



International Bear News

*Quarterly Newsletter of the
International Association for Bear Research and Management (IBA)
and IUCN/SSC Bear Specialist Group*

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Tracking the Status of Brown Bear Conservation in Greece, page 12

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Cover photo courtesy of Yorgos Mertzanis

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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 ibanews@bearbiology.com are preferred; otherwise, mail or fax to the address above. IBA reserves the right to accept, reject, and edit submissions.

Deadline for the February 2007 issue is January 5, 2007

Thank you to everyone who contributed to this issue. Artwork is copyrighted – do not reproduce without permission.

Membership

Use the form on page 31 to order or renew memberships, make donations, and/or update member information.

From the President

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First IBA conference in Asia

For the first time in its history, the IBA held one of its international conferences in Asia. I want to stress how important this is for the future of our association and, I hope, also for the future of bears. It is critical that the IBA works more closely with Asian institutions and experts, strengthening its membership in this region and using its network of experts and organizations to support the many conservation and research programs active in Asia.

Nearly 400 participants from over 40 countries made this, the 17th IBA Conference, the largest event completely dedicated to bears ever held in Asia. Asia is home to six of the world's eight bear species as well as a large number of the world's human population, creating a sometimes unique and always challenging situation for bear conservation.

The conference venue at the Hoshino Resort, in the beautiful resort town of Karuizawa, was spectacular. Thanks to the efforts of the organizers, Toshiki Aoi (Chair) and Koji Yamazaki (Secretary General), along with the support of Yoshikazu Sato, Junpei Tanaka, and their staff, the five-day event was extremely fruitful and pleasant. On behalf of the IBA, I want to express our sincere thanks to all these people for having made our five-day conference such a success.

Interest in the topic of our conference drew support from many Japanese agencies and organizations

including the Japanese Forestry Agency, Nagano Prefecture, Karuizawa township, the Mammalogical Society of Japan, the Japanese Society of Zoo and Wildlife Medicine, the Wildlife Conservation Society, NPO Picchio, the Japan Bear Network, the Brown Bear Society, WWF Japan, the 21st Century COE Program of Gifu University, Shiretoko Nature Foundation, the Japan Committee for IUCN, the Nature Conservation Society of Japan, and the Oze Preservation Foundation. The Hoshino Resort provided substantial support to the conference and provided a unique opportunity for participants to experience and gain valuable insight to Japanese culture, as well as experience Japan's wonderful natural environment.

The conference location in Karuizawa provided conference participants with access not only to the surrounding woods and wildlife, but it provided an interesting example of the challenges associated with human



IBA President opens the banquet with Japanese hosts



Piero Genovesi and Jon Swenson, current and former Eurasian Vice Presidents



Harry Reynolds speaks at a student session



IBA Council working session during traditional Japanese lunch

Photos by Piero Genovesi, Djuro Huber, and Diana Doan-Crider



Harry Reynolds giving student presentation award to Muhammad Ali from Pakistan



Mid-conference field trip



Jon Swenson helping to make the Japanese rice cake



"Wow! Who knew bears could fly!"



Bear-proof garbage bin



Student session

Photos by Piero Genovesi, Djuro Huber, and Diana Doan-Crider

and bear coexistence. Many Asiatic black bears live in close proximity to humans in this community, and local wildlife managers have subsequently developed an effective bear management program utilizing, among other things, bear aversion techniques, public awareness, and techniques to prevent habituation of bears.

The generous support of sponsors and the dedication of conference organizers made possible the attendance of many participants from countries in Asia with some of the most endangered bear populations in the world, such as Pakistan, Mongolia, Laos, and Cambodia. The presence of such a diversity of Asian bear experts resulted in many very interesting discussions of the different conservation priorities in this region of the world and of the various alternatives to bear management applied in the different countries. To capitalize on location as well as the diversity of expertise present, the conference hosted a session dedicated to "understanding Asian bears and their future". During this session, experts from all over Asia reported on the status of bear populations in their respective countries and on the challenges for future bear conservation. Additionally, several technical meetings held before and after the conference successfully strengthened the links between the

IBA and the IUCN Bear Specialist Group.

In his closing remarks, Harry Reynolds (IBA President), sent a sincere thank you out to the conference organizers and invited all conference participants to attend the 18th IBA Conference in Monterrey, Mexico, next year

Research and Conservation Grants

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Thank you to those who have sent in reports of work funded by IBA grants. I hope to be able to post some of the material on the IBA Website in the near future.

Some reminders:

- Be sure to check the Research and Conservation Grants (RSG) web pages frequently as we approach the time to submit proposals for Research and Conservation Grants. There are likely

to be some changes to forms or procedures.

- Remember to ask potential references whether or not they will be willing and able to provide reference information. Be sure to give them a copy of the proposal well in advance of the deadline. (See the RCG section in the last *International Bear News*.)

Note the comments below regarding **new format for the first page** of a proposal. Be sure to include:

1. Title of the project;
2. Name and contact information of person submitting the proposal;
3. Summary (300 words maximum) that includes the objectives, the study area, species of bear(s), and a brief statement as to why the work is needed.
4. Budget summary (total from all sources; amount requested from IBA in this proposal; amount of IBA money to be used for: salaries and wages, supplies and lab work, travel, equipment with a value over US\$500).

If you have questions after reviewing the information on the RCG pages of the IBA Website, please feel free to contact me.

Bear Specialist Group

Membership of the BSG vs. IBA

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The International Association
for Bear Research and Management

(IBA) and the IUCN Bear Specialist Group (BSG) have closely overlapping missions; however, their memberships differ greatly. Here are a few interesting facts in that regard.

- 75% of all IBA members are from the USA and Canada.
- 5 of the 8 species of bears do not occur in the USA or Canada.
- The number of IBA members from the state of Montana (USA) equals the number from all of Asia. The number from

Alaska (USA) exceeds that from Asia plus South America.

- All Red-listed species of bears occur in Asia and South America.
- 53% of Bear Specialist Group (BSG) members reside in Asia or South America.
- All BSG members from the USA and Canada have worked on bears outside these two countries.

Bear Specialist Group

- Nearly two-thirds of BSG members are not members of the IBA.

The biggest distinction between the two groups may be that the IBA is a more science-centered organization, hosting science-based conferences and publishing the scientific journal *Ursus*, whereas the BSG is more conservation-focused with much less emphasis in places where bears are relatively secure. However, the IBA has raised funds that have been used for BSG-affiliated conservation projects.

Among bear biologists, the IBA is far better known, with a history dating to 1968. Among conservationists, IUCN Specialist Groups are better known; however, the BSG in its present form is rather new, with the current membership developed only over the past two years.

Differences in the focus and development of these two organizations explain the differences in their memberships.

First, because IBA is a science-centered organization, its membership is drawn from students and professionals involved in bear research. Because such research generally requires a significant funding base as well as higher education, most bear biology is conducted in wealthier countries. Likewise, most active bear management occurs in wealthier countries where legal sport hunting for bears is popular. Hence, most bear biologists and managers are from these few wealthy countries.

Second, membership in the IBA costs US\$50 per year, although reduced-cost membership is also available for those unable to afford standard membership. IBA depends upon membership dues in order to produce *Ursus* and this newsletter, *International Bear News (IBN)*. Some biologists in less-affluent countries, especially in Asia and South America, who might like to be IBA members and thus receive *Ursus* and *IBN*, are probably deterred by the cost. Telling in this regard is that more than 60%

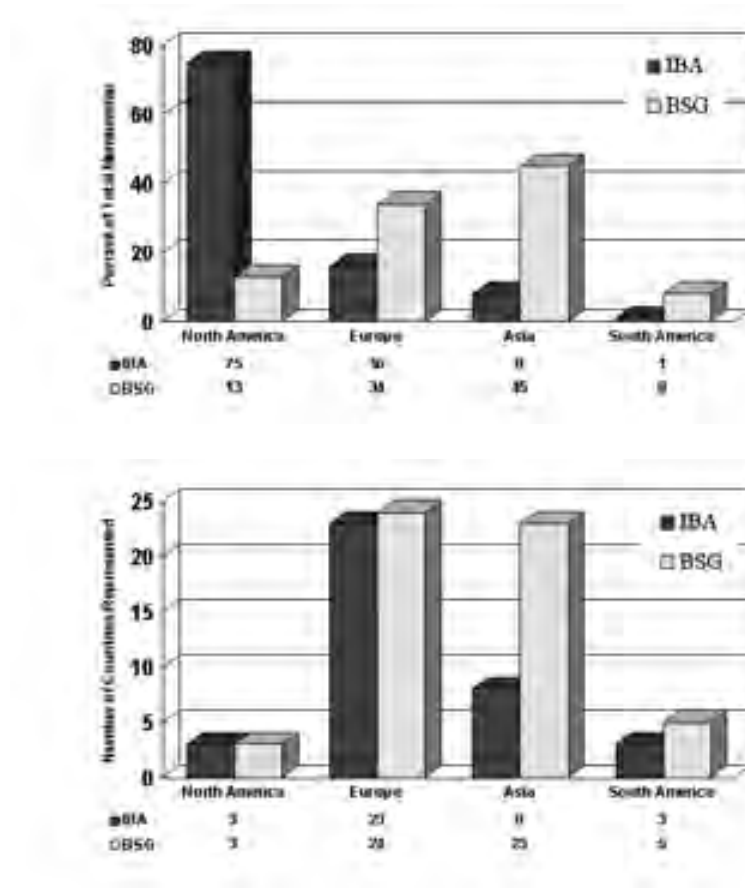


Figure 1. Comparison of membership of IBA and BSG.

BSG members were specifically chosen to conduct needed conservation work in Asia and South America. The BSG currently has 126 members, one-fourth that of the IBA (data excludes institutional IBA members such as libraries)

of the Asian IBA members are from Japan. In contrast, membership in the BSG is free, so cost is not an issue; however, this also means that the BSG has no operating funds of its own.

Third, BSG members are appointed. Thus, the number of members and the geographic representation of those members are controlled. An intentional effort was made to focus attention in parts of the world where bear conservation is more needed. Some biologists who might like to have been members of the BSG were not appointed because there was already adequate representation from their country. The BSG has developed "expert teams" that work toward

conservation of specific species or topics (see following article); although the BSG includes experts on North American bears (including Mexico), we have not established any North American teams, given the vast amount of work already being done on bears on that continent. Many North Americans are members of the Polar Bear Specialist Group, which is distinct from the BSG.

