



# International Bear News

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

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**\*Help Meet the Challenge & Double Your Gift to IBA!**

## From the President

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### Where We Are, Where We Want to Be

The IBA we know has come far from its first workshop held to discuss the biology of bears in Whitehorse, Yukon Territory, Canada, during August 1968. The workshop was attended by 49 people gathered in the hope that sharing their research and management approaches would lead to improvements in understanding and conservation of bear populations. It was a freewheeling exchange of ideas rather than a more formal recitation of scientific papers. We have changed substantially in the 34 years since, but the problems that the world's bears and their habitats now face are far more critical. The state of bear species conservation in another 34 years will depend upon how we to respond to these present challenges.

IBA's membership now numbers over 750 from more than 45 countries, and this August we hold our 14th conference. However it is not the size of our organization that is a measure of success but how effectively we achieve our mission. Our goal remains to promote conservation and restoration of the world's bears through science-based research, management and education. Effectiveness will be measured in the number of populations that are secure in the future through our efforts.

While these avenues are very useful, the habitat upon which bears depend is still being rapidly destroyed. Without habitat the best

management practices cannot maintain or restore at-risk bear populations. Over-hunting, poaching, and killing bears for their parts are still driving declines in some populations. Addressing these problems will require innovative conservation and education practices. It will require the support of national governments and the enthusiastic backing of the people in bear country. IBA needs to do more.

Face-to-face discussions that take place at conferences enable biologists to take the most recent and effective advances in science-based management practices home and put them into action. Funding by donors, conference conveners and the IBA treasury provides support for attending conferences to many bear biologists who could not otherwise attend. Preference is given to individuals from parts of the world where bear populations are most at risk. It is not only the individuals who benefit, but through their commitment, the bear populations in their countries benefit as well.

Further interchange takes place through this newsletter and through our scientific journal, *Ursus*. Our membership dues are barely enough to make the newsletter self-sufficient, but it is part of the glue that holds us all together. Again, many individuals donate memberships to those from countries where hard currency is difficult to come by (use the form on page 25 to donate).

During our last conference, Council voted to formalize IBA's relationship with the World Conservation Union's (IUCN) Bear Specialist Group (BSG) and to have the president and past president act as chair and vice-chair of the BSG. (This occurred prior to announcement of election results.) This action will give IBA a stronger international voice in

identifying and prioritizing those bear species and populations that are most at risk of extinction or serious decline. We are in the process of appointing chairpersons for each species specialist group. These chairs will be responsible for (1) assembling small committees of knowledgeable individuals, mostly from the countries in the species' range, to assess the status of bear populations within the species' range, (2) prioritizing the immediacy of need for conservation action, and (3) suggesting appropriate responses to achieve population recovery.

The Council has also established the Economic Development Committee, whose function will be to provide direction in developing an economic base that will allow IBA to fund conservation efforts necessary to achieve our goals. If successful, the priorities established by the Bear Specialist Group will be important in helping the IBA Grant Committee to make award decisions that will best address bear conservation. At present, the IBA Grant Program has limited funding. If we want to be a force for conservation efforts that are truly effective, we need to greatly expand our reach. The success of the projects that the Grant Program has supported proves that it can be done. This is in part due to the commitment of our members. IBA is an association of bear conservationists and professionals—we volunteer our time and donate our money for bears. Other than the costs associated with publication of *Ursus* and *International Bear News*, and support of conferences, almost all of the funds we raise go to conservation efforts. We have the expertise, the drive, and the commitment, but we lack the funding.

## AZA Bear TAG Workshop

In April, I was invited to attend the American Zoo and Aquarium Association (AZA) Bear Taxon Advisory Group (Bear TAG) Workshop. That's almost as much of a mouthful as the International Association for Bear Research and Management's 14th International Conference, and an obvious reason that we all resort to acronyms.

This was a great meeting. Papers that were presented confirmed how IBA and Bear TAG members could both substantially benefit from increased collaboration of effort and exchange of information. See page 14 for details about how to join such a project—an ursid reproduction study.

Bears in zoos act as ambassadors. They are representatives of their wild counterparts that enable millions of people to learn more about conservation issues that are important to us all. Many zoos have active research programs that can benefit from field studies; likewise, field studies can benefit from detailed behavioral observations and physiological monitoring that can be done best in the controlled environment of the zoo. It is very likely that the Bear TAG will hold a workshop immediately prior to the IBA 16th International Conference to be held in San Diego (see page 23). I encourage you all to attend.

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## Challenge Grant

IBA recently received \$5,000 from an anonymous donor who strongly believes in the goals of IBA. This was to supplement funding that the Grant Program allocated to the 2002 proposals it received (see page 4).

The same donor offered to match all donations made to IBA by December 31, 2002, outside of those received from the Bevins Foundation, up to \$10,000. The funds will be earmarked for conservation oriented projects outside North America. This means that every donation that IBA receives by year's end will be doubled in value. All these funds must go to further bear conservation. Use the form on page 25 to double your contribution to the IBA.

The action by this donor makes a very strong point. Bear conservationists can be found in many places and in many professions. They are not limited to those employed by academic institutions, government agencies, or conservation organizations. We all have personal reasons for commitment to stewardship of bears—we can make a difference if we act together.

**Double your donation to IBA!  
Please make your contribution  
NOW using the form on page 25!**



## IBA Grants—Changes and a Challenge

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### Important Grant Changes!

Anyone considering requesting a financial grant from the IBA should note the following changes:

1. All proposals should be submitted electronically unless this is really impossible.

2. Submitters should send all documents in MS Word format or in a format that can be converted to MS Word easily such as plain ASCII text. Please do not use WordPerfect.

3. Proposals may be submitted at any time; they will be held for the next review. Normally there will be only one review each year. The review will begin shortly after the start of the calendar year.

4. There is a new deadline! **All proposals must be received before midnight on December 31.** Any received after that will be held over for the next year's review.

### Special Donation Funds Research

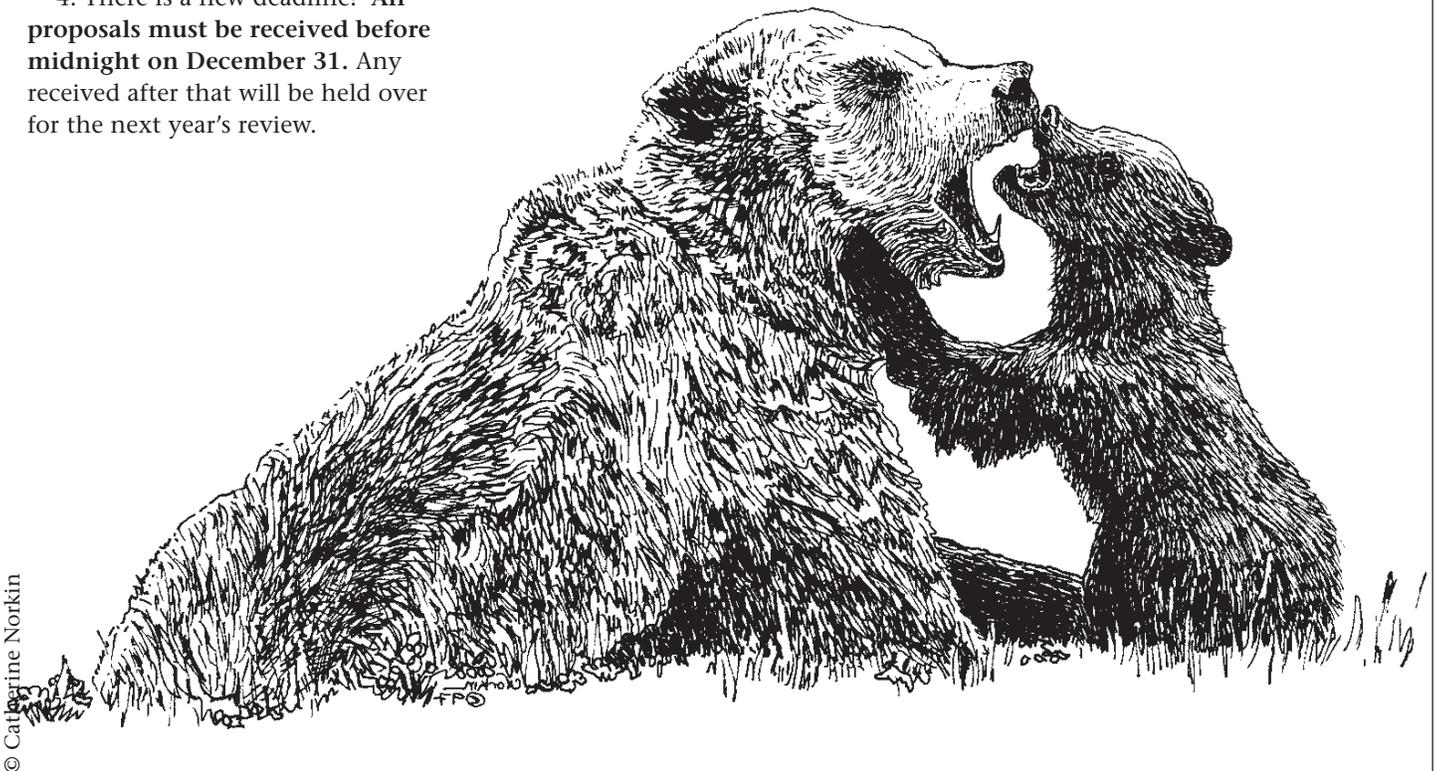
The Grant Program received a donation of \$5,000 from an individual who wishes to remain anonymous. The donor stipulated that the money be allocated before the end of June 2002 and that it be used outside of North America. Fortunately, the Grant Review Committee's ranking of proposals for 2002 resulted in funding for the next proposal on our list. **Marta De Barba** received support to study a small population of brown bears in the Italian Alps. Marta is a PhD student at the University of Idaho working with Lisette Waits.

