearlings prior to release using Vectronics GPS collars with a remote-release mechanism. To reduce the chance of injury during capture, yearlings are trapped in culvert traps that are placed inside the wooded enclosure, rather than free-range darted. They are chemically immobilized with BAM™ (1cc per 100 lbs.). In 2015 and 2016, mean induction time was 13.9 minutes (n=7; SE=3.5, range: 6–33) and mean recovery time was 19.1 minutes (n=10; SE=3.5, range: 8–48). Standard sampling procedures are used to collect age, blood samples for health analyses, and genetic data. Yearlings are identified with markers (ear tag, pit tag, tattoo) and morphological measurements are recorded. Mean weight at collaring was 62.4 kg (n=7; SE=3.9, range: 51.7–81.2) and 47.4 kg (n=5, SE=1.9, range: 41.3–52.2) for males and females, respectively.

Since July 2015, 12 bears have been collared and released, including 10 in the Mountain region and 2 in the Coastal Plain region. GPS locations are collected every 2 hours until the collar is recovered either from drop-off, mortality, or remote release. Since yearling and subadult black bears are known for their rapid growth rates, our policy is to remotely release the collars a year after release to prevent collars from becoming in-grown. While results are preliminary and the bears are still relatively young, we have not received reports that any of the released rehabilitated bears have caused conflicts with people. After the release of 4 yearling bears in 2015, the average daily movement was 2.32 km/day (n=4, SE=0.22, range: 1.88–2.93) within the first 4 weeks. During this period, all 4 bears left the state managed lands where they were released and only one bear returned. The maximum straight-line distance from release site during these 4 weeks was 17.1 km. Of the 4 bears released in 2015, one was legally harvested, one slipped its collar, one was found dead from starvation related to an esophageal blockage, and the other is alive and will have the collar remotely dropped ~12 months after release. The 8 bears released in 2016 were all still alive and sending data as of the writing of this article, just under 4 weeks after their release.

The geospatial data collected will be used to evaluate post-release movements, mortality factors, survivorship, and the influence of environmental factors (e.g., release site) on results. We plan on comparing our results with those from other studies examining the fates of rehabilitated orphaned cubs, and using the information to determine if any changes need to be made to our cub rehabilitation program. In order to have sufficient sample sizes from our 3 bear management regions (Mountains, Piedmont, Coastal Plain), we plan to continue placing GPS tracking collars on rehabilitated bears over the next several years. Through collaboration with other researchers, combined with our data, we hope to gain better insight on the fate of rehabilitated bears that will help our agency, and hopefully others, in making management decisions based on sound science.



## Florida Postpones Further Black Bear Hunts

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After a 2 decade hiatus, Florida held its first hunting season for the Florida black bear (*Ursus americanus floridanus*) in 2015. However, due to the controversial nature of the issue, the Florida Fish and Wildlife Conservation Commission (FWC) voted to postpone bear hunting in Florida at their June 2016 meeting. Those opposed to the hunt contend, among other things, that hunting bears is barbaric, there are not sufficient data to appropriately manage the hunt, and that hunting will negatively impact bear subpopulations.