Finally, all BSG members are expected to actively participate on conservation initiatives. They may be called upon for opinions, for reviews of proposals, and to share data. An example is the current Asian bear mapping and range-wide priority set-

ting initiative. BSG members from all Asian countries were asked to provide detailed data from their region of expertise, requiring a substantial investment of time and effort. IBA membership does not require active participation.

The BSG currently has 126 members, one-fourth that of the IBA, yet this membership is spread across 55 countries, compared to only 39 for the IBA (Figure 1). A few countries inhabited by bears are still not represented within the BSG because we have yet to find people there with sufficient expertise. Notably, many BSG members are not bear experts per se, but are biologists or conservationists with an interest and knowledge of bears, living in a place where no true bear experts exist.

As longtime members of the IBA and recently appointed co-chairs of the BSG, we are hoping to strengthen ties between the IBA and BSG, while recognizing that there are distinct purposes for each. We see two avenues for improvement.

First, we hope that more BSG members will become IBA members, thus helping them to become better bear biologists. While *IBN* is available free online (www.bearbiology.org), access by many BSG members is hindered by slow internet connections. IBA and BSG are currently working to make changes that will ensure access to the newsletter for all BSG members in the near future. Meanwhile, the journal *Ursus* is only available to IBA members (or via library subscriptions to BioOne).

Second, we hope that more IBA members will consider working outside the USA, Canada, Japan, Scandinavia, and other areas where extensive bear research has already been conducted. Doing so may require one to volunteer time and even use personal funds. Such a commitment, however, can be very rewarding.

Bear Specialist Group

The Bear Specialist Group (BSG) is organized into species and topical Expert Teams, each with two co-chairs. These co-chairs, along with some other specialists, comprise the Coordinating Committee.

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The Future for Polar Bears in a Declining Sea Ice Environment: what do we know?

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During an April 22, 2006, interview on the CBC radio program "The House," Tim Flannery, author of the recent book "The Weathermakers," stated, "Projections of the polar bear specialists are that by about 2030, around that date, the species will be extinct because of global warming induced changes in the Arctic sea ice." That statement was followed on May 4th by quotations in the Toronto Globe and Mail from Dr. Mitch Taylor, a polar bear researcher in Nunavut, Canada, claiming, "polar bears have survived both warmer times and colder times than these," that "nothing has melted the Arctic sea ice for 30 million years," that "polar bears are remarkably adaptable," and that "a warming climate might even benefit polar bears."

Flannery, a well-known Australian ecologist and author, has written many books. Taylor has published numerous papers about polar bears. So, how is the IBA member, or the person on the street, to appreciate these very different views of the polar bears' current and future situation? Who is right? Here, I present a summary of relevant information and my interpretation of what it means for the future of polar bears

In June of 2005, the Polar Bear Specialist Group (PBSG) of the International Union for the Conser-

vation of Nature (IUCN) evaluated available data on status and trends in the world's polar bear populations. Of the 18 populations recognized worldwide (not including a hypothesized but unsubstantiated population in the central polar basin), the PBSG concluded that four populations were declining, one appeared to be declining but the decline was not statistically significant, and two were increasing. Five populations were classified as stable, and six could not be classified because of insufficient data. Data firmly linking population reduction to warming induced changes in sea ice were available only for the population of Western Hudson Bay (Stirling et al. 1999, Regehr et al. In Prep). Some observations consistent with climate-related nutritional stress have been reported elsewhere (Amstrup et al. 2006, Monnett and Gleason 2006), however, and other as yet unpublished but disconcerting observations were noted.

The PBSG concluded from reported observations, predictions of changes in the sea ice, information on contaminant burdens, and concerns about other perceived threats to their security, that the global population of polar bears was likely to decline by 30% or more in the next 35 to 50 years. The conclusion of the polar bear specialists was reflected in the recent decision by the IUCN to reclassify polar bears as "vulnerable," downgrading them from their former classification as a "species of less concern" (www.iucnredbook.org).

Polar bear specialists were concerned about the future welfare of polar bears; however, Tim Flannery overstated those concerns in suggesting that polar bears could be extinct by 2030. So, what about Dr. Taylor's statements?

Although polar bears are known from the fossil record only after the Last Interglacial period (LIG) 116,000 to 128,000 years before present, molecular genetics data suggest they may have become sea ice specialists and separated from parental brown bear

stocks between 200,000 to 250,000 years ago (Talbot and Shields 1996). If that early date is real, polar bears have indeed seen temperatures warmer and colder than those of today. During the LIG, summer temperatures in the far north were 4-10°C warmer than at present (Frenzel et al. 1992, CAPE Last Interglacial Project Members 2006). These warmer temperatures are documented in the distribution of fossil materials collected around the world (Brigham-Grette and Hopkins 1995, Muhs et al. 2001, Muhs et al. 2002). The much warmer temperatures of that time also are corroborated by a sea level which was 6-7 meters above that of current times (Muhs et al. 2003). Although Dr. Taylor suggested nothing has melted the sea ice for 30 million years, some evidence is consistent with ice free summers during at least a portion of the LIG (Brigham-Grette and Hopkins 1995, Brigham-Grette 2001). Summers also were 2-3°C warmer than present during the Holocene Thermal Maximum of 6,000 to 11,000 years ago (Kaufman et al. 2004). On the other hand, micro and macro fossils suggest summer temperatures 140,000 and 20,000 years ago may have been more than 10°C colder than present (Frenzel et al. 1992, Cuffey and Marshall 2000). Consistent with colder periods and southern extension of sea ice, polar bear fossils have been found in northern Europe (Kurtén 1964), far south of their current range. Many things could have been different in ancient times, and much of what the climate and sea ice were like then remains unknown. In addition to warmer and cooler times, we can only speculate on other circumstances that polar bears may have faced. Dr. Taylor was right, however; polar bears have survived at least one, and possibly two, periods warmer than now.

But whether the current warming is good for polar bears depends where you look and on your time-frame. Polar bears are entirely dependent upon the sea ice because it is only from that platform that they are able to harvest



the bounty from the sea. Polar bears have developed flexible strategies to survive on ice conditions which vary greatly across the Arctic (Amstrup 2003). Their current year-round distribution includes areas where sea ice is seasonal. There, polar bears are “stuck” on land and food deprived for extended periods each year. The population of western Hudson Bay is the best known example of this. Other polar bears live in some of the harshest and most northerly climates of the world where the sea is largely ice covered year-round.

It may not be surprising that the first population showing confirmed declines due to recently warmer temperatures is one which already was exposed to prolonged periods of food deprivation. Polar bears that spend part of the summer on land in four other areas also are enduring longer periods of food deprivation. Some of these already may be facing nutritional stresses (Stirling and Parkinson 2006). On the other hand, polar bears inhabiting the most northerly and

harshest portions of the species’ range may benefit from reductions of sea ice extent or thickness. Heavier than normal ice conditions in the Canadian Beaufort Sea during the mid 1970’s resulted in reductions in polar bear productivity that persisted in the cohort structure for many years (Stirling et al. 1977, Amstrup et al. 1986). This observation suggests bears living in areas where the ice is consistently heavy might regularly be on the edge of population maintenance, and they may indeed benefit from milder conditions.

Regardless of the fact that some populations may be stressed while others benefit when the climate starts to warm, continued warming can only reduce the area cover of sea ice (where polar bears can hunt for their food) and the amount of time polar bears have access to that ice. Temporal and spatial reductions in sea ice cover ultimately mean a reduced carrying capacity for polar bears.

Polar bears are not likely to compensate for loss of sea ice habitat by

shifting to a land-based life-style. Much of the terrestrial habitat adjacent to current polar bear ranges already is full of grizzly bears which are adapted to feeding on the available terrestrial foods and which would therefore be effective competitors. Even without competition, the low productivity of most arctic terrestrial habitats also would prevent current polar bear populations from making a go of it on land. Throughout their range, polar bears are as large as the largest of the brown bears (those which occur on Kodiak Island and the Alaska Peninsula). Polar bears have become so large because seals and other marine mammals, which they can catch at the sea ice surface, provide an incredibly rich food source. Abundant and rich food (salmon) also explains the large size of those Kodiak and Alaska Peninsula brown bears. Terrestrial foods to which land-locked bears may have access in the Arctic, however, will not support bears of this size. Recent studies of bear nutrition suggest that large bears simply cannot

Opinion

gather and process enough low quality food fast enough to maintain body condition (Welch et al. 1997, Rode et al. 2001, Robbins et al. 2004). These physiological studies are corroborated by the observation that arctic grizzly bears are the smallest and occur at the lowest densities of any of the brown bears (Miller et al. 1997). Places where marine mammals or other rich food sources are predictably accessible from shore may allow some polar bears to survive. Successfully fitting

numbers and distribution clearly will be much reduced from present. Short of that eventuality and in the short run, it seems likely that there will be gainers and losers among currently defined populations of polar bears. In regions where sea ice is already seasonally volatile, polar bears are likely to face nutritional problems early in the process of climate warming. In other areas, moderation of heavy sea ice conditions may benefit bears, at least in the near term. Continued

predicted warming so that managers can adapt their strategies to the potential needs of polar bears in the future.

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whole populations of very large polar bears into habitats that currently support only small numbers of small brown bears, however, just doesn't seem likely.

The Bottom Line

If summer sea ice were to disappear in a hundred years, as some predict it may (Overpeck et al. 2005), polar bear

warming, however, will likely elicit transitory effects where some populations move beyond benefitting from a warming climate to suffering from it. Current research is focused on understanding whether and how such hypothesized changes may occur. The fact that we don't know how polar bears survived warm periods in the past mandates that we try to understand how they respond to present and

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Is Dedication Alone Enough to Save Bears in Greece?

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If one were to attempt to evaluate the commitment of Greece towards the conservation of its most endangered terrestrial carnivore, the brown bear, this year's evaluation would have little reason to paint the countries efforts in brighter colors than it did last year. (See also Karamanlidis 2006.)