### Challenge Grant—Double Your Money!!!

An anonymous donor (the same individual who funded an additional project in 2002) has offered a challenge. For the remainder of 2002, he will match contributions to the IBA Grant Program, except Bevins' funds, up to US\$10,000. **Use the form on page 25 to help double donations for the grants program.**

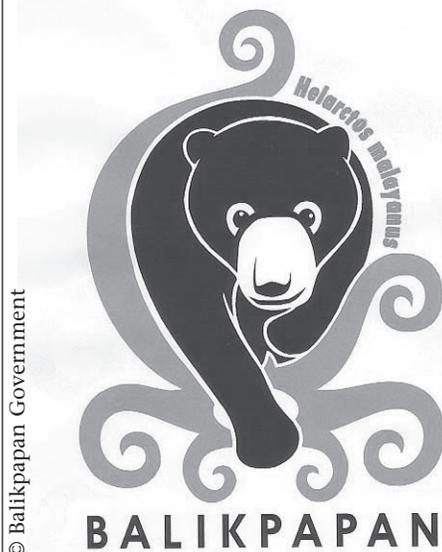
Thanks!

**A hearty round of applause and thanks to our anonymous donor for the 2002 contribution and for issuing this challenge!**



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## Research on Malayan Sun Bears in East Kalimantan



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In August 1997 I started my field work on Malayan sun bears (*Helarctos malayanus*) in a small reserve in East Kalimantan, Indonesia. At that time no field study had been conducted on sun bears anywhere in their range. I started with a large number of sign transects, collecting data on tree species with claw marks and other sign that was identifiable for someone who hadn't seen sun bear behavior in the wild. I set up phenology plots to monitor fruiting patterns in the forest and collected scats from bears, which at that time mainly contained seeds of large seeded fruit species. Coincidentally a supra annual mast fruiting event set in, during which many tree species fruit synchronously; ranging from wind dispersed Dipterocarpaceae species (the main timber tree family in Southeast Asia) to a large array of

succulent fruits, including species favored by humans like the durian and breadfruit. This mast fruiting season usually only lasts a couple of months followed by a long period without much fruiting. In my study site almost four years went by without fruits and finally, towards the end of 2001, another mast season occurred.

At the beginning of 1998, I was asked by the Indonesian Forestry Department to take care of a small sun bear cub that had been confiscated. During the course of 1998, I received two more cubs, which I also took into the forest and incorporated into the research project. The cubs were gradually reintroduced to the forest but initially slept in a large cage during the night. During the day we did behavioral observations and collected specimens of all food items, ranging from termites, beetle grubs, cockroaches, ants, and fruit species, over a period of three years. By the time the bears refused to enter the cage at night, they received radio collars and were located twice a week in the forest for close observations.

### Forest Fires

Unfortunately in 1997-1998 Indonesia was affected by the most extreme El Niño ever recorded and a severe drought lasting a year affected the region, causing favorable conditions for the worst ever forest fire. In a matter of months 5.2 million hectares of land, including approximately 2.5 million hectares of forest in the province of East Kalimantan, were damaged by the fires. The reserve I work in also caught fire and almost two months were spent on continuous fire fighting efforts, for which I hired more than 80 villagers. Eventually half the reserve was saved from the fires, and now it is the last patch of primary forest left in the entire coastal region of East

Kalimantan. It took another three years to extinguish the subsequent coal fires.

After these fires the focus of my PhD research became partially to study the effects of this environmental disaster on the ecology of the sun bears. Termites, ants and fruit tree distribution and mortality rates were studied in burned and unburned forest (showing that in some heavily affected areas up to 90% of trees >10 cm DBH had died after the fires), and sign transects were done (showing virtually no sun bear activity in burned areas). Overall it seems that sun bears, even three years after the fires, hardly enter the burned areas, partially due to a large decrease in food availability, partially possibly due to changed environmental conditions. Burned forest areas can reach daytime temperatures of over 50 degrees C, and a physical barrier has been formed by a thick wall of ferns which makes movement over the ground virtually impossible.

### Conflict with Farmers

After the forest fires, when large areas of habitat were lost for the sun bears, I started receiving many complaints from farmers living near the edge of the reserve that sun bears were raiding their crops. Interviews were conducted with a large number of farmers. In the worst areas, traps were set up and various methods were tried to guard crops from the bears. The main problem was the fact that bears would eat the growth shoot of adult coconut palm trees, after which the tree would die. These trees could be up to 40-50 years old and an important additional source of income for the farmers. We tried various methods of guarding these trees, including covering the lower two meters with metal plates, making it difficult for bears to climb up. This fortunately seemed to work

## Research on Malayan Sun Bears in East Kalimantan, cont'd.

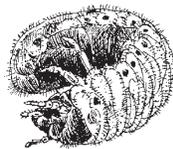
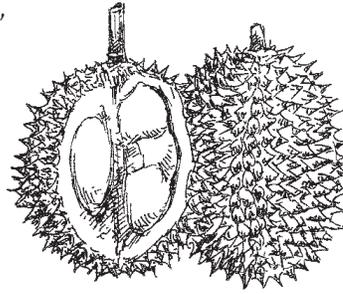
but few farmers were willing to invest in protecting their crops.

### Sun Bear Trapping

With the help of Dave Garshelis I started trapping wild sun bears. Initially we set up both locally made barrel traps as well as Aldrich foot snares (although the latter were later removed due to a very nasty ankle wound that a reintroduced bear received after being caught in the snare. It took more than a month to heal.). Catching a sun bear turned out to be much more difficult and energy consuming than anticipated. The trap line took about eight hours of hiking each day (in temperatures of >30 degrees C and humidity up to 99%), and only after more than 1,000 trap nights did we catch our first wild sun bear in July 1999. This was more than one year after the forest fires and it had been a period of extremely low food availability with no fruiting trees at all and bears wholly relying on insect matter for over a year. In addition there was increased food competition as new bears moved into the unburned forest areas after the fires. Not long after that a second bear was caught and fitted with a radio collar. Both bears caught were elder females with small cubs, despite having an extremely poor physical condition. Unfortunately after only one month of following the second female she was found swallowed by a seven meter python. It was subsequently monitored as the radio collar still functioned. A third bear captured in March 2000 was followed over a year when the breakaway device broke off far too early due to the fast decomposition rates in the tropical forest. Coordinates were taken three times a day of the wild bears and weekly 24-hour activity monitoring was carried out. Once a week areas were searched after coordinates were taken to look for fresh feeding sign.

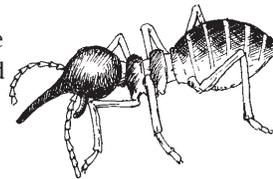
### Ecology of the Bears

Overall some 1250 scats were collected from all bears and it was found that the reintroduced bears were feeding on the same species as the wild bears. Between the mast seasons where fruit peaks in the diet, sun bears rely mostly on insects (primarily termites, beetle grubs, roaches, and ants. Very little other vegetable matter



is consumed, except occasionally the growth shoot and pith of small palms. Overall more than

3000 termite samples were collected and identified and sun bears were found to feed on some 50 different species, although heavily relying on a few species, and especially targeting reproductives (alates) when they are about to start swarming. Fruit is also an important part of the diet although there is a clear distinction between species that fruit asynchronously throughout the year and species that only fruit during the rare mast fruiting seasons. A large number of seed germination trials from scats were done and sun bears were found to be one of the most efficient seed dispersal agents in these tropical forests.