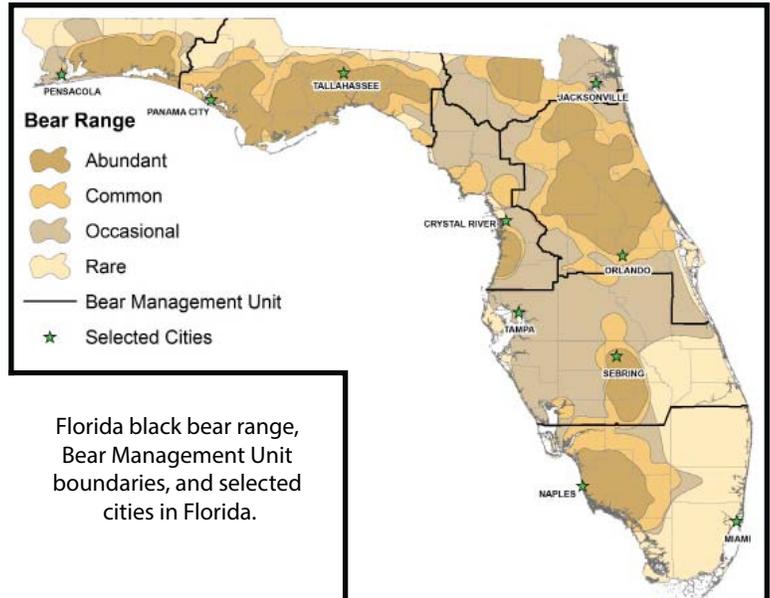
The FWC approved a Florida Black Bear Management Plan in 2012, which set up 7 Bear Management Units (BMU) across the state. Black bears in Florida have rebounded from historic lows of an estimated 300 to 500 bears in the late 1970s to more than 4,000 bears estimated today. This rebound has included substantial range expansion, from a low of bears inhabiting 18% of their historic range in the 1970s to occupying 45% of their historic range today. Bears now wander almost anywhere in Florida (including major metropolitan areas such as Orlando and Miami) and are common to abundant in roughly 16 million acres of core range.

As the bear population has grown, so have human-bear conflicts. Vehicle collisions with bears have steadily increased from 33 bears in 1990 to more than 240 bears over each of the past 3 years. Likewise, bear-related calls from the public have increased from 99 calls in 1990 to more than 6,000 calls over each of the past 3 years. Serious conflicts continue to increase, with bears attacking and killing pets and livestock, entering homes and garages, and directly injuring people. To date, 15 people have been injured by bears with several recent unprovoked incidents that resulted in serious injuries.

The objective of reinstating hunting is to begin managing bear populations in Florida with the intent to slow their growth and eventually stabilize them. This effort is part of an overall comprehensive management approach that includes outreach, education, habitat conservation, research, and human-bear conflict abatement. Under this approach, hunting is intended to provide recreational use of the resource and complement other management actions with a focus on reducing human-bear conflicts.

As part of implementing the Bear Management Plan, the FWC held a bear hunting season last year in 4 BMUs with large, growing bear subpopulations. FWC sold 3,776 permits for the 7-day hunt scheduled for October 24 to 30, 2015. During the first day of the hunt, harvest objectives were met in 2 of the 4 BMUs. While the harvest objectives were not met in the remaining 2 BMUs, the total number of bears harvested was approaching the statewide harvest objective of 320 after day 2 of the hunt. The FWC therefore decided to close the rest of the bear hunting season (October 26 to 30). The total harvest for the 2015 bear hunting season was 304 bears (126 males: 178 females).

After receiving extensive input from the general public and stakeholders on the 2015 bear hunt, FWC staff offered 4 options for Commissioners to consider at their June 2016 meeting on how to best move forward with managing Florida's bear population. The 4 options included: 1) hold a bear hunt with the identical framework from 2015 but with updated harvest objectives, 2) hold an even more conservative bear hunt in 2016, including reducing the area open to hunting, prohibiting taking a bear with any other bear present, further restricting hunting near game feeding stations, limiting the number of permits by location and timeframe, requiring hunters to tag bears immediately upon recovery, and limiting the number of hunters in each BMU, 3) postpone any bear hunt in 2016, but the Commission could consider a 2017 bear hunt, or 4) repeal bear hunt rules and not allow bear hunting in Florida in future years.



# Manager's Corner

At the June 2016 meeting, the Commission voted for option 3, to postpone bear hunting in Florida in 2016. Although the framework for bear hunting in Florida remains in place, there will be a zero hunt objective set for 2016, and the Commission could consider future bear hunting in 2017. Not holding a 2016 bear hunt will give FWC more time to work with stakeholders, local communities and the public to better convey the important role hunting plays in Florida's comprehensive bear management program.

Nick Wiley, FWC executive director said, "Although hunting has been demonstrated to be a valuable tool to control bear populations across the country, it is just one part of FWC's comprehensive bear management program. I am proud of our staff who used the latest, cutting-edge, peer-reviewed science to develop a recommendation for our Commissioners to consider. Our agency will continue to work with Floridians, the scientific community and local governments as our focus remains balancing the needs of Florida's growing bear population with what's best for families in our state. I would like to thank all 7 of our Commissioners for their leadership on this important issue."