With little tangible progress in the effective operation of the protected areas of the country and the second phase of the "Egnatia" monitoring project still waiting to be initiated (for more details, see Mertzanis 2005), Greece has done fairly little in 2006 to safeguard the fate of the species. It seems as if the official state relies on the commitment (and logistics) of dedicated individuals and NGOs within the country to protect the species.

In fact, Arcturos and Callisto, two of Greece's leading NGOs have been very active over the past few months. Following a series of livestock depredation and crop damage incidents in northern Greece, experts from Arcturos met with local stakeholders in order to find ways to mitigate bear-human conflicts and promote adequate compensation schemes. Furthermore, in August, Arcturos recorded the death of a female cub due to a collision with a car. This is the seventh tragic incident of its kind in the last three years recorded by the NGO, and, in view of the increasing trend, Arcturos contacted regional and national administrative authori-

ties to post warning signs on roads frequented by the species.

The newly founded NGO Callisto (see Psaroudas et al. 2004) marked its 2006 summer activities with the organization of two volunteer programs in the Rodopi Mountains. This area is home to the small, eastern population nucleus of the country. Volunteers participated in the monitoring of large carnivores in the area and in the signing of forest trails. In addition, Callisto reported the reappearance of the species, after 65 years of absence, at the mountain of Oiti. This is one of the most southern appearances of the species on the European continent. At the same time, Callisto has also been very active in promoting its campaign towards a holistic approach to the protection of habitat of endangered and rare species of the country, such as the bear and the wolf. Within the framework of these activities, it has requested that the relevant ministry redesign and repeat conservation actions carried out in 2003-2004.

If the year 2005 was characterized as the year of mixed messages (Karamanlidis 2006), the total lack of initiatives for the protection of the species on behalf of the Greek

State in 2006 can be regarded only as sending out the wrong message. Despite the dedicated commitment of local NGOs, one might be tempted to ask whether dedication alone will be enough to ensure the future survival of the species in the country.

Acknowledgments

I would like to thank Vaso Petridou and Lazaros Georgiadis from Arcturos and Spyros Psaroudas from Callisto for bringing the press releases of their NGOs to my attention. Valuable information was provided also by their respective web sites: www.arcturos.gr, www.callisto.gr

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Eurasia

Brown Bear Status in Greece: 20 years of conservation efforts, 1985-2005

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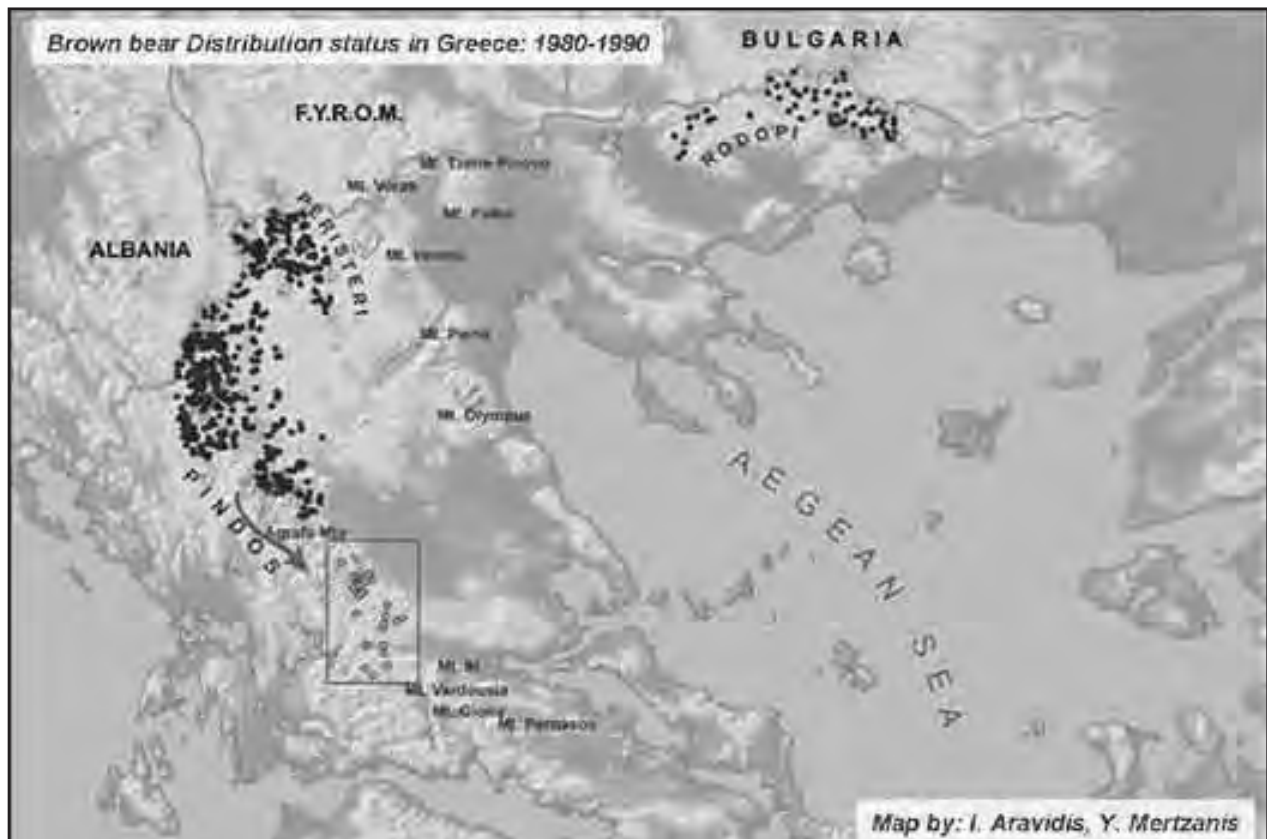
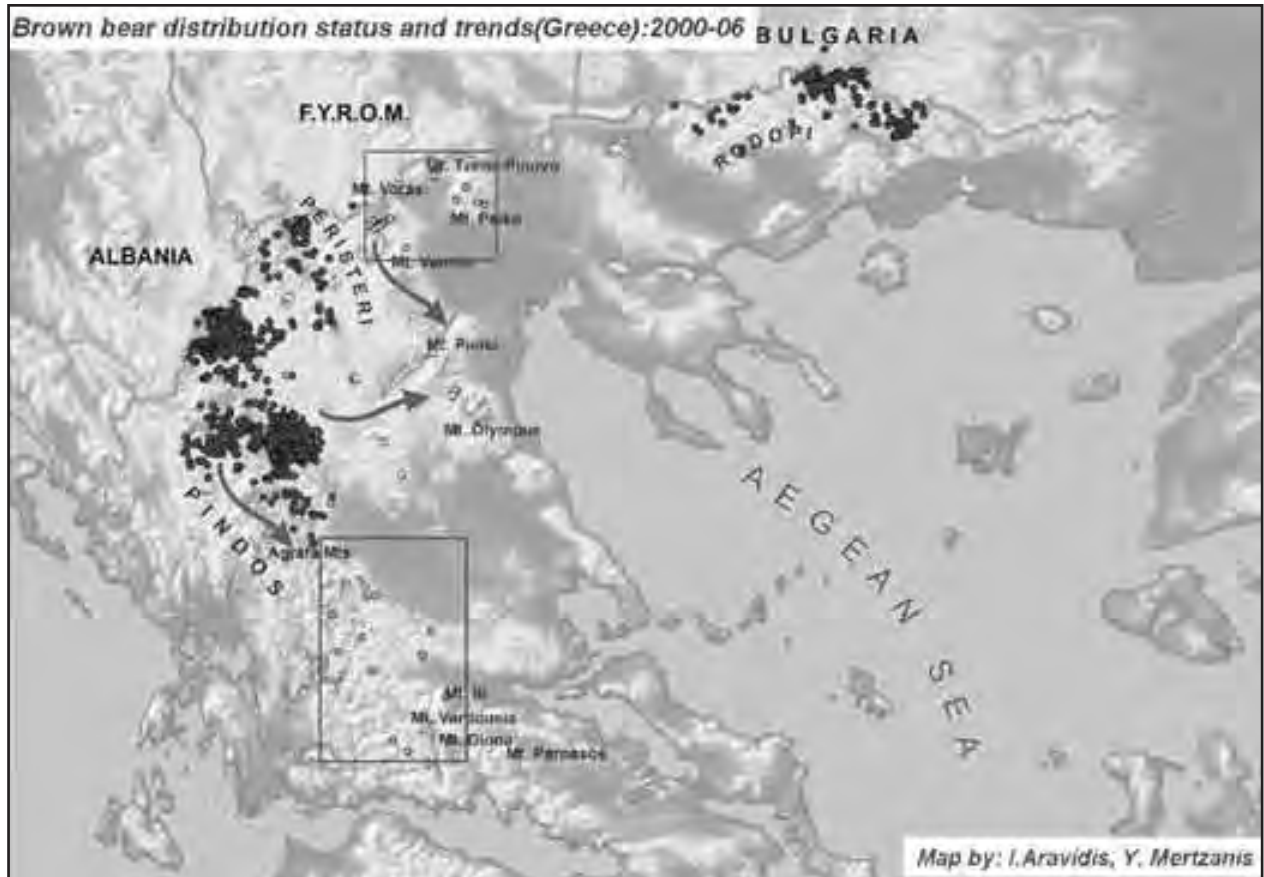
Remaining brown bear populations consist of two distinct populations

with core ranges located in the Pindos (6,200 km²) and Rhodopi Mountain areas (2,400 km²). The Pindos population is part of the larger Dinara-Pindos population ranging from Slovenia into Greece. This larger population is the largest trans-border bear population in South Eastern Europe. The Hellenic population constitutes the southernmost edge (below 39th parallel) of the brown bear range in Europe.

Prior to the early 1980's there had been little interest in the fate of the Hellenic brown bear population. However, since the early 1980's a small number of research programs combined with concerns of a few NGO's have managed to alert Greek

State authorities the precarious status of brown bear in Greece. As a result between 1987 and 1989 the first large scale national conservation initiative was co-financed by the EU (ACNAT). The initiative aimed to establish conservation actions which initially addressed problems related to bear-human conflict.