During the course of the study several Indonesian BSc and MSc students from a local university joined the project for several months of field work for their theses, as well as three MSc students from the Agricultural University of Ås, Norway.

### Sign Transects

Towards the end of 2001, I started doing more sign transects in other forest types throughout East Kalimantan, as I had done a large number of transects in my lowland forest study site and was now able to relate sign there to bear behavior. It also turned out that our knowledge of sign had increased dramatically due to the large number of observations we were able to do on the reintroduced bears. Limestone forest, lowland and hill dipterocarp forest were visited. During the next phase of the study I will be looking at altitudinal differences in sign and distribution of sign in peat swamp forests.

### Education and Awareness

During the course of my field work I established good working relationships with local NGOs and set up a number of environmental education programs with them in schools in the municipality (with more than 500,000 inhabitants). Funding was collected for several programs in primary and secondary schools, and children's magazines were produced with information on forest functions and sun bears. In addition a large array of other awareness materials were made including stickers, leaflets, t-shirts, music cassettes (with songs about the forest and bears), posters, comic books, and post cards. Eventually the sun bear became so popular that the local government decided to make the sun bear the mascot of the region (see image on page 5). The logo is now featured on identification cards, first day covers, and local government paraphernalia.

### Reserve Management

Additionally I put a large effort into initiating collaboration between various sectors (NGOs, local government, companies, etc.) starting in 1998 to set up an independent management body for the reserve. This finally succeeded after three years of meetings, public hearings, and awareness campaigns, and was made official in October 2001.

### Threats to Sun Bears

The primary threats that sun bears face in Indonesia is the rapid disappearance of habitat. This has become even worse in the last few years of political changes, when small scale logging activities have become rampant. In addition, forest fires, which are bound to happen again, have destroyed large

areas of lowland forest and also most of the lowland reserves. The tropical rainforest here takes many decades to recover after a single fire, but subsequent fires make regeneration virtually impossible and a wasteland is left behind. Currently sun bears are becoming more and more isolated in small forest patches, making them very vulnerable to local extinction. Due to large scale logging activities, vast numbers of sun bears end up in captivity, especially cubs, for which there are no holding facilities nor any management plans in Indonesia.

Overall the conservation situation in Indonesia looks bleak due to the fact that there is still a climate of over-exploitation, although people

are at present becoming more aware of the effects of deforestation.

During the rainy season cities are flooded, and during the dry season there is a shortage of water; landslides in denuded areas sweep away villages, etc. There are still quite good forest areas under logging concession licenses, but these are doomed to be denuded if no action is taken soon. At least the example from my study area has shown me that with a lot of effort positive changes can be made. The challenge is now to find enough people who are willing to do the same throughout the distribution range of this fascinating bear species.



## Super Volunteer Needed for Indonesia Sun Bear Work

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We are looking for a person who has experience with the design and building of bear enclosures, is interested in environmental education, likes the tropics, wants to learn a new language, is experienced in gathering funds, and is ready for challenges.

The Balikpapan municipality in East Kalimantan (Indonesian Borneo) has made the sun bear its new mascot (see page 5) and has decided that sun bears need to be confiscated from private owners, and wants the public to be able to see these bears and learn about them. The usual set up for public viewing of captive animals in Indonesia is far from educational, and the animals are kept in small cages in sad conditions. A huge challenge lies ahead in trying to break through this old-fashioned paradigm and trying to set up a sun bear enclosure that is both pleasant for the bears, and teaches the public about the ecology of the bears and the threats the species is facing. We are looking for a person who is capable, interested and has stamina to assist the local government and NGOs to set this up.

Anyone who is interested and would like to receive more information is invited to contact the address above. Please write if you have information on bear enclosures or other input you would like to share with us!

## Thailand Research Update

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Here is the latest exciting news from the research project on Asiatic black bear and sun bear feeding ecology and habitat use in Thailand:

1. Dry season research is over for this year. Fifty-three sign transects have been completed at three study sites, in two of the major forest types of mainland Southeast Asia: mixed deciduous forest and semi-evergreen forest.
2. Both species of bears are climbing many different tree species, particularly in the families Annonaceae, Lauraceae, Magnoliaceae and Fagaceae.
3. Bears are climbing many individual trees per hectare in both forest types—about 20 trees/ha in the more open mixed deciduous forests, and up to 35 trees/ha in denser semi-evergreen.
4. Very few scats of bears are found, and direct observations of bears are few and far between, so it is difficult to unequivocally link tree climbing to feeding on fruits of a particular tree species. However, patterns of correlations between claw mark age and tree fruiting/flowering phenology are emerging that suggest that many species are climbed for feeding on fruit.
5. I will return to two of the study sites this rainy season (August-October) to monitor tree climbing activity, and will attempt to observe bears feeding where ripening oak trees are concentrated.

## Polar Bear Research in Norway

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The Norwegian Polar Institute based in Tromsø has continued its research program on polar bears in Svalbard and the Barents Sea. The intent of the program is to provide baseline information on the status of the population. In addition, research on the population covers a wide range of topics including predator-prey relationships, space-use patterns, parasite and disease exposure, toxicology, and energetics. The main focus of research for the coming years will be a large project studying the relationships between polar bears and ringed seals in association with habitat use analyses using high-resolution satellite imagery and field investigations. The objective is to better understand the relationship between hunting success and climate related habitat parameters to determine possible impacts of climate change. Field trials of GPS satellite collars conducted in 2000 indicate that this technology has sufficiently matured to be a reliable research tool for polar bears.

The possible effects of pollutants on polar bears continues to be a priority area for research. There are clear indications that the immune system, endocrine system, and possibly survival and reproductive rates of polar bears in the Svalbard area are affected by pollution. Ongoing studies will assist with elucidating the nature of possible population level effects.

In spring 2002, the field research was conducted by myself and Magnus Andersen. The field program was severely hampered by an unusu-

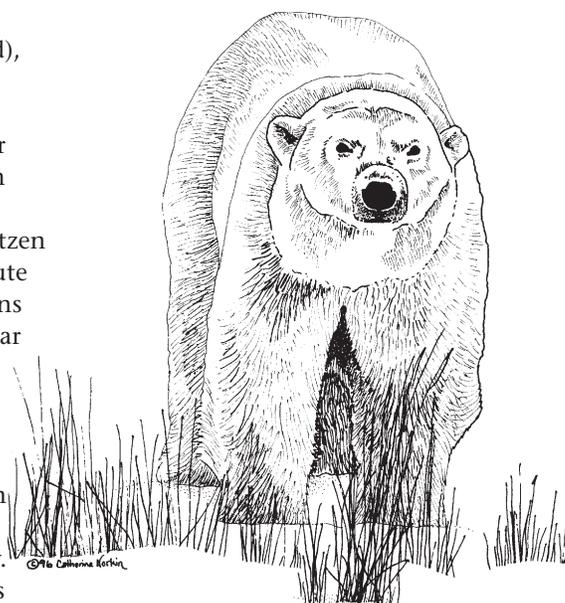
ally warm spring which brought heavy rains and southern storms that effectively destroyed the possibilities for field studies from the normal base at Hopen Island. On the plus side, we had the new Norwegian Minister of the Environment, Børge Brende, join us in the field for the capture of a polar bear on the east coast of Svalbard. It is not everyday that politicians are intrigued enough by research projects to join them in action so catching a bear on Halvmåneøya (Half-moon Island), center of the historic hunting grounds before polar bears were protected in 1973, bodes well for future conservation and research support.

In January 2002, Mette Mauritzen with the Norwegian Polar Institute completed her doctorate "Patterns and processes in female polar bear space-use" at the University of Oslo. Drs. Jon Swenson and Ian Stirling were the opponents. Dr. Mauritzen has now taken a permanent position as a research scientist with the Marine Research Institute, Bergen, Norway.

In the last year, three students completed their equivalent of a Masters degree working on pollution related issues at the Norwegian University of Science and Technology. Marte Haave's thesis was "Plasma progesterone and estradiol of female polar bears (*Ursus maritimus*) in relation to PCB levels and reproductive status," while Marte Braatens' was "Plasma thyroid levels in relation to PCB levels in polar bears at Svalbard," and Gro Harlaug Olsen's thesis was "PCB levels of female polar bears in the Barents Sea in relation to space use patterns."