FWC will continue to work with local communities and the public to advance innovative ways to reduce human-bear conflicts with the understanding that a bear hunt in 2017 could be considered as an important conservation activity to control Florida's growing bear population. This will allow time for staff and Commissioners to address reducing conflict bear issues and to further evaluate population data to ensure any future hunts are focused where needed.



# Manager's Corner

## 20 Years Studying Nevada Black Bears

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The Nevada Department of Wildlife is now in its 20th year of studying the population of black bears that inhabit the western part of the state. This population has been expanding over the past 30 years, both numerically and geographically with individuals dispersing eastward, filling historic black bear range that has been fundamentally unoccupied since the early 1990s. How this expansion is affecting or being affected by other species is an important management question.

We have begun a new project investigating the interactions of these black bears and cougars at cougar kill sites. Unlike black bears, cougars are not thought to have been very prevalent or widespread in Nevada in the early to middle 1800s. It is believed that cougar populations profited from several landscape scale changes occurring about that time, including the introduction of domestic livestock, which altered the habitat across the state in a way that benefitted cougar prey species such as mule deer. This allowed cougar populations to increase in what was once black bear habitat, after black bears had been extirpated. During a multi-year study of western Nevada cougars beginning in 2008 Dr. Alyson Andreasen revealed that an inordinate amount of cougar kill sites were being taken over and/or scavenged by black bears. How these interactions are affecting cougar kill rates is just one question we hope to answer.

The new study is using Proximity collars from Vectronic Aerospace on cougars and black bears that will allow us to view these interactions in a high resolution GPS format. When two collared animals get within a pre-programmed distance to each other the GPS fix-rate increases substantially. Our goal right now is to saturate the study areas with deployed collars in hopes of increasing the frequency of recorded interactions. Working with Dr. Jon Beckmann of the Wildlife Conservation Society we have deployed 15 bear collars (10 in the last month) and five cougar collars. Beckmann will be working to deploy more cougar collars this fall.

In addition to the question regarding cougar kill-rates, we anticipate that under certain conditions these competitive interactions between black bears and mountain lions may have non-negligible effects on mountain lion predation behavior. The result being increased human-mountain lion conflicts and impacts on mule deer populations, while simultaneously facilitating recolonization of black bears into historic ranges. Further, while data suggest that a single predator in a single prey system is unlikely to cause a decline in ungulate prey populations, the addition of a second predator or prey species can substantially shift predator-prey dynamics. In addition to potential effects on prey populations and human-carnivore conflicts, food subsidies gained by the dominant carnivore (e.g., bears) usurped from subordinate species (e.g., mountain lion) are likely to increase lifetime reproductive success of dominant species, increase population viability, and ultimately aide in further population expansion into unoccupied ranges.



## REMINDER

### Bear Safety Agency Policies: A Request of Agency Managers

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In the last International Bear News I wrote an article titled BEAR SAFETY AGENCY POLICIES: A REQUEST OF AGENCY MANAGERS and posed a series of questions to bear management folks about the level of bear safety training provided/required by agencies and others for personnel involved in direct management activities (e.g., hazing, capture, release, lethal removal). I also included a couple of questions about firearms safety and bear spray training. There has not been much response to that questionnaire so I would like to remind managers to take another look. You can of course include as much detail as you'd like, but even brief statements like "our department does not provide bear safety training," or "we are not allowed to carry firearms" would be useful. I will update readers with the results.



## Conference Announcements

### Advancing Bear Care 2016

The Bear Care Group would like to announce that REGISTRATION FOR Advancing Bear Care 2016 - OMAHA (October 6-9) is now open along with the Call for Papers and Posters. Please see our website at <http://www.bearcaregroup.org/> for more details, but a brief synopsis is below. Hotel links are also provided on the website, and our discounted group rate is valid for a few days before and after the conference, making travel plans easier for our delegates.