Three additional bear conservation projects were co-funded by the EU (under the LIFE Program) between 1994 and 2002; marking the most productive and successful period in brown bear conservation at the national level. Between 2002 and 2005 a pioneer monitoring project was implemented in northeast Pindos



area to evaluate the impact of highway construction on brown bear habitat and population connectivity. Each of these projects were triggered by NGO's and completed in cooperation with national authorities. Projects have consisted of systematic long term monitoring, identification of threats to bear populations and habitat, and public awareness and education campaigns.

Accomplishments of these projects include the drafting of a national "Action Plan for the Conservation and Management of brown bear in Greece," the designation of two core bear habitat areas totaling 3,500 km² as national parks, and the production of informational and educational materials on bear status and conservation. Additionally, new measures to minimize bear-human conflict such as greater control of vehicle traffic on forest roads, better delineation of protected areas, changes in forest management practices, habitat mitigation measures associated with construction of new highways, creation of a national system to compensate farmers for loss of livestock or crop damage from bears, and dissemination of improved bear conservation and educational materials have been officially incorporated in various national legislation.

Over the years there have been encouraging signs relating to the status of brown bear populations in Greece such as an increase in bear numbers from a minimum estimate of 80 bears in 1989 to a minimum estimate of 160 bears in 1999 and signs of range expansion and/or re-colonization of former ranges (e.g. populations in western Greece). Such positive signs are likely the result of the projects mentioned above and should encourage continuation of these efforts as well as provide hope to experts. and conservationists alike.

A key limitation factor in the long-term success of bear conservation efforts will always be the degree of engagement by Greek State authorities. In this regard three obstacles

must still be overcome: 1) a lack of skilled government personnel 2) continued political resistance and lack of political will and 3) a lack of funding. Funding is a particularly critical problem. The European Union has been the main source of funding for brown bear conservation in Greece for the last 15 years. However, as of 2006, limits on continued EU funding will require a greater amount of the funding for bear conservation work come from Greek authorities.

It will also be critical to improve government and non-government technical capacity in bear conservation and management by training more young scientists specializing in wildlife management. Furthermore, successful bear conservation will require greater cooperation between NGO's, local authorities, stake-holders and specific interest groups. Finally, a real need for improved public awareness and education on how to humans and bears can peacefully coexist must not be overlooked.

Gaining and Maintaining Public Acceptance of the Brown Bear in Croatia

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Croatia is a country of rich biodiversity, including large carnivores like brown bears (*Ursus arctos*). Conservation and long-term maintenance of

brown bear populations in Croatia is a primary goal of the government as is clearly stated in the "Brown bear management plan for the Republic of Croatia". Since August of 2006 I have been working with Djuro Huber from the Biology Department of the Veterinary Faculty of the University of Zagreb to help the Croatian government implement some of the key actions of the Croatian bear management plan. Two years of funding for our work has now been secured from the Dutch Ministry of Agriculture, Nature Conservation and Food Quality.

Often the most important bear management decisions are those that result in actions that can directly influence and regulate bear population sizes. Although Croatian bear populations have continued to grow since the 1950s and their conservation status is considered favourable, actual numbers are still not known with certainty. Current population estimates range between 600 and 1000 individuals. Bear population sizes should naturally stabilize at a habitats carrying capacity. However, since bear ranges in Croatia, as in most places, are also inhabited by humans, the habitats natural carrying capacity may be greater than the capacity that is acceptable to humans (i.e. a point that conflict with bears is perceived as unacceptably high). In Croatia bears are managed as a game animal and the management of hunted bear populations in the previous half century have led to growth of these populations from less than 100 bears to the current numbers.

The current Croatian bear management plan utilizes a quota system to regulate hunting of bears. However, current methods for setting the quota size are made without adequate scientifically based estimates of the current bear population and subsequently quotas continue to be a source of complaints from conservationists and hunters. Those that believe there are too many bears believe that the quota should be much higher while others

do not support any level of hunting quota, fearing that the population can not sustain any losses. Therefore, a better understanding of actual bear numbers is an absolute prerequisite to gain and maintain public support for bear conservation and management plans in Croatia.

The primary activity of our current research is to use genetic techniques to produce a scientifically sound estimate of the Croatian bear population. By using DNA extracted from bear scats, it will be possible to identify individual bears and utilize statistical procedures to estimate the population and build population viability models. We hope that this information will aid in better and scientifically informed implementation of the Croatian bear management plan. Traditionally bear managers have used counts of animals at feeding sites to estimate populations which suffer from many biases. Utilizing estimates from genetic techniques in combination with standardization of hunter's counts should allow for a better calibration of these traditional methods and thus a better understanding of population trends. Public acceptance and expectations will be surveyed by use of a comprehensive human dimension survey. The results of our work will then be discussed and implemented by existing Croatian bear and large carnivore expert teams. Final results will be presented to the wider public at a special workshop, as well as by means of popular leaflets and brochures. At the international level the project will help lead to better conservation of European brown bears as well as help Croatia to comply with international conventions (Bern, Habitat directive, CITES) and accession to European Union.

Human-Sloth Bear Conflict: a threat to sloth bear conservation

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The sloth bear is assumed by many to be a cute and playful animal.



However, it is not what it seems. It is highly unpredictable and a dangerous animal. Villagers in Chhattisgarh area of central India are very much aware of the potential threat posed by sloth bears when venturing into the forests to collect timber or other forest products, to graze their cattle, or simply to walk through to visit neighboring villages. To avoid sloth bear encounters and protect themselves from attack, locals will move in groups, carry an axe, bamboo stick, or torch, and talk or sing loudly. In spite of all this, many human-sloth bear encounters still occur in Chhattisgarh, resulting in injury and/or death of humans. In many cases, sloth bears are also killed in retaliation.

In one particularly terrible tragedy that occurred in the Chuabakra forest near the town of Marwahi in 1995, five people, including two women, were killed in a single day by a female bear. One pleasant morning in January, Ms. Susheela Bai was passing through the Chuabakra forest on her way to the village of Khurpa when she was suddenly attacked by an adult female bear. She was unable to fight off the attack and was killed. Shortly after her death, Mr. Ram Jiawan and Mr. Nan Sahay were passing through the forest when they were each

attacked and killed by the same bear in separate incidents. In a two-hour period, three people had been killed while others in the village were unaware of the events taking place in the forest. Later that morning, Mr. Lamchand was grazing his cattle in the same forest, and, as he crossed the spot of the previous attacks, the bear attacked. Fortunately, he was able to fight off the attack. Hearing Mr. Lamchand's screams, Ms. Shiyam Kunwar, also traveling through the Chuabakra forest from Dharhar, moved toward the screams to investigate. The bear had already badly injured Mr. Lamchand, and, when she arrived at the site of the attack, the bear turned and attacked her, killing her instantly. Villagers, finally hearing the screams,



rushed to the site. Upon their arrival on the scene, the bear moved off, and the villagers were able to rescue Mr. Lamchand. He was rushed to a hospital in the village of Marwahi but, due to the severity of his injuries, was moved to a better-equipped hospital in Bilaspur. Information of the bear attack had by then been passed on to the Forest Department, and the local magistrate, along with some policemen, had arrived at the location of the attacks. Villagers from surrounding areas were advised to stay out of the area to avoid further incidents. The range officer of Marwahi, along with some forest guards, arrived the next day to deal with the bear. They dispatched the bear before it could attack and kill again. It was very sad to see this animal killed, especially in its natural forest habitat. Although many debate who was at fault, the bear or humans, we must not forget that it is humans who have encroached on the forests. Sadly, Mr. Lamchand's injuries were too severe, and he died while in hospital.

In another incident, during the month of June 2000, cattle were grazing in the forests adjacent to the village of Barbasan. At approximately 11 a.m., a man named Rampal was watching over his cattle when one of his buffalo was suddenly attacked by a female bear. The bear knocked the

buffalo over by hitting the body of the buffalo with its forelimbs and head. Once on the ground the bear ripped flesh from the body of the buffalo. Seeing the bear attacking his buffalo, Mr. Rampal began to shout loudly. The bear continued its attack, and

Rampal rushed to the village for help. Once Rampal and the other villagers returned, they found that the bear had killed and eaten a portion of the buffalo. They tried to drive the bear away without success, so they notified the Forest Department. Forest Department officials arrived, but when they attempted to drive the bear off, they were chased and nearly attacked themselves. They avoided injury by hiding behind their motorcycles. Police from the town of Gaurela were also called, but the bear had retreated into the cover of the forest before they reached the site. Due to its aggressive behavior, villagers were on high alert. Elders of the village and Forest Department officials planned to push the bear further into the forest in an attempt to avoid further problems. When villagers, police, and forest officials entered the forest to chase the bear off, they discovered a dead adult female bear. She may have been mating with another bear previously reported to be in the area when she was disturbed by the presence of the grazing buffalo. Those on the scene deduced that the bear may have died as a result of consuming buffalo meat and the stress of human presence. Sloth bears in this area are essentially frugivorous, and consuming the meat may have disturbed the bears' physiology and this, in combination with the

stress, may have caused the death of the animal.

These incidents suggest that female sloth bears have very aggressive temperaments and get excited easily when disturbed. Females become very aggressive, especially when they have cubs. Bears moving into villages in search of food are a very common phenomenon, and people often chase them off to protect their crops. Once pursued by humans, a sloth bear may retaliate in future encounters with humans, with fatal consequences. Movement of bears outside protected areas of Chhattisgarh is very common because the forests are unable to provide enough food for the bears due to habitat fragmentation and degradation. A current study on human-sloth bear conflict, being conducted by the Wildlife Institute of India in Marwahi forest, revealed a 40% fall in the sloth bear population over the last six years. This is a very serious issue as far as conservation of sloth bear is concerned. The Institute has recommended that the State Forest Depart-



ment initiate programs to educate villagers on bear biology, movement, food, and behavior. It is also necessary to restore degraded forest habitat by, for example, planting fruiting trees for bears. Unfortunately, the Forest Department has yet to take necessary actions to launch community education or habitat restoration programs. Subsequently, there is an urgent need to take concrete actions for the conservation of sloth bears in the unprotected areas in Chhattisgarh. Otherwise, it will be too late to act.

Asiatic Black Bears in Northeastern China

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The Xiao Xing'anling, Wanda, Changbai, and Laojunling Mountain ranges are among the most important areas of distribution for Asiatic black bears in northeastern China. As human populations have increased, habitat for black bears has steadily declined. Adding to this, high intensity logging and collection of secondary (non-timber) forest products has reduced the ability of these habitats to provide bear food plants which in turn limits rates of reproduction and population increase. In addition, poaching for gall and paws is still present, and is a serious problem in some areas. These factors are all pertinent to the question of whether black bears will continue to persist in this area.