After six years in Norway, I will be leaving the Norwegian Polar Institute and have accepted a position as a

professor in the Department of Biological Sciences at the University of Alberta, Edmonton, Canada. My plans are to continue an active program of research on polar bears. Magnus Andersen will continue to be actively involved in polar bear research in Norway so the program should not miss a beat.



## Polar Bear Scientist Position in Norway

### Qualifications

The Norwegian Polar Institute (NP) seeks a vertebrate population ecologist (PhD or equivalent) with a strong background in mammalian ecology and population biology to serve as NP's polar bear scientist. Advanced quantitative skills, a demonstrated ability to publish in journals of high international standing, and a demonstrated ability to access research funding are

important skills for this position. Practical arctic-based research experience and an ability to work within interdisciplinary research teams are additional desired skills.

### Tasks

This permanent, fulltime position includes responsibility for conducting field-based research programs in the arctic on polar bears. This work includes: planning, seeking financing, performing, analyzing, reporting, and doing administration for the research programs. These research activities are expected to result in an active publication record in peer-reviewed journals. Interactions with NP's management department, national wildlife management authorities, the media and the international polar bear research community are important.

### Title and Salary

Classification and salary will be based on qualifications. The position will be based at NP's Tromsø office, with the potential opportunity for terms spent at the Svalbard office.

For more information contact:

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or  
Lasse Lonnum  
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Applications must be received in full at the Norwegian Polar Institute, Polar Environmental Centre, 9296 Tromsø, Norway by August 31, 2002. Please include a full professional CV, a single copy of all publications, and identify three possible reference persons (with full addresses and contact information: phone, fax, email).

Information about NP can be found at: <http://www.npolar.no/>

## Alaska Bear Festival/Forum

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Virtually anywhere you live or visit in Alaska is bear country, a distinction few other states offer. This presents both an opportunity and a dilemma. On one hand, bears are the most valued species of wildlife in Alaska; both hunters and wildlife viewers are willing to pay more to hunt or see bears than any other species. On the other hand, every year in Alaska bears cause property damage and injure or, rarely, kill people. So how do we improve on the opportunities, yet minimize the threats? In other words, how can we best educate people to avoid conflicts with bears?

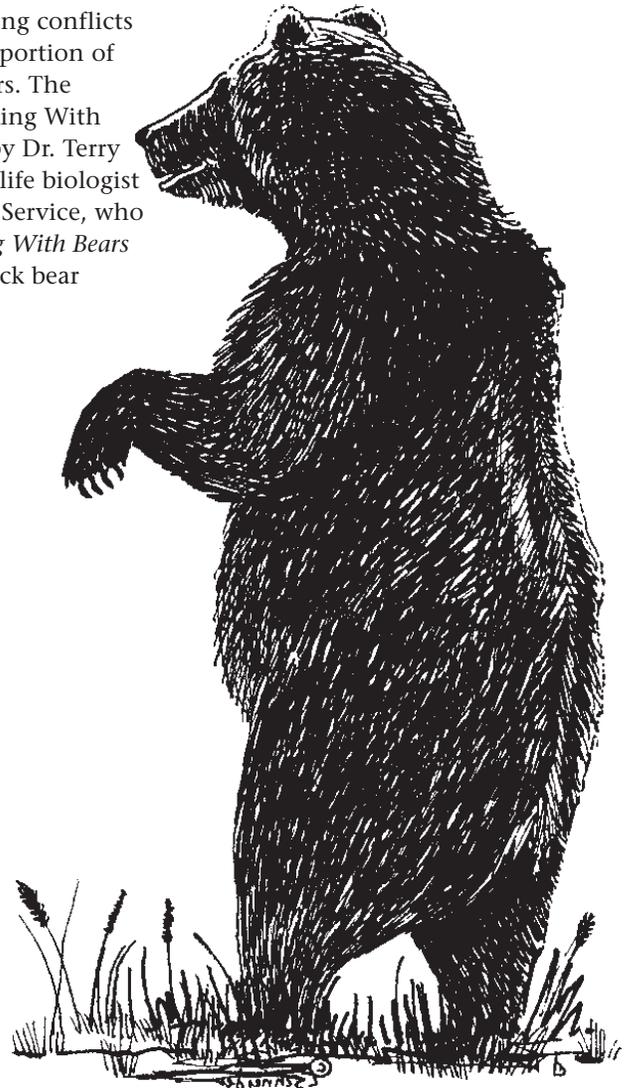
The answer to this important question for a number of Anchorage and Kenai Peninsula wildlife management agencies and non-profit conservation, hunting, fishing, tourism, and photography organizations is to reach out to the general public by sponsoring a festival. A festival, by implication, is less imposing to the public than a conference. The purpose of the Alaska Bear Festival is to inform the public in layman's terms about bear populations and habitat in Alaska, bear behavior, what can be done to avoid bear/human conflicts either in

the backcountry or where we live, and how to maximize our enjoyment and appreciation of Alaska's bears.

The Fourth Annual Alaska Bear Forum was held on April 13, 2002 at the Loussac Library in Anchorage, cosponsored by 25 agencies and organizations. (This year, since we didn't have any children's activities, we called it a forum.) A number of local bear experts gave presentations on bears and bear safety. The event was used to kick-off the "Living with Wildlife in Anchorage" plan, a multi-agency planning effort to enhance the benefits of wildlife to the community while minimizing conflicts with humans. A major portion of this plan addresses bears. The keynote address, "Walking With Bears," was presented by Dr. Terry DeBruyn, regional wildlife biologist with the National Park Service, who wrote the book *Walking With Bears* about his American black bear research.

More than 200 people attended some portion of the event this year. Extensive coverage by newspapers and television stations helped further spread the message that spring is on its way and in Alaska and that means both black and brown bears will soon be roaming our neighborhoods and nearby parks. Newspaper articles detailed what people should do to avoid problems.

Next year, there will be a similar event, but probably in some community outside of Anchorage. If interested in the next festival/forum, contact the address above.



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## Northeast USA

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## West Virginia

In 1999, West Virginia's Division of Natural Resources (DNR) began a study of American black bear populations in four south-central counties (Boone, Fayette, Kanawha and Raleigh). The main objectives were to collect data on survival, reproduction, abundance, and closely study bears exhibiting nuisance behavior. More than 320 bears have been captured, of which 74 were fitted with a radio-transmitter. One-third of the radio transmitters were abdominal implants.

In 2002, West Virginia will expand its bear firearms season in five south-central counties, which include the four primary study counties. The regulation change is intended to increase harvest and hopefully reduce nuisance complaints that now average over 600 annually in the study area. Biologists working on the study hope to learn more about how increasing hunting pressure can affect harvest rates of known nuisance bears and the overall level of nuisance complaints.

The season will include three days during the first week of November and an additional week concurrent with the first week of deer (buck) firearms season. These two periods will be in addition to the traditional three-week December season. Dogs can be used to hunt bears during the traditional December season. They will also be permitted in the new three-day November season, but not in the week concurrent with deer hunting.

Statewide bear harvests have averaged 1,161 during the last four years. In the 2001 season, 1,253 bears were harvested. Questions about the study can be directed to Tom Dotson with the West Virginia DNR at (304) 675-0871 or [tdotson@dnr.state.wv.us](mailto:tdotson@dnr.state.wv.us).

## Virginia

The final draft of the Virginia [American] Black Bear Management Plan is now available on the internet at: [http://www.dgif.state.va.us/hunting/va\\_game\\_wildlife/management\\_plans/bear/index.html](http://www.dgif.state.va.us/hunting/va_game_wildlife/management_plans/bear/index.html). The plan was a cooperative effort of the Virginia Department of Game and Inland Fisheries, Virginia Polytechnic Institute and State University, and a 17-member Stakeholder Advisory Committee that represented conservation agencies, hunters, bee-keepers, orchardists and other farmers or farm organizations, a national park, and a large corporate land owner. The final draft is a product of more than two years' work. Questions about the plan may be directed to either Dennis Martin (540) 248-9360 or Dave Steffen (540) 857-7704.

## Eastern Black Bear Workshop

New York and New Jersey are co-hosting the 17th Eastern Black Bear Workshop to be held at the Wyndham Gardens Hotel and Conference Center March 2-5, 2003 in Mount Olive, New Jersey. (See page 23.) For additional information, contact Kelcey Burgess with the New Jersey Division of Fish and Wildlife at (908) 735-8793.