If you have any questions about the conference that are not answered on the website (look for the OMAHA 2016 tab), please contact either Jay ( [jayp@omahazoo.com](mailto:jayp@omahazoo.com) ) or Mindy ( [mindy.babitz@bearcaregroup.org](mailto:mindy.babitz@bearcaregroup.org) ).

Please also feel free to join our BCG listserv, and you can find us on Facebook to receive updates as we move towards the event. We look forward to seeing you in Omaha!



#### ABC 2016: A Step in the Right Direction

October 6-9, 2016

- Conference will be hosted by and held at the Omaha Henry Doorly Zoo & Aquarium
- Registration is now open. Event details are outlined on the website.
- Hotel link to the Doubletree Omaha Downtown is available on the website. Included in the excellent hotel rate for BCG delegates:
- Free WiFi at hotel
- Complimentary breakfast buffet (including special vegan options)
- Free parking available
- Shuttle available to and from airport, and to Old Market for exploring Omaha.
- Call for Papers and Posters relevant to our theme "A Step in the Right Direction". Details and contacts provided on the website.

# Conference Announcements

## 23rd Eastern Black Bear Workshop

The 23rd Eastern Black Bear Workshop (EBBW) will be hosted in April 2017 by the Pennsylvania Game Commission in the Laurel Highlands region of southwestern Pennsylvania. This area, situated atop the Allegheny Plateau, is home to approximately 1,300 black bear with several large public lands, a number of State Parks, and a variety of historic and cultural attractions. The website [www.laurelhighlands.org](http://www.laurelhighlands.org) provides a summary of things to see and do in the region.



Dates: April 24-27, 2017

Location: Antiochian Village Conference Center, 6 miles north of Ligonier, PA [www.antiochianvillage.org](http://www.antiochianvillage.org)

Lodging/meal package: includes 3 nights lodging and 9 meals beginning with dinner on Monday through bag lunch on Thursday	Single occupancy	\$404.49
	Double occupancy	\$316.20
	Triple occupancy	\$286.77

Registration fee:	Student	\$120
	Early	\$135
	Afer April 1, 2017	\$145

To select a lodging and meal package, please visit the Antiochian Conference Center website at <http://registration.antiochianvillage.org/2017EasternBlackBear>. To learn more about the meeting and submit payment for the registration fee, please visit the EBBW website [www.easternblackbearworkshop.org](http://www.easternblackbearworkshop.org)

Nearest airports: Arnold Palmer Regional Airport (LBE, 11 miles) at Latrobe, PA  
Pittsburgh International Airport (PIT, 69 miles) at Pittsburgh, PA

Limited airport transportation will be available for participants arriving on April 24 and departing on April 27. Availability and cost are detailed on the Antiochian Village website.

The 23rd EBBW will be a working session designed for biologists involved with black bear research and management. The agenda has not been finalized, but due to topics suggested at the end of the last Workshop, we plan to have sessions focused on human-bear conflict management, agency response and investigation of bear attacks, advancements in bear handling techniques, and disease in black bears.

A poster session also is planned. Poster abstracts showcasing recent work in black bear research will be accepted from July 1, 2016 through February 1, 2017. Details on poster guidelines and the required submission form are available at [www.easternblackbearworkshop.org](http://www.easternblackbearworkshop.org)

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## The 'New' Student Forum

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The IBA Student Forum was started in 2002 (as Student Affairs) by Diana Doan-Crider and several active IBA student members, in order to have a place that was devoted exclusively for students to present, discuss, and receive input about their project concerns (methods, techniques, get contacts, exchange of ideas, etc). This was followed up by the establishment of student listserv, Truman, and later, a companion Facebook group. Both continue to provide means for students involved in bear research around the world to communicate with each other and access materials and ideas. For many years, the Student Forum was also a recurring section in the newsletter (discontinued in 2012) in which Diana, and later Brian Scheick, wrote articles on student-related topics and highlighted individual student contributions to bear research and management.