If we wish to conserve Asiatic black bears in China, we need to strengthen basic scientific research. Although bear research in North America, Europe and Japan has attained an

advanced level, this research base has limits in its applicability to the conservation situation in northeastern China due to cultural, economic, administrative, and political differences. With assistance from the Japanese Black Bear Research Institute, I captured, radio-collared, and studied three bears in the Xiao Xing'anling Mountains during 2004-05. This information was summarized in my poster presentation at the 17th IBA conference in Japan. Funding for this study is no longer available, and all radio-collars have now ceased functioning, so we have no way to continue our research and thus deepen our understanding.

We wish to establish a research base to focus on research and conservation strategies for Asiatic black bears in northeastern China. We invite all who wish to cooperate in this endeavor to participate. Please contact me if you are interested in helping.

Southeast and South Central USA

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Bear Management Program

The Florida Fish and Wildlife Conservation Commission's (FWC) Bear Management and Research Programs have been working closely with the Agency's Florida Black Bear Standing Team (FBBST). The FBBST currently finished restructuring the Bear Response Agent Program. The Bear Response Agent Program has been integrated as a program within the Habitat and Species Conservation Division. This fiscal year the Division elected to support the program through Agency funds. The FBBST is currently revising the existing FWC Bear Policies and plans to present the revised document to senior leadership for approval once completed.

The 18th Eastern Black Bear Workshop Proceedings were mailed to participants and sponsors in July 2006. Additional copies of the proceeding may be acquired by contacting Jena Perdue (Bear Management Program, Florida Fish and Wildlife Conservation Commission, 620 South Meridian Street, Tallahassee, Florida 32399, USA, or jena.perdue@MyFWC.com).

Additionally, the Bear Management Program released a rehabilitated cub in June. The bear was fitted with a radio-collar to follow its movements and determine its fate. Shortly after being released, the collar emitted a mortality signal, and the collar was found in a day bed not far from the release site. It is speculated the bear slipped the collar due to significant weight loss.

In August 2006, the Bear Management Program staff hosted a pilot Aversive Conditioning Workshop designed for selected FWC staff who

work with or encounter bears and for partnering agency personnel. Twenty-eight participants attended the three-day workshop that was instructed by John Hechtel of the Alaska Department of Fish and Game. John provided a strong foundation on understanding bear behavior, human behavior, and the limitations of deterrent techniques. The Bear Management Program is planning to host a second workshop for other FWC staff and partnering agencies in early Spring 2007.

The Bear Management Program staff and Regional staff are currently working on developing outreach programs to address garbage handling issues in local communities. These efforts are being addressed through community involvement and partnerships with non-profit organizations such as Defenders of Wildlife.

Bear Research Program

Determining the impact of relocation on nuisance Florida black bears in central Florida

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The purpose of this study is to determine the efficacy of relocation as a technique for the management of nuisance bears in Florida by the Florida Fish and Wildlife Conservation Commission (FWC). The objectives of this study are to investigate the effects of relocation on nuisance Florida black bears (*Ursus americanus floridanus*). Nuisance bears were captured in peninsular Florida and relocated to the Ocala National Forest (ONF) after being fitted with radio collars. The project began in May 2004 and the last bear was captured, collared, and relocated in December 2005, increasing the sample size to 43 bears (33M, 10F).

Nine bears (6M, 3F) were non-target captures by the FWC, but they were relocated to the ONF and incor-

porated into this study. Two of these males had been previously captured for nuisance behaviors before being relocated to the ONF for this study.

To date, seven bears have died (6M, 1F). Two were killed by vehicles (1M, 1F), two males were killed illegally, one male died in a forest fire, and two (1M, 1F) were euthanized by FWC for repeated nuisance behaviors. The fate of two male bears remains unknown; one male's intact collar was recovered from a creek and is believed to have been killed illegally.

Twenty bears engaged in nuisance activities post-relocation, five of which were recaptured and relocated a second time. Of these five, two males were removed from the study after being relocated to Apalachicola National Forest in northwestern Florida. The other three males, one of which was originally a non-target capture, were moved back to their first relocation site in the ONF, per FWC policy. Two bears (1M, 1F) were recaptured and euthanized for their post-relocation nuisance behaviors. Three bears that returned to the original capture area continued nuisance behaviors.

Thirteen bears (9M, 4F) are currently collared and will continue to be monitored through the end of 2006.

Ecology of the Florida black bear at the urban-wildland interface of the Ocala National Forest

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The goal of this project is to closely monitor the movements and activities of Florida black bears living in the urban-wildland interface of the Ocala National Forest. Objectives for this study are to document fine-scale habitat use of bears utilizing the urban-wildland interface and to assess the effects of habitat quality, quantity, and distribution on the movements and behaviors of bears inhabiting the urban-wildland interface. Data is also being collected that will contribute to

our understanding on whether these urban-wildland interfaces are population sinks for bears.

This project began in late June 2005. To date, a total of 32 bears (17M, 15F) have been captured. At the urban interface, 25 bears (13M, 12F) were captured in two different study sites and seven interior forest bears (4M, 3F) were captured as controls. Three males have dropped their collars, and an adult female and her male yearling died of unknown causes.

Diel monitoring is being used to determine bear activity patterns and habitat use. A total of five collared females reproduced in 2006. One female lost her cubs after approximately three weeks (no remains were discovered). Seven cubs (1M, 6F) from the remaining females were equipped with expandable radio collars to document mortality rates. To date only dispersing subadult male bears have exhibited documented nuisance behavior. Additional bears may be trapped in 2006, and all bears will continue to be monitored into 2007. Cubs born to females that reproduce in 2007 will also be radio collared.

Louisiana Black Bears

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Groups Take New Approach to Deal with Beeyard Bears

The Black Bear Conservation Committee (BBCC) recently met with the Louisiana Beekeepers Association, Louisiana Department of Wildlife and Fisheries, Louisiana Department of Agriculture and Forestry (LDAF), and USDA Wildlife Services to discuss apiary depredation by bears. Currently, those groups work together to respond to bear-apiary conflicts on a case-by-case basis. A limited number of electric fences are loaned out until



beekeepers can purchase their own systems. While these fence loans provide a good “quick fix” to beeyard depredation, all participants agreed a more permanent plan needs to be in place. The BBCC has offered to take the lead in a new beekeeper assistance program to address bear conflicts. LDAF is pursuing funding for a program that could be administered by the BBCC, where beekeepers can receive electric fence chargers and technical assistance.

The recent upsurge in beeyard conflicts is in part due to the increase in Wetland Reserve Program (WRP) lands. These private properties are restored to bottomland hardwood forests through voluntarily agreements with the Natural Resources Conservation Service. WRP has been extremely important in restoring habitat for the Louisiana black bear, with over 200,000 acres of forests restored since the bear was listed as a threatened subspecies under the Endangered Species Act in 1992. The BBCC supports the honey industry’s efforts to expand beeyards into a growing number of WRP lands. With effective bear deterrents (e.g., electric fencing), honey production can add additional value for WRP landowners.

Relationship between Arctic Charr (*Salvelinus alpinus*) and Polar Bears (*Ursus maritimus*)

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I conducted a research project on Sommerset Island at Creswell Bay, Nunavut, Canada, during August of 2005 and 2006 to examine the possible relationship between Arctic charr (*Salvelinus alpinus*) and polar bears (*Ursus maritimus*). Inuit have been reporting that phenomenon to me for years, but it was never really observed and documented by a scientist. My research team observed, and filmed, for the first time a polar bear on numerous occasions swimming and diving at the mouth of the Union River retrieving charr and sculpins. The polar bear dove in a fashion similar to what has been

observed in brown bears catching salmon, searching with eyes and nose below the water surface for about 3-6 seconds, followed by a prolonged dive, with its full body submerged, for 10-20 seconds. In several instances, we observed the bear “working hard” at getting at the fish – the hind legs were stretched out, sticking out of the water, indicating that the bear was reaching far to the bottom of the river and moving rocks. It was also interesting to observe that the bear was able to fish in that bay-river mouth interface where water currents are around 4-6 km/h and water depths are greater than 2 m.

These observations are important for several reasons. Climate change could force bears off the Nunavut sea ice earlier, which could result in bears being nutritionally stressed. As a supplementary feeding strategy and adaptation, polar bears are resorting to charr and other fish for food just as brown bears do. The feeding behavior is similar to some polar bears in western Hudson Bay, where they catch seals in the tidal flats. The protein and fat/oil rich fish could provide crucial energy to subadults and family groups during a time when food is scarce and bears are nutritionally stressed due to a shortened hunting season. Long-term monitoring of frequencies of feeding and the gender and age-classes of polar bears involved in this feeding behavior could aid in identifying trends regarding food intake on the ice.

It will be important to identify some of these summer polar bear feeding areas and to determine whether human development might impinge on these areas. Charr are also an important food source for Inuit, and possible commercial/subsistence fishing could lead to food competition.

Manuscripts about our observations are in preparation.

Cannibalism in Andean Bears?

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It is well known that most of the members of the Ursidae family are opportunistic eaters. The Andean bear is no exception. Although they primarily eat suro, a kind of bamboo in the cloud forest of the Intag region of Ecuador, they also eat carrion. For this reason, we use decomposing cows' feet as bait to capture then radio-collared bears. Still, I had never thought that a dead Andean bear could be eaten by other bears.



In April this year, we received an inactive signal from one of our radio-collared bears we named Alvaro. My field assistant, Alberto Tabango, and I went to investigate what had happened. As we got closer to the radio collar, we encountered a trail strewn with broken branches and crushed plants. This appeared to have been produced by something that had been dragged. We had followed the trail for about 50 meters when we began to

smell the odor of rotting flesh. While looking for where these smells came from, we discovered a tree platform that had been made by a bear. As we approached it, the odor became more intense, and we began to encounter pieces of bone with bits of unidentifiable meat from a large mammal.

We continued searching for the radio collar. The trail became a tunnel as it passed through dense stands of suro. A tunnel in vegetation is typical of a bear dragging its prey. (I had frequently observed these tunnels in areas where bears prey on livestock.) It appeared that one or more bears had been feeding on something.