## Northeastern Black Bear Technical Committee

The Northeastern Black Bear Technical Committee (NEBBTC) held its first meeting in July 2002 in Patten, Maine. NEBBTC was formed under the auspices of the Northeast Wildlife Administrators Association (NEWAA) to discuss management and research needs of American black bears in the northeast. It is comprised of representatives from all states and provinces within the region, and is authorized to meet biennially in alternate years from the Eastern Black Bear Workshop.

The NEBBTC's formation was spurred by continued conflicts between bears and humans in the northeast region. Some of the tasks initially asked of the group by NEWAA include reviewing state and provincial protocols for handling nuisance bears, recommending best management practices for addressing bear conflicts, and evaluating aversive conditioning techniques. Stay tuned as the group begins to tackle these important tasks, which may be useful to managers throughout the black bear's range.

## Barren-ground Grizzly Bear Study Update

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Barren-ground grizzly bears exist at low density on the tundra in the Northwest Territories (NWT) and their status is considered “sensitive” after a recent species-at-risk assessment in the NWT. As such, there is concern about any increase in human presence that might impact their numbers. Economic activity in the central Arctic of the NWT increased dramatically in the early 1990s with the discovery of diamonds. Presently there are two diamond mines and numerous base-metal, gold, and other diamond developments in the region. As the economic potential for the area increases, the need for additional infrastructure also increases.

Construction of haul roads to service this need contributes to the cumulative effects of economic development. However, it is unclear what impact this activity will have on wildlife, especially grizzly bears.

To address this shortfall, we deployed GPS radio-collars (Televilt, Lindsberg, Sweden) on adult female grizzly bears in the Ekati™ diamond mine (BHP Billiton Diamonds Inc.) area beginning in spring 2000. We chose this area because ore haul roads that service the mine were being built or were about to be. Thus, we have a good opportunity to examine bear movements before, during, and after road construction and provide insight into how



resident bears respond to habitat perturbation, linear disturbances, and traffic volumes. We selected adult females because they were more likely to be resident to the area than males. While males may also be susceptible to haul roads, resident females with their smaller range, would likely encounter the roads more often.

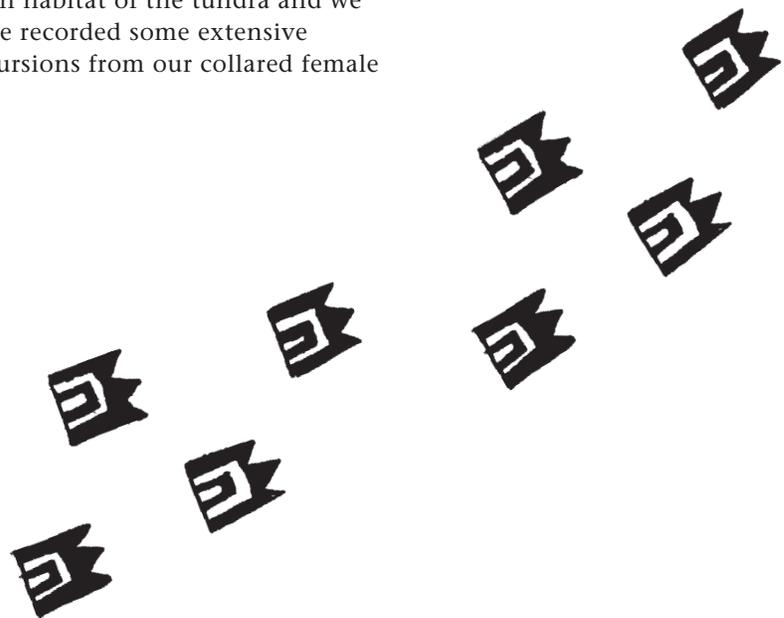
We are collaborating with Drs. Mark Boyce and Chris Johnson at the University of Alberta, and BHP Billiton Diamonds Inc. and nearby Diavik Diamond Mines Inc. to deploy these collars and analyze their movements. We are now in our third season of data collection and currently monitoring six female bears within a 40 km radius of the Ekati™ mine. These collars are programmed to store a location every hour. Coupling these movements with LANDSAT Thematic Mapper data will improve our understanding of how bears use available habitat in the central arctic. We expect to identify possible mitigation strategies should conflicts occur and to help predict impacts of future development.

The collars will remain on the bears through to October 2002 when a pre-set release mechanism on the collar will activate and the collar will drop off the bear. We can then locate the collar with its VHF beacon to retrieve the data. This procedure is risky because we have to physically extract the stored locations from the collars. Therefore, if we cannot find the bears we will likely lose the data. To reduce

the risk, we opted for a programming feature in the collar to remotely retrieve stored locations each month. By flying within several kilometers from the collared bear at a pre-set time, we can download the GPS locations since our last contact.

So far our GPS fix-success rates have been high (85%-90%) in the open habitat of the tundra and we have recorded some extensive excursions from our collared female

bears (rivaling those of some sub-adult males from a previous study). Our data downloads so far for 2002 have been equally impressive and we have reported some of our initial results on our website [www.nwtwildlife.rwed.gov.nt.ca](http://www.nwtwildlife.rwed.gov.nt.ca).



## Help IBA Meet the Challenge!!!

**IBA has received a \$10,000 challenge grant. Each dollar you donate by December 31, 2002 will be matched. The money you contribute to IBA can be doubled for a total of \$20,000! We need your donation now to help fund bear conservation projects!**

**Make your donation NOW.  
Use the form on page 25.**

## Join Ursid Reproduction Study



© Wayne Lynch

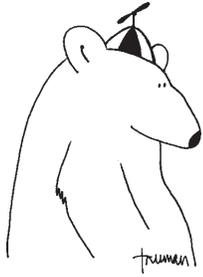
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I am a research scientist from the Center for the Reproduction of Endangered Species at the San Diego Zoo. My research project is part of a collaborative effort between the Zoological Society of San Diego and the University of California San Diego to study the reproductive physiology and endocrinology of both American black and brown bears. Very little is known about the biologic mechanisms of reproduction in any bear species, and it is my intention to apply what we learn from the non-endangered black bears and brown bears, to the other bear

species, most of which are endangered. Our research efforts would benefit from collaboration with your state park system and/or institution. Specifically, we would like to obtain the testes (with intact epididymides) of male black or brown bears and the entire reproductive tract (ovaries and uterus) from female bears killed within your park system (i.e. hunter killed, etc.). We would provide the necessary training, materials for tissue collection and storage, and provide a FEDEX number for shipping to San Diego. Alternatively, we would visit your location and with your assistance, collect the tissues ourselves.

The collection of these reproductive tissues will aid in fulfilling a number of our research goals. First of all, we seek to develop methods for retrieving bear sperm and eggs from

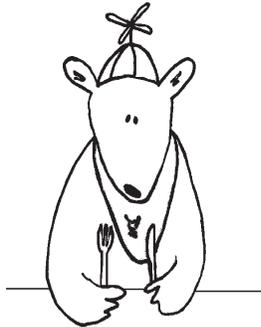
gonadal tissue after death, and optimizing methods for preserving them by freezing and also for use in assisted reproductive techniques like artificial insemination and in vitro fertilization. Such methods would be a great tool for improving captive breeding of endangered bear species like the giant panda, sun bear, sloth bear and spectacled bear. Secondly, we wish to study the reproductive tracts of adult female bears collected from September-late January, in order to learn more about the implantation stage of pregnancy in bears as well as what happens to the uterus of females that are pseudopregnant. These data will greatly expand the overall knowledge of reproduction in bears. The information that you and your institution help us to obtain will profoundly contribute to the management and conservation of not only the American black bear and brown bear, but also indirectly that of the other six bear species of the world, which are currently listed by CITES as endangered or threatened. We hope that you will decide to participate in this exciting study and we look forward to hearing from you. I would be happy to answer any questions you may have. Please contact me if you would be interested in participating in our research study of the reproductive physiology of bears.



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## Student List Serve in Temporary Hibernation

Due to summer field work, the Student List Serve appears to have gone into an early state of hibernation. Only five students have responded so far, but we'll give the list serve one year to see if it will be an effective tool for serving IBA students. The list serve remains open, so students are encouraged to submit questions and comments. Email me for instructions on how to access the list serve.



## IBA Student Breakfast

By the time you receive this newsletter, students will have participated in our first official IBA student gathering in Norway; with the much appreciated help of Andreas Zedrosser, our Norwegian counterpart. The IBA is sponsoring a special breakfast for students in order to give us an official headstart. We'll give you an update in the next newsletter!