Student events include sharing a meal with invited professionals and other students, along with discussions with professionals on various research topics. In 2007, the Student Forum held its first silent auction, now a regular and much-anticipated evening of fun at each conference. Proceeds from the auction provide the Student Forum with funds to pay for the student conference event/meal. Students active in the early forum are now IBA leaders, e.g. current Eurasian vice president, Andreas Zedrosser, and Ximena Velez-liendo, recently retired Council member. And at the Anchorage conference in June, Diana was awarded the IBA Distinguished Service Award, in part to recognize all the time and effort she contributed to student-related events and fundraisers as Student Affairs Coordinator. This will come as no surprise to those that know her, especially to the current and former students who benefited from her many years mentoring, encouraging and connecting students.

Last fall, several IBA student members and Diana proposed to IBA Council that the Student Forum, in its current form, be replaced by an official student council, with ex-officio representation on IBA Council. In May, Council extended an invitation to any student interested in serving as a student representative to attend the IBA Council meeting in Anchorage on June 12, immediately prior to the conference. On June 13, over 80 students enjoyed dinner at the Gumbo House where they mingled with IBA Council members and other professionals. The first meeting of the new Student Forum was held June 16 and students discussed its future format and activities.

The 'new' Student Forum will be a student council composed of active student members that will be elected to their positions. They will work to facilitate student member communication via the Truman listserv and Facebook page, attendance and educational experience at IBA conferences, additional experiences for student members (e.g. a mentorship program), and raise funds to support these efforts. This council will have two representatives that will be non-voting members of IBA Council. These two representatives will attend IBA Council meetings and IBA conferences, and liaise between the student council and the IBA council. One of these representatives, if possible, will be a student member from the host country of the next IBA conference and involved in conference organization. The student council format will be presented to IBA Council for approval and bylaws will be drafted. Elections will be held for positions on the Student Council, if possible coincident with IBA Council elections.

I was selected as interm student representative on IBA Council and Denisse Mateo is serving as the Ecuador liaison. I encourage all students to consider joining the IBA Student Council. Information on additional positions (eg. Communications, Treasurer, regional student ambassadors) will be distributed via this newsletter and Truman listserv/Facebook. If you are a student please sign up to be a member of the Truman listserv and/or a member of the Facebook group if you haven't already.

### 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

- Visit: <http://www.bearbiology.com/iba/stu.html>
- Follow the links to request an invitation

### Facebook Signup Instructions

- Visit: <https://facebook.com/groups/IBA.Conference/>



# Student Forum

## New Student at IBA

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Heading to the 2016 International Conference on Bear Research and Management, I didn't know what to expect. This would be my first time attending an IBA conference, and I was also going to present a poster. I knew only a few members, and very little about the IBA itself. But knowing that it was all about bears, I was excited. At first impression, I was blown away. I'm not exaggerating when I say that walking into the opening reception I got tears in my eyes when I saw the bear species banners hanging around the room. I love bears, and clearly I was in the right place. Then 2 of the few people I knew found me and I was immediately taken into the family. Because that's what the IBA is: a family. At the conference I heard both long-time members and recent members speak of it as such, and it's something even this newcomer noticed right away. Here I was, a first time attendee and student, intimidated by these people I admire who have been studying bears for longer than I have been alive, and they welcomed me with open arms in a way I have never experienced at a conference before.

The IBA family is one without borders and that impressed me to such an extent that when other students at my school have asked me how the conference was I tell them that at least 30 countries were represented. I loved the marquee sign at the entrance to the conference that showed the flags of every country present. Another highlight was attending the Bear Specialist Group meeting. I was in awe of the hard work of those IBA members fighting to protect bears around the world. From how I was welcomed, to the international nature of the conference, to the public talks, this was the most inclusive conference I have ever attended. And I left feeling more inspired than I have after any conference before. It was a beautiful conference, filled with beautiful people, and I cannot wait for next year!



## Publications

### Recent Bear Literature

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

- Fall Issue: 5 October: Marion Schneider: [mfschneider@gmx.de](mailto:mfschneider@gmx.de)
- Spring Issue: 5 February: Agnieszka Sergiel: [agasergiel@gmail.com](mailto:agasergiel@gmail.com)
- Summer Issue: 5 June: Agnes Pelletier: [asg.pelletier@gmail.com](mailto:asg.pelletier@gmail.com)

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>

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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.

Deadline for the Fall 2016 issue is 5 October 2016