Following the tunnel for another 50 meters, we encountered Alvaro's radio collar. I initially thought that Alvaro may have lost his collar and that the bear had been hauling the carcass of a deer (*Mazama americana*). However, 100 meters further down the tunneled path, we came

across what remained of Alvaro's body. Chest, dorsal spine, forearms, and muscles had disappeared. We began to look for the cause of death. We found three holes, approximately 7 mm in diameter, in Alvaro's abdominal region and right lateral thorax, indicating that Alvaro had been shot by a hunter.

It was not possible to find the bullets in his body because of the distance that Alvaro was dragged.

From the tracks we encountered, we deduced that Alvaro was shot but escaped. Fatally wounded, the bear speedily left the scene of the shooting, where he tried to heal himself by licking. This was deduced from the quantity of hair in his mouth. Despite his efforts, Alvaro eventually died and later was dragged and devoured by one or more fellow Andean bears.

The death of Alvaro has caused us great sadness. However, we feel that his loss was not in vain. It has helped us learn a little more in a place where it is hard to find any remains of large mammals, especially remains of bears in the cloud forests of Ecuador.

Andean Bears Jump from Treetops

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Very few people have had the opportunity to see an Andean Bear climb to the top of a tree. Our project had the luck to see this rare event on two occasions in the cloud forest of the Alto Choco Reserve, Intag region, northern Ecuador. The first occasion was in July 2000 and the second in February 2006. We saw four bears in total, three of which demonstrated this fascinating escape behavior; the remaining bear was hidden in the surrounding vegetation.

All the encounters were unexpected and the bears instinctively climbed the nearest tree and headed for the treetops. While climbing they groaned and panted heavily, simultaneously urinating and defecating, perhaps because of the intense fright that we gave them. Trying to evade us, they looked for a way to reach nearby trees by jumping from one branch to another over a space of

about 1.5 meters. As time passed by, the bears gradually realized that they couldn't escape us, and as a result they began to bend and break branches, quickly accumulating vegetation to build platforms high in the tree. The platforms were apparently made in an attempt to hide from the sight of the humans below.

Perhaps intending to scare us, the bears broke and noisily threw down moderately large branches from the treetop. When they could not elude us, each bear (individually) went to the extreme end of a branch and bit it to break it. They then swung on and balanced on the branches so that their weight helped break the branches which fell one by one to the ground.

In the first encounter, one bear fell approximately 7 meters into a

large quantity of suro, a bamboo-like plant. The suro appeared to act as a cushion and break the bear's fall. On the second occasion, two bears fell directly to the ground, with one bear falling from about 8 meters and the other from 10 meters. In each case, once on the ground, the bear rapidly ran off without showing any injuries.

Anecdotal evidence from farmers and hunters indicates that bears larger than those we observed have jumped from trees 15 to 20 meters above ground, although these bears did not prepare for the jump in the manner described above. Local farmers and hunters have reported that comparatively larger and heavier bears than the ones we saw, when threatened whilst in a tree, also fall from great heights to escape dangers.

However, in cases of more imminent danger involving gunshots, the bears prepare their dismount in a different way to the one I have described above. In these cases, it is reported that the bears simply jumped from heights between 15 and 20 meters, without showing the branch-breaking behavior that we have witnessed.

I am not sure whether other bear species display the same type of escape behavior as the one displayed by the Andean bear. However, it appears to me that no animal of such weight should be able to jump from such heights without injury. It would be very interesting to know why the Andean bear apparently doesn't injure itself when jumping from such heights.

Captive Bears

IBBR Finally Gets Solid Roof Over Main Bear Enclosure

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During the fall of 2004 and into 2005, Idaho Black Bear Rehab, Inc. (IBBR) received 40 orphaned cubs from Idaho and surrounding states. Due to their condition, most of the bears couldn't hibernate, and we had active bears all winter. By late fall, the bears either ate or tromped down all the vegetation and grass. By winter, it was slick and slippery; the bears loved it, but we ended up on our rears a few times. Then the spring rains came with a vengeance. Since

the main enclosure wasn't covered except for a wood deck area over some of the dens, it became a muddy mess.

The one thing I insist on in rehab is that the animals can stay dry and protected from the weather. If they want to go out in the snow or rain, I have no problem with that. It's a totally different matter when they can't get out of the weather. The rain was so heavy and so frequent that there wasn't one day for about a month that we didn't have at least three inches of water all over the main enclosure.

The bears had torn up all the wood deck covering the dens so the dens were flooded too. We had several hollow logs to use for dens too, but they were flooded inside. The bears could climb on them to get out of the mud but still had no protection from the rain.

Once again, the bears seemed to be having a great deal of fun despite the fact their foster mom was extremely upset. One of the favorite games was to go flying by at full bear speed just as I walked through the deepest puddle. Water and mud went flying

everywhere, especially all over me. I'm sure they just wanted to share the fun and didn't realize that grumpy old mom wasn't having any fun or maybe they did realize it!

I swore we would not go one more year without a roof over that enclosure, but I knew we couldn't raise that kind of money. Estimates started out at US\$15,000, dropped down to US\$12,000, and then, due to some of the building requirements, ended up at US\$16,000.

Once again, WSPA stepped in and saved us. They funded the cost of all the materials. Garden City Planning and Zoning worked with us to get the plan approved quickly. Buck Peak, a Fish and Game construction foreman, and the Poachers Club (no, they are not poachers) volunteered all the labor. We started building in August 2005 and were done the end of September.

Half the roof is covered with green metal sheets and the other half with clear sheets that let the sun in. The cubs of 2004 never got to enjoy it, but when the spring rains came this year,

Captive Bears

it was so wonderful to see cubs on dry ground. There is still a small area in the front section where they can play in the rain if they want to.

In 2005, the World Society for the Protection of Animals (WSPA) donated the funds to buy a new Ford flatbed truck for transporting bears. We used it while releasing some of the 2004 bears. Being able to transport four carriers at one time was especially helpful when transporting out-of-state yearlings back to the release state. It has saved us so much time, work, and money in the release part of the rehab process. We had volunteers who wanted to help transport bears, but the metal carriers were too large for their vehicles. Now they can use the IBBR truck to transport bears for us. A truck and a roof in the same year – two dreams come true for IBBR in the same year, thanks to WSPA!

In the next two to three months, IBBR will be installing a monitoring system in the main enclosure. This will allow us to observe and film bear behavior without disturbing the bears. It's difficult to sneak up on the cubs

as they either see, smell, hear, or sense our presence. Then we become the cause of the behavior and the focus of their attention. If it's possible, we will be adding live video feed to our website. Then bear projects, other bear rehabilitators, state agencies, schools, etc. can view the bears while in rehab and learn along with us.

Conservation Education

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Water's Edge Exhibit at the Pittsburgh Zoo & Aquarium

The first phase of Water's Edge has opened at the Pittsburgh Zoo &

Aquarium. The exhibit will feature sea otters and walrus, along with the two polar bears already on display. The planning team evaluated some of the most sophisticated polar bear enclosures around the country before embarking on plans to construct this latest enclosure for the new additions to the zoo. The staff's vision was to develop a "tundra" habitat which both immerses the patrons in an arctic ecosystem and provides year round conditions favorable to polar mammals. Patrons can observe the animals in an air-conditioned den. They can also view the animals through a 30-foot acrylic tunnel. The bears can be viewed both above and below the water surface of their marine pool. Water's Edge conveys several conservation issues relevant to marine mammals but emphasizes the importance of these mega-vertebrates as indicators of polar ecosystem health.

Next Issue: Opening of Asia Trail, the new sloth bear exhibit at the National Zoo.

Student Forum

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Viva México! Here We Come!
Well, by now the Japan meetings have come and gone, and we prepare for the next North American IBA conference, which will be hosted in Monterrey, México, November 4-10, 2007 (see page 27). This will be an exciting time for IBA students! We will be organizing our first student auction to help provide some activity funds for the Student Forum. We are

asking students to begin collecting and donating interesting and unusual "bear collectibles" from their countries or regions, such as artwork and other crafts.

In addition, we will be coordinating several sessions entitled "Bears 101" for new students who need some basic level workshops about bear handling, biology, ecology, genetics, and conservation. These workshops will be held on the weekend following the conference sessions, November 10-11.

Because the IBA conference coincides with the UNESCO Forum on Cultures, we are getting a lot of attention and much appreciated help. Students are of particular importance, and we are working on plans to arrange student housing on the premises of the conference facilities.

We'll be contacting many of you through Truman, so keep posted. In addition, I will be leaving my position here at the King Ranch Institute and changing back to my beloved Caesar Kleberg Wildlife Research Institute as a Research Scientist in January. It will be bears full time from now on, and I won't be missing any more IBA meetings! Thank you all for your kind emails as you kept me up-to-date with the meetings in Japan. I will send you my new contact information via Truman as soon as possible, but my email address will remain the same.

For now, I say "Adios" since I won't be publishing a column this issue, but I promise to have a worthwhile topic during the next newsletter as we begin a series on Habitat Analysis for Dummies. See you then!



Are you an IBA Student?
Then you need to belong to the
Student Forum List Serve!

- For students only
- 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

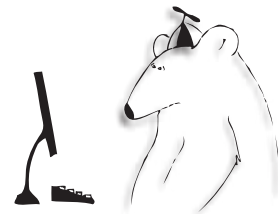
Instructions

- Contact Diana Doan-Crider at d-crider@tamuk.edu to enroll
- After enrollment, go to: <http://aristotle.tamuk.edu>
- Click on *Agricultural Lists*
- Click on *Truman*
- Enter your email address and the password "Bears01"
- Go to *Create Message*
- If you're a new member, please submit a paragraph about your project and include your contact information so we can all get to know you.

**New IBA Students -
Sign Up For
Student List Serve (Truman)
Now!**

Other Important IBA Student Links

- www.bearbiology.com
- Global Bear Research Program Links page — <http://www.bearkeepers.net/GraduatePrograms.htm>



Bears in Culture

Pining for the Plains Grizzly in Kansas, or, J_____ S_____ has Six Toes!!