## To Be or Not to Be...a Bad Rabbit

I don't think I've ever quite figured out why Chuck Jonkel, of the infamous Border Grizzly Project (BGP), called them "Bad Rabbits," but the name stuck. It was an exclusive title of reputation, similar to "Green Berets" or "Hell's Angels," and was only given to the cluster of Chuck's graduate students that were working on bears in Montana back in the 1980s. Because I had not yet earned the right to enter into Bad Rabbit-dom when I arrived at the BGP as an undergraduate, I was immediately and naturally categorized as a subordinate "Bear Groupie." My job was to simply open the stacks of Chuck's mail from previous years, be the errand girl, and if I was lucky, sit at the table of wisdom and listen to Bad Rabbit stories like a kid on the floor at a book reading. Every now and then, I was charged with going out into the field to fill my backpack with bear scat, or to go out and collect road kills to feed the BGP's captive bears. I carried that honor with great weight. As I earned Bad Rabbit badges, I graduated to getting to tag along on Bad Rabbit trapping ventures, and even got to witness my first grizzly bear capture while I worked as a field technician on the Cabinet-Yaak bear study. I watched in amazement as these Bad Rabbits overcame spontaneous challenges, taught me their trade, corrected me when I needed it, and encouraged me to follow my own dreams. I often wonder how many of those Bad Rabbits knew that they were being watched, and what an effect they have had on my life since.

While you have all been obsessed with simply trying to make it through your own graduate projects, someone is watching you. At the same time, you are probably challenged with the task of supervision

for your own field workers. During my 10 years of working with the bears in Mexico as both a Masters and PhD student, I supervised more than 15 different field workers. There were times when the team clicked together so smoothly, I thought everyone was an angel sent from heaven. Other times I felt like those same helpers were the reincarnated children of Jack the Ripper, and I wanted to fire them all and do the field work myself! It was good for me to walk in the shoes of my good Bad Rabbit friends, who actually did threaten to choke me on numerous occasions during my tutelage. I am grateful for their patience. It helped me get to where I am today, providing you with insight that will help you become somewhat of a Bad Rabbit someday. Here's what I learned from my experiences:

### 1. Define your objectives.

Once you define your own goals and objectives for your project, then you can be clear about the assigned tasks for each worker. Be very specific with your helpers about what you expect, and how you would like to accomplish these objectives as a team. People are more motivated when they understand what you are trying to accomplish, and how important their role is in meeting project goals.

### 2. Take your pick.

If you get to choose your own workers, decide what qualities you need in a helper. Don't get too specific, because you'll exclude people that may have a lot of potential, but just need the dust blown off. Some characteristics, however, can be very costly to you and your project, so be careful.

- Make sure your helpers are willing to follow someone else's vision for a while. Avoid those who refuse to work along with the team

## To Be or Not to Be...a Bad Rabbit, cont'd.

and insist on doing things for their own personal gain.

- The best field worker in the world is the one with a *strong work ethic* and is *teachable*. Enough said.
- Bad habits in someone's personal life will likely persist on the job. If you notice that someone tells lies at home, be warned—you may not want to trust them with your data sheets.
- Prudence is critical, especially on bear projects. Your project will have no room for the Evel Knievel's of the world, especially when lives are at stake. Stay away from people who do stupid things.
- Hire people who can obey the rules. Rebellion has its place, like in oppressed countries, but not on your project. You'll spend more time cleaning up after those who undermine you than you will in getting your work done.
- Avoid gossips and people who have a tendency to stir up strife. It will disrupt your project, and make your life miserable.

### 3. Lay down the rules.

If you are the supervisor, then you call the shots. It's as simple as that. A true leader *leads by example*, however, so be willing to live by your own rules. Determine what is acceptable and what is not, and be clear about it from the beginning. Your workers can't read your mind, and you aren't doing anyone any favors if you make assumptions about their standards. Some people actually think it's *OK* to lie and cheat. It's much easier to lay down hard rules at the beginning and loosen up, than to try to implement loose rules and try to tighten things up after you realize that your workers need some boundaries.

### 4. Be clear.

Don't ever assume that your workers know how to do their tasks exactly the way you want them

done. Walk your helpers through their tasks until they feel comfortable enough to do them on their own. Then, be sure to check on them occasionally to see how they are doing. Spend time with them in the field, and be sure to find reasons to encourage them for a job well-done. This is a simple trait of a good mentor. A wise saying of the world's most successful managers is "it's not what you expect, but what you inspect" that produces effectiveness. My best experiences as a Bear Groupie were with those mentors who followed that philosophy. Throughout the rest of my student career, I was just confused.

### 5. Draw the line.

Don't be shy when it comes to drawing the line. Most of us need boundaries, and people who were able to be up front with me were the one's who helped *me* to straighten up when I was a Bear Groupie. Here are some examples:

- There are excuses, and then there are reasons. Reasons are occasional, but excuses are repetitive. Be sure you can tell the difference, and confront excuses on the spot.
- Workers' personal problems should not be carried onto the project, but sometimes it can't be helped. Be willing to work with your team members, but don't let it get to the point where the project schedule is centered around theirs. Avoid "high maintenance" people. The same goes for your own personal life—keep it from affecting your workers or they'll get tired of it and look for another job.
- Keep the work load balanced. Give workers time to tend to their families. Don't let you or your team suffer from "burn out" or productivity will decrease dramatically.
- Help people help themselves, but don't do it for them. They may need

more help at the beginning, but should soon be able to stand on their own two feet. This will help them lead their own projects someday.

- Keep the work ethic alive on your project, but don't compete with your helpers. Motivate your workers by willingly giving them credit and recognition for their contributions. It will build a stronger project, which will make *you* look good in the end.
- Walk, don't push or manipulate, your workers through trouble spots. Making someone feel stupid will only make you look insecure, and will not give your workers any reason to be loyal to your goals.
- Think things through, make a decision, and stick with it. As a worker, there is nothing worse than following a leader who doesn't know where they're going. Double-mindedness can be a terrible disease if it becomes a habit.

### 6. Don't awfulize.

There *will* be times that will make you think you've awakened to a living nightmare, so just be realistic. We all make mistakes, we all make bad decisions, and we all get caught off guard sometimes when it comes to working with other people. Give people the benefit of the doubt, but also know when it is time to say "enough." The key is to learn from any conflicts you might have with some of your workers, *change* what you need to change, try to avoid making the same mistake, and move on. One day then, you really will wake up having made it through your project, and probably just as well as the rest of the Bad Rabbits.

I hope this helps.

By the way, Bad Rabbits, Happy 27th Birthday.

And, oh yeah...thanks.



## An Anthropologist's Bear Story

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Archaeologists who do field research in bear country have a rich lore of bear stories that are told and retold. This is my story about an encounter with a grizzly sow and two cubs along the Skeena River in northern British Columbia. But to understand my story, you have to hear another one first (this is how bear lore, or any lore, works)

When I was in graduate school, I had friends who were doing site surveys (they were locating archaeological sites and mapping them) on Alaska's North Slope. When they came back at the end of one summer, they told about being stalked every day, all day, by an arctic grizzly. Some days, the grizzly followed them closely, on others, he kept his distance.

This puzzled them until they realized he stayed farther away on days they carried shotguns, rifles or shovels—they figured he knew long guns, but not the difference between a gun and a shovel—and he came in close, sometimes very close, on days when they carried only pistols. They never went unarmed. After they figured this out, they always carried a rifle and a shotgun. The archaeologists and the bear all survived the summer

Several summers later, in 1971, another archaeologist and I were surveying for sites along the north bank of the Skeena River. We were unarmed, but we did carry shovels.

One beautiful morning, we were hiking along the Canadian National Railroad tracks, chatting quietly about a protracted beer distributor's strike that had dried up every pub in British Columbia and made an unusually hot and dry summer even more so. We had a long way to go and were not paying much attention to the forest around us.

A noise behind us woke us out of our talk of beer and heat. We turned around to see a grizzly cub crossing the tracks. We cursed and turned back in time to watch the sow rise up on her hind feet perhaps 15 feet in front of us. She was very big. She looked at us. Another noise behind us announced the second cub leaving the bushes and crossing the tracks.

"You're in charge," hissed Dave, my survey partner, "What do we do?"

We were between a grizzly sow and her cubs, too close to her to run away; if she charged we might not even have time to get our packs off to throw at her. They had food in them and might possibly distract her long enough for us to run somewhere. I remembered the arctic grizzly story.