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I'll be driving through former grizzly country soon, on my way from St. Paul, Minnesota, to Topeka, Kansas, passing through Iowa and part of Missouri on the way. The bears themselves have been gone for 150 years or more, eliminated almost immediately following the establishment of Euro-American farms and towns in the mid-nineteenth century. Herds of bison and elk followed shortly afterward. A few small patches of native prairie remain.

As anyone familiar with the American Midwest can tell you, it is hard to picture the great bears in this part of the world today, but they once held a prominent role. In the early nineteenth century, powerful men among American Indian tribes of the lower and middle Missouri River kept elaborate necklaces of grizzly bear claws. The necklaces outlasted the bears, being worn on special occasions well into the twentieth century.

George Catlin painted portraits of some of these men in the 1830s, as detailed in his *Letters and Notes on the Manners, Customs, and Conditions of the North American Indians*. Leaders among the Mandan, Ioway, Missouri, Otoe and Meskwakie tribes are depicted wearing grizzly claw necklaces. One Otoe man is wearing a full grizzly skin with the claws still present on the four paws. Further west, Catlin shows a Blackfoot healer wearing a "yellow bear" skin, also with the claws attached.

The necklaces appear to have been made using only the longer front claws, strung through holes drilled in the bone knuckle (the third phalanx), which is covered with a strip of fur. The claws themselves fanned out across the shoulders and chest of the wearer. Many of the necklaces are supported by a row of strung beads about half-way down the length of the claws. Some, such as later Meskwakie styles, are more elaborate, with a tighter circle of claws, otter fur, and associated beadwork down the wearer's back. The "simplest" style is simply a string of claws, unsupported by other beadwork. This type has been attributed to the Dakota (Sioux), although some Ioway leaders are pictured wearing loose-clawed necklaces as well. The necklace brought back by Lewis and Clark is this style. It is now in the collections of the Peabody Museum at Harvard and will be the subject of a future column in this series.

Catlin describes one Dakota man giving away his grizzly claw necklace and other adornments in an exchange of high-prestige gifts. This belies an often repeated notion that only people who had killed a bear could possess a necklace. Indeed, it seems likely based on archaeological and ethnographic evidence that claws were traded to some extent. Catlin painted two portraits of young boys, Ioway and Meskwakie, respectively, wearing bear claw necklaces. They were sons of important men. Clearly, wearing a grizzly claw necklace was a sign of great prestige.



Bear Claw Necklace
National Museum of the American Indian.

It is assumed that bear claw necklaces were an ancient tradition, because claws and teeth of bears have been found at archaeological sites around the upper Midwest. These are mostly black bears, however. A rare archaeological example of a grizzly claw necklace is on display in the University of Iowa's Museum of Natural History, recovered from a cave in Jones County (east-central Iowa). Only the bone cores of the claws remain.

I'm going to Topeka to present a paper on animal bones I studied from two "recent" archaeological sites in the Flint Hills of Kansas – two farmsteads from the 1880s and 1890s, one French and one English/American. That has nothing to do with bears (but see below), except to highlight the drastic changes to the mammalian fauna of Kansas within a few short decades. There were bone fragments at these sites of animals you would expect on farms, such as cattle and pigs, sheep, chickens, domestic geese and cats, but

the overwhelming majority were from small, wild mammals – cottontail rabbits (one jackrabbit), squirrels, muskrat, possum and woodrats. There were also a few seashells, which I did not expect to find in Kansas. I suspect, but cannot prove, that they were souvenirs from immigrant voyages. The Flint Hills were and are one of the renowned beef producing regions of the United States, but these were diversified subsistence farmers, sending beef to market. The rabbits and squirrels were the source of many meals at both farms, and the pelts were probably a source of extra income.

The background research for the farmstead study led me to E. Raymond Hall's 1955 *Handbook of the Mammals of Kansas*, and unexpectedly to a great bear story. I've quoted Hall below, as he sets up the story quoted from a 1924 edition of the *Saturday Evening Post*:

"My own boyhood, all spent in Kansas, was so far removed in time from incidents there that involved Grizzly Bears, if they occurred at all in my part of the State, that I only had a detached interest in the conflict between them and men. The first year of two decades that I spent in California, however, made me more conscious of such conflicts, first because I visited territory where the Grizzly was reputed (incorrectly I now think) still to roam and second because, for that general region, the *Saturday Evening Post* late that same year (p. 153, for December 6, 1924) carried the account of a tragic incident that involved a (Grizzly?) bear and a person who could have been a Kansan.

"The account by Mr. Will C. Barnes goes as follows:

"A few years ago the body of an old prospector and trapper known in the region as J___ S___ was found by a ranger in one of the national forests in the high Sierras of California. The body had been terribly mauled and torn by bears and perhaps other wild animals, and all the evidence pointed to a fight to

the death with an old mother bear and two cubs. Nothing was found in the man's effects to lead to the location of his friends, and absolutely nothing of his past or home ties was known in the region. The body was duly and officially viewed by a coroner's jury, which decided he had been killed in a bear fight, and he was buried near where found. Naturally the case got into the local papers, from which it was wildly copied. Some weeks later the ranger who found the body received a letter from a woman in a Midwest state, of which the following is an exact copy:

"'Kind and Respected Sir: I see in the paper that a man J___ S___ was atacted and et up by a bare whose cubs he was trying to git when the she bare came up and stopt him by eatin him up in the mountains near your town. What I want to know is did it kill him or was he only partly et up and [is] he from this place and all about the bare. I don't know but what he is a distant husband of mine. My first husband was of that name and I suppose he was killed in the war but the name of the man the bare et being the same I thought it might be him after all and I thought to know if he wasn't killed

either in the war or by the bare for I have been married twice since and their ought to be a divorce papers got out by him or me if the bare did not eat him all up. If it is him you will know it by having six toes on the left foot. He also sings base and has a spread eagle tattooed on his front chest and a ankor on his right arm which you will know him if the bare did not eat up these parts of him. If alive don't tell him I am married to J___ W___ for he never liked J___ . Mebbe you had better let on as if I am ded but find out all you can about him without him knowing anything what it is for. That is if the bare did not eat him all up. If it did I don't see you can do anything and you needn't take any trouble. My respects to your family and please ancer back.

"'P.S. Was the bare killed.

Also was he married again and did he leave any property worth me laying claim to?'"

Wow. To recap, that's a triple quote of the letter – first by the *Saturday Evening Post* in 1924, then in *Handbook of Mammals of Kansas* in 1955, and now in the fine periodical before you. It was quoted by Hall in his book because it may or may not involve



George Caitlin's Bear Dance of the Sioux, Missouri Historical Society, St. Louis

Bears in Culture

grizzlies and a man who may or may not have been from Kansas.

Directly following the letter, Hall jumps to descriptions of grizzly claw marks on trees, their dietary habits (beyond six-toed tattooed trappers) and so on – things that you might expect in a book on Kansas mammals, even more so if grizzly bears had actually lived in Kansas during the century leading up to publication

of the book. Non-celebrity mammals such as the raccoon, which still thrives in Kansas, thank you very much, only rate about three pages in Hall's book, compared to the grizzly's five. Black bears, at that time also long gone from Kansas, get four full pages. Cottontail rabbits, the predominant source of the bones on my farmsteads, barely count for two.

Hall's wish for the grizzly to still be in Kansas is tangible, and probably inspired by the glamour of the great bear as the symbol of wilderness and frontier danger. I love the Midwestern landscape today, but I also appreciate the gift of being an archaeologist – being able to look at the modern world and see something completely different.

Publications

Recent Bear Literature

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Ursus News: what an impact!

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As most of you know, in addition to citation databases such as *Biological Abstracts* and *Wildlife Worldwide*, *Ursus* has been included in the Science Citation Index Expanded (SCIE), published by Thomson Scientific of Philadelphia, Pennsylvania, USA, beginning with Volume 15 in 2004. Beginning with Volume 18 (to be published in 2007), *Ursus* will also be assessed by Thomson relative to other journals in field biology and given an impact factor. It will not be possible to know in advance what the impact factor will be; the results for Volume 18 will be published in early 2008, and will vary yearly. But then, most of you already know that *Ursus* authors have been having tremendous impacts in the field for years!

AIBS Diversity Scholars Program

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The American Institute of Biological Sciences (AIBS) recognizes outstanding biology students from under-represented minorities, as well as students with disabilities. Each



will receive a \$1000 travel award to present research at a scientific meeting of his/her choice, complementary travel and registration to the 2007 AIBS Annual Meeting "Evolutionary Biology and Human Health," and a one-year complementary membership to AIBS.

For more information on the AIBS Diversity Scholars Program, and for application information for 2007, please visit: www.aibs.org/diversity/diversity_scholars_program.html.

Events

18th International Conference on Bear Research and Management

November 4-10, 2007
Monterrey, Mexico
<http://ckwri.tamuk.edu/blackbear/IBAcference>

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Summary of Important Dates

Conference Dates: November 4-10, 2007
BSG Groups and Student Workshops: November 10-11, 2007
Abstract Submissions: Begins February 1, 2006, closes May 1, 2007

Travel Grants: Begins April 1, 2007, closes September 14, 2007
Early Registration: Begins April 1, 2007, closes October 1, 2007

Location

Monterrey, Mexico, has been chosen as the site for the 18th International Conference on Bear Research and Management, to be held November 4-10, 2007. The IBA conference will coincide with UNESCO's Universal Forum of Cultures (<http://www.monterreyforum2007.org/>), which will take place September-December 2007. Though Monterrey is Mexico's

Events

third city, it is beautifully situated at the head of the Sierra Madre Oriental mountain chain. Monterrey is located only two hours south of the U.S. border, and rests in the Tamaulipan thornscrub/Chihuahuan desert at approximately 800 m above sea level. The Sierra Madre dramatically rises up to pine/oak forests at 2000 m within one mile of the city's edge. November was chosen for the conference because of the potential to see high bear activity and experience pleasant weather conditions.

Several key bear areas are within a 1-hour drive of the city. Due to habitat encroachment, an increasing bear population, and possibly drought-related bear movements, reports of bears and bear-human conflicts have been increasing. Interest in bears is high, both publicly and within management agencies. Bear research and management in Mexico is an issue that has recently received attention at both the state and federal level, but an active conservation strategy is lacking. This conference will bring attention to bear conservation at a crucial turning point and will encourage biologists to seek training in the area of bear research and management.

Conference Program

The conference begins on Sunday evening, November 4, and ends on Saturday, November 10. Bear Specialist Groups will meet on Saturday, November 10. In addition, special student sessions and training workshops will take place on Saturday and Sunday, November 10-11, 2007.

Registration and Travel Grants

Registration will begin April 1, 2007, via website or fax. Early registration will be available and is encouraged. Reduced fees will be available for students and participants from less-developed countries (see list via conference website at <http://ckwri.tamuk.edu/blackbear/IBAconference>). Travel grant applications can be downloaded from the website beginning on April 1, 2007. Deadline for submission of travel grants will be September 14, 2007. All travel grants will be handled in U.S. dollars, and arrangements will be made to facilitate check cashing on the conference premises.

Facilities and Transportation

Monterrey is a progressive city, and facilities are ideal for the IBA's conference needs. Monterrey has an international airport with 250 daily, direct flights from Mexico City, Dallas, Houston, New York, Chicago, Memphis, Atlanta, and Los Angeles. The recent United Nations International Conference on Financing for Development was held in Monterrey at the CINTERMEX Conference Facility, where they hosted over 50 heads of state. The Monterrey Office of Conventions and Visitors (OCV), which coordinated the UN Summit, will be helping us to organize the IBA conference at the same conference facilities (See <http://www.cintermex.com.mx/> and <http://www.parquefundidora.org/>) and to obtain discount airfare rates for conference participants. More information on connecting flights from Europe and South America can be viewed at <http://www.ocvmt.com/>. The OCV will be assisting with services such as language translation (Spanish, Russian, Japanese, and others), field trips, immigration permits, and logistics. Excellent lodging facilities (US\$85 per night) are connected to the 350-acre enclosed conference site, which also contains a large eco-park, museums, and family areas, and is conveniently located close to banks and great restaurants. Less expensive hotels (US\$30-45 per night) are within a 5-minute metro-ride of the park. In addition, we will have special housing for students and those that cannot afford lodging. Corporate sponsorship is expected to cover expenses for some conference meals, field trips, and special events; registration costs, therefore, will be kept at a minimum. We will have direct communication with the Mexican Consulate and U.S. Embassy to ensure that immigration procedures go smoothly for conference participants. Any travel into Mexico will require a passport beginning in 2007.



Field Trips

Field trips will include the Chipinque National Park, the Sierra los Picachos, and Cumbres National Park (black bear study areas). Garcia Caves, Horsetail Falls, and the Mina Archeological Area are also close-by. Bird-watching includes a large population of red-fronted parrots and migratory songbirds; monarch butterflies may also be migrating along the Sierra Madre during that time. The conference site is close to the historic downtown area, as well as natural and scenic areas. The Coordinating Committee will assist conference participants in arranging travel for those wishing to visit other natural areas and parks of Mexico before or after the conference.



Workshops and Meetings

IBA committees, working groups, and workshop coordinators who wish to schedule meetings/workshops during the conference, please contact Diana Crider at d-crider@tamuk.edu before April 1, 2007 to schedule these events.

Call for Papers and Posters

The conference will cover all aspects of bear research and management. There will be four types of presentations:

1. Invited speakers (25 minutes, 5 minutes for questions)
2. Invited Panel Speakers
3. Oral Presentations (15 minutes, 5 minutes for questions): Graphics and Powerpoint presentations must be presented in English, the official language of the IBA. However, presenters may *narrate* their presentations in other languages, and simultaneous translation will be provided.
4. Posters and Graphic Displays: LCD panel displays are permitted (no sound), but advanced notice must be given regarding electrical hook-ups or display tables. Each presenter will be given a total space of 90 x 150 cm. Please

include a photo of the presenter for each poster/display. Posters must be presented in English. Presenters will be required to attend their posters during the allotted sessions.

Submissions for Presentations

Authors wishing to present their work in the conference, either as an oral or poster presentation may submit a summary of that work beginning February 1, 2007. Summaries must be submitted electronically via the conference website, though exceptions will be made for participants who do not have access to the internet. Summaries can be up to one page of single spaced text (500-600 words). Summaries should include information on sample size, study duration, major findings, new information gained, and the utility and significance of the study. Submissions should indicate whether the entry is for oral or poster presentation. The number of slots for oral presentations is limited; presentations will be selected to provide a varied and exciting program of papers based on the project summaries submitted. Authors not chosen for an oral presentation are encouraged to

present their work in poster format. Deadline for submission of summaries is May 1, 2007.

Ursus Submissions

Submission of a full manuscript to *Ursus* (the peer-reviewed journal of the IBA) is encouraged and may be a factor in selecting papers for oral presentation. Authors of poster presentations are also encouraged to submit full papers to *Ursus*. Please consult the website for more information about submissions to *Ursus*.

Authors submitting to *Ursus* are reminded that page charges are US\$90 per printed page and are the responsibility of the author. Typically, 2.5 pages of double-spaced manuscript equals one page of final printed text. IBA Publication Grants are available to cover full or partial costs of publications. Contact Frank van Manen at vanmanen@utk.edu for more information.

Website information regarding this conference can be found at <http://ckwri.tamuk.edu/blackbear/IBAConference> beginning December 1, 2007. Registration forms will be available in upcoming editions of the *IBN* and on the website beginning in April 2007.

Events

19th Eastern Black Bear Workshop

The West Virginia Division of Natural Resources, Pennsylvania Game Commission, and Maryland Department of Natural Resources will be hosting the 19th Eastern Black Bear Workshop, scheduled for Spring 2007.

Dates

April 10-12, 2007

Location

National Conservation Training Center in Shepherdstown, West Virginia, USA

Registration

Registration details, including directions for online registration, will be announced at a later date. A block of rooms has been reserved at the National Conservation Training Center. Rooms will be available beginning Monday evening, April 9, for individuals arriving early. Registration will include workshop sessions, socials, breaks, guest speaker, and proceedings.

Theme

Human-Bear Conflict Management: aversive conditioning and information outreach

Schedule of Events

Monday, April 9

Afternoon registration
Evening social for those arriving early

Tuesday, April 10

Morning registration
1:00 pm Opening remarks, Status Reports
3:00 pm Selected paper presentations
Evening social with selected posters on display

Wednesday, April 11

Morning workshop session:
Aversive Conditioning – state of the science, its use, and

developing recommended protocols

Afternoon workshop session:
Information/ Outreach Programs – developing and evaluating success of outreach messages

Evening speaker: John Hechtel,
Alaska Fish & Game Dept.

Thursday, April 12

Morning: session summaries and business meeting

Call for Abstracts

We invite abstracts for consideration as posters or 15-minute oral presentations. Topics for oral presentations should be related to the theme of managing human-bear conflicts. Posters may be related to any current black bear topic. Abstracts should be one-page long, single-spaced in MS Word format, and contain contact information for the authors. Submit abstracts electronically to Harry Spiker, hspiker@dnr.state.md.us. Deadline for submitting abstracts is January 8, 2007.

Individuals selected for oral presentations will be required to submit a typed manuscript by the end of the workshop. Manuscripts will be published in the Eastern Black Bear Workshop Proceedings. Manuscripts are not required for poster presentations, although poster abstracts will be included in the proceedings. Manuscripts should follow the format required by the journal *Ursus* (information for authors available at www.ursusjournal.com).

Questions?

If you have any questions, please contact one of the following individuals.

Chris Ryan
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PA Game Commission
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Email: mternent@state.pa.us



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10th Western Black Bear Workshop

Spring 2009

The 10th Western Black Bear Workshop will be hosted by the Nevada Department of Wildlife in the Reno/Tahoe area, Spring of 2009. Please feel free to send suggestions on a theme, comments on past workshops, or any other information you feel is important. Exact dates are to be determined, but we are hoping to avoid conflicts with other pertinent conferences. Contact Carl Lackey at cdembears@aol.com or +1 775-720-6130.

2007 Captive Bear Husbandry and Welfare Symposium

The 2007 Bears Informational Exchange for Rehabilitators, Zoos, and Sanctuaries' (BIERZS) Captive Bear Husbandry and Welfare Symposium is tentatively scheduled for August or September of 2007.

Co-Chairs: Else Poulsen and Jordan Schaul

Updates will be posted on www.bearkeepers.net/bierzs.htm

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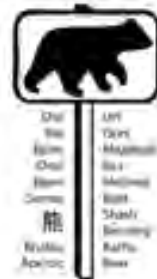
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USGS-SAFL, University of Tennessee
274 Ellington Hall, Knoxville TN 37996, USA
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IBA Member Application, page 2

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Please check columns in which you have expertise and/or are willing to assist / advise IBA

		1. Expertise	2. Advise/Assist IBA			1. Expertise	2. Advise/Assist IBA
Accounting				Legal			
American Black Bear **	years			Legislative Process			
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Brown Bear **	years			Nuisance / Damage Management			
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Conservation *				Organizational Development			
Disease				Pathology			
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Education / Outreach *				Polar Bear **	years		
Enforcement				Policy *			
Ethics *				Population Dynamics			
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** Please indicate number of years of experience with each species

* Indicates an IBA committee

Please check all academic degrees earned: BA/BS MA/MS PhD/DVM Other (list) _____

Please list major field of study _____

Please list all countries in which you have worked with bears _____

Please list languages in which you are fluent _____

What changes/improvements would you like to see in the IBA (newsletter, *Ursus*, conferences, etc.)? _____

How can IBA better serve its membership and/or help you? _____

Check here to include your name in the IBA membership directory

Thank you for completing the survey. Please tear out and mail or fax!

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Volume 16(2) 2005

An Official Publication of the International Association for
Bear Research and Management



Ninth International Conference on Bear Research and Management
Monograph Series No. 3

Density-Dependent Population Regulation of Black, Brown, and Polar Bears

Edited by Mitchell Taylor

with contributions from
David L. Garshala on black bears
Bruce McLaren on brown bears
Andrew Derocher and Mitchell Taylor on polar bears

An invited paper presented at the Ninth
International Conference on Bear Research and Management

MISSOULA, MONTANA, USA
February 23-25, 1993

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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 (USA tax #94-3102570) open to professional biologists, wildlife managers, and others dedicated to the conservation of all bear species. The organization has over 550 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.

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