"Point your shovel at her." I hissed back.

"You're kidding me," he said, "that's the stupidest thing I've ever heard."

He wanted to argue the point. Since I was in charge, the bear was my fault. But time was pressing.

"Do it!" I ordered.

We swung our long-handled shovels up in unison and pointed them at her. We stood there, aiming down our handles, waiting. She too was motionless.

She contemplated us a bit longer, and then slowly dropped down and ambled across the tracks disappearing into the salal and alder thicket.

We could hear her and the cubs moving away from us down towards the river. We walked rapidly and silently away until we were a safe distance, then sat down on the railroad tracks and shook.

I don't know what we would have done had she charged, perhaps turned the shovels around and beat her with the blades. Why didn't she charge? In talking it over, Dave and I decided there were two possible reasons: she actually thought the shovels were rifles and that we were too dangerous to attack. But more likely in our opinion, she decided any humans who pointed shovels at a grizzly sow posed no threat to her cubs.

She may have been laughing too hard to charge. We had to go unarmed for the rest of the summer, unarmed but much more alert and careful, and always with shovels.

## Kermode Bears: From Mutation to Management

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[See February 2002 newsletter, "Kermode Bears: From Myth to Mutation."]

We are living in a time that might be characterized as the "Age of the Genome." We don't need to go far to see proof: genetic themes dominate our popular culture in newspapers, magazines, movies, books, and even art shows. Policy-makers and scientists debate the ramifications of human cloning and the uses of embryonic stem cells. The Human Genome Project delivers regular reports on newly found disease genes, while we wonder if we should be concerned about genetically modified organisms in our environment.

Increasingly, genetic methods are applied to novel fields of study. Yet, in recognizing the importance of genetics, it is necessary to provide a proper contextual framework. Genes, and the organisms they define, are intricately interwoven with their environment. As stated by Brian Bowen, "...preservation of any one of these objects [genes, species, or ecosystems] alone is futile it is about protecting a process: life" (1999).

So how do we go about defining this process—life—with the ecological and genetic tools at hand? A starting point has been with "genetic" based interpretations of an Evolutionary Significant Unit (ESU), such as those introduced by Robin Waples, Craig Moritz and others. Waples suggested a two-tiered approach based upon significant reproductive isolation and a distinct evolutionary history; Moritz added that ESUs should be reciprocally monophyletic and exhibit significant

nuclear DNA differences. Since then, others have advocated a more comprehensive view, combining past evolutionary significance (phylogenetics), maintaining current ecological life-processes (ecology), and preserving future adaptive potential (evolution; see Bowen 1999, DeWeerd 2002). Many challenges, however, lie ahead: how much is *significant*? What is adaptive potential, and how do we know in what direction future evolution may go? What happens if some of these guidelines conflict with each other?

The genetics and ecology of the Kermode bear, the white-coated American black bear, illustrate the difficulties inherent in trying to determine ESUs or Management Units (MUs) for species. In two papers, Ritland and Marshall (2001, 2002) looked at the population structure of Kermode bears with respect to an inherited allelic variant at the *mc1r* locus leading to their whitish coat color, and a comprehensive analysis of the microsatellite population structure of island and mainland *Ursus americanus kermodei* populations. In their first paper, they concluded that the heterozygotic deviations from Hardy-Weinberg Equilibrium were most likely a result of assortative mating—that is, bears of the same color preferentially mated. If this is true, they reasoned, management practices should be aimed at minimizing cross-water gene flow from populations with the dominant black allele.

But is assortative mating the most likely answer, or are there other alternatives? Since there are a

number of bears with one black and one white allele, one can assume that non-assortative matings do occur with reasonable frequency. Interestingly, two of the islands with the highest frequency of kermodism (Gribbell,  $G=0.56$  and Princess Royal,  $G=0.33$ ) are in close geographic proximity to areas with the lowest frequency of the white allele (Hawkesbury,  $G=0.05$  and East of Princess Royal,  $G=0.00$ ). It seems plausible that migrants (particularly in one direction) could skew *mc1r* allele frequencies. Unfortunately, the researchers did not include gender ascertainment in their analyses, which may have provided further insights into the *mc1r* inheritance pattern.

Is assortative mating actually observed in the Kermode bear? According to British Columbia bear biologist Tony Hamilton, mating season is pretty much a free-for-all: bears are in the water, bears are in the trees, and multiple males have access to females. In short, it looks like bear breeding as usual. Also, he has observed black and white cubs in the same litter, which could be due to mixed paternity, a black heterozygote mating with a white homozygote, or a black/black heterozygotic mating. Also, what is the significance of departure from Hardy-Weinberg equilibrium?

In general, it means that something in the population is not constant. A population is said to be in Hardy-Weinberg equilibrium if the following assumptions are met: infinite population size; no movement of individuals from population to population; no mutations producing new alleles; random mating; all genotypes have equal fitness. If this seems reminiscent of assumptions made for geographic closure models, it is because there are similarities! Assortative mating could be one explanation for the observed heterozygotic deficiency, but clearly, other potential hypotheses need to be tested before making management recommendations based on the inheritance of a variant allele. It is possible that Kermode bears could fit the criteria for an ESU or a MU.

They are part of the coastal (or western) lineage of American black bears, which is considered significantly divergent from the continental lineage. Thus far though, these two haplotypes are not managed as separate units in other parts of their range. The white bears would likely have support as a species important

to our "bioheritage," due to their unique coloration. It is unclear if the white fur confers a selective advantage or disadvantage, although it is possible it once did. Ecologically, *U. a. kermodei* is an important consumer of salmon and resident of old growth forests, and certainly fills an important niche on the fringes of bear habitat (T. Hamilton). Island populations of spp. *kermodei* do show some evidence of intraspecific population structuring, as reflected by microsatellite data and *Fst* values. However, if their genomic diversity and therefore, adaptive potential, is dependant on gene flow from other islands or the British Columbia mainland, it could be deleterious to restrict the access of mainland black bears. Ultimately, it is important to remember that the genetic diversity we seek to protect may or may not be visible as morphological variation. Aristotle once wrote, "Nature operates in the shortest way possible"—useful information in the Age of the Genome.

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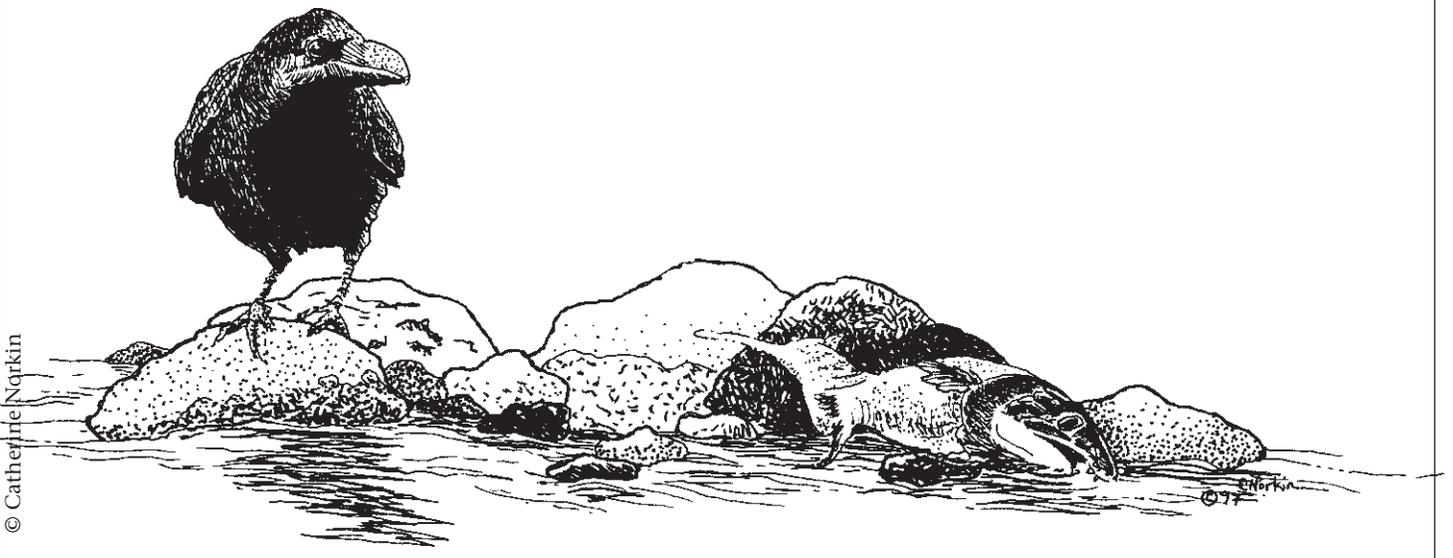
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## Book Review: *Living in Harmony with Bears*

By Derek Stonorov.  
2002. Audubon Alaska. 32 pp.  
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The challenge in producing outreach material that seeks to educate the general public about bears and to provide advice on reducing conflicts between people and bears is that, while most bear biologists agree on about 90-95% of the message, the focus is often on the other 5-10%. The Alaska State Office of the National Audubon Society has succeeded admirably in producing a revised version of this booklet that both provides a great deal of background information on bear ecology and behavior, and avoids any stumbles in the areas such as advice on how to respond to bear attacks.

While the title of the booklet could imply that it is intended for any audience, the content is directed specifically to bears in Alaska and includes information on American black bears, grizzly bears and, to a limited extent, polar bears. The booklet is illustrated throughout with line drawings of bears and people that emphasize the topics being addressed in the text. The drawings, when combined with the short paragraphs, each of which starts with a summary sentence in bold, make the document very easy and engaging to read.

The booklet begins with a foreword setting the stage for the challenges involved in conserving bears and their habitat in Alaska, as well as the history of human interactions and attitudes towards bears in the state. One minor issue I noted in the foreword is the statement that "certain bears may be unpredictable"

while later under the "Bear Behavior" section emphasis is placed on the idea that bears are in fact predictable. I support the recent trend toward challenging the idea that bears are unpredictable and would recommend a minor revision of the foreword.

Following this introduction, the booklet is divided into four general components: bear behavior and ecology; advice on avoiding and responding to conflicts with bears; information on bear watching and management; and summaries of bear issues in each region of the state. The bear behavior and ecology component includes an excellent series of sections on species identification, a description of a typical "year in the life" and bear behavior and communication.

The next series of sections includes safety in bear country, response to bear attacks, safety tips for hunters and management of attractants such as food and garbage. In my opinion the section on pepper spray, while it included some important messages such as the potential of creating a false sense of security and improper use, should have been more positive and should have strongly encouraged people travelling in bear country to carry it. I would also recommend going further in terms of comparing the safety of responding to aggressive encounters with pepper spray as opposed to firearms.

The two sections on watching bears and managing bears make up the third and smallest component of the booklet. The viewing section provides a good summary of responsible practices as well as a description of areas in the state with supervised programs. The management section is relatively brief but provides a good overview of the issues as well as a

rationale for taking proactive steps to conserve bears in Alaska while populations remain healthy in most areas. The statement that bears are umbrella species and that managing habitat for them will protect adequate habitat for other species is somewhat overstated but this is a minor detail.

The fourth and final major component of the booklet deals with the issues surrounding bears and people in all of the regions in the state: Kenai, Kodiak, Anchorage, Southwest Alaska, Interior Alaska, Northern and Western Alaska and Southeast Alaska. The last section of the booklet is a short list of additional resources including both books and videos.

Overall in a booklet that covers such a wide range of topics, I found that I had very few comments and these were invariably quite minor. *Living in Harmony in Bears* is an excellent resource that combines a great deal of information with an excellent layout and writing style that should be easily understood by the general public. I recommend the booklet to individuals interested in bear education and outreach in Alaska as well as to those looking for a template to develop similar materials in other areas.

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## Recent Publications from Norway

Derocher, A.E., Wiig, Ø., and Andersen, M. 2002. Diet composition of polar bears in Svalbard and the western Barents Sea. *Polar Biology*. 225: 448-452.

Derocher, A.E., and Wiig, Ø. 2002. Postnatal growth in body length and mass of polar bears (*Ursus maritimus*) at Svalbard. *Journal of Zoology* (London). 256: 343-349.

Lie, E., Bernhoft, A., Riget, F., Belikov, S.E., Boltunov, A.N., Derocher, A.E., Garner, G.W., Wiig, Ø. and Skaare, J.U. 2002. Geographical distribution of organochlorine pesticides (OCPs) in polar bears (*Ursus maritimus*) in the Norwegian and Russian Arctic. *Science of the Total Environment*. in press.

Tryland, M., Derocher, A.E., Brun, E., Kierulf, P., Arnemo, J.A., Wiig, Ø., and Ølberg, R.A. 2002. Plasma chemistry in free-ranging polar bears. *Journal of Wildlife Diseases*. In press.

Mauritzen, M., Derocher, A.E., Wiig, Ø., Belikov, S.E., Boltunov, A., and Garner, G.W. 2002. Using satellite telemetry to define spatial population structure in polar bears in the Norwegian and western Russian arctic. *Journal of Applied Ecology*. 39: 79-90.

Henriksen, E.O., Wiig, Ø., Skaare, J.U., Gabrielsen, G.W., and Derocher, A.E. 2001. Monitoring PCBs in polar bears: lessons learned from Svalbard. *Journal of Environmental Monitoring*. 3: 493-498.

Mauritzen, M., Derocher, A.E., and Wiig, Ø. 2001. Space-use strategies of female polar bears in a dynamic sea ice habitat. *Canadian Journal of Zoology*. 79: 1704-1713.

Tryland, M., Derocher, A.E., Wiig, Ø., and Godfroid, J. 2001. *Brucella* sp. antibodies in polar bears from Svalbard and the Barents Sea. *Journal of Wildlife Diseases*. 37: 523-531.

Wiig, Ø. and Derocher, A.E. 2001. Body composition of three polar bear

(*Ursus maritimus*) cubs found dead at Svalbard. *Polar Biology*. 24: 383-385.

Skaare, J.U., Bernhoft, A., Wiig, Ø., Norum, K.R., Eide, D.M., and Derocher, A.E. 2001. Relationships between plasma levels of organochlorines, retinol and thyroid hormones from polar bears (*Ursus maritimus*) at Svalbard. *Journal of Toxicology and Environmental Health*. 62: 227-241.

Andersen, M., Lie, E., Derocher, A.E., Belikov, S.E., Bernhoft, A., Boltunov, A., Garner, G.W., Skaare, J.U., and Wiig, Ø. 2001. Geographic variation of PCB congeners in polar bears (*Ursus maritimus*) from Svalbard east to the Chukchi Sea. *Polar Biology*. 24: 231-238.

## Black Bear Trade

### *In the Black Status, Management and Trade of the American Black Bear (Ursus americanus) in North America*

April 2002

By Douglas F. Williamson

TRAFFIC North America  
World Wildlife Fund  
1250 24th Street NW  
Washington, D.C. 20037, USA  
Phone (202) 293-4800  
Fax (202) 775-8287  
Email tna@wwfus.org  
Website www.traffic.org

A 160 page report including:

- Status of the American black bear in the United States and Canada.
- Black bear management in the United States and Canada.
- The American black bear trade.
- Poaching, law enforcement, and penalties.
- Recommendations.

## New AndígenA Website



Denis Alexander Torres  
Fundación AndígenA  
Apdo. Postal 210  
Mérida 5101-A, Estado Mérida  
Venezuela  
Email fundacion\_andigena@yahoo.com  
Website www.estudiopro.com/andigena

We want to invite to all of you to visit our new website:  
[www.estudiopro.com/andigena](http://www.estudiopro.com/andigena).

Our website seeks to inform people interested in the conservation of Venezuela's Andean Region, including:

—Internal search of the site to locate quickly any information related to the projects and activities carried out by the foundation,

—A series of virtual postcards of the foundation with beautiful images of Venezuelan biodiversity,

—A survey of the Sierra Nevada National Park, to help us measure how important this area is as a tourist destination,

—A section to download files about our institutional projects (pamphlets, educational material, etc.).

—A visitors' book, where you can leave us your comments about the website and AndígenA's activities.

The new website has been made possible thanks to the valuable support of EstudioPro ([www.estudiopro.com](http://www.estudiopro.com)), an internet services company very interested in promoting educational initiatives in Venezuela.

© Denis Torres

# Events

## Mountain Caribou in 21st Century Ecosystems

**October 16-18, 2002  
Revelstoke, B.C., Canada**

The Columbia Mountains Institute of Applied Ecology will host this three-day conference focussing on the ecology and management of mountain caribou. Mountain caribou are an ecotype of woodland caribou living in the snowy mountains of southeastern British Columbia, and a red-listed species. Cost for conference including field trip: \$255.00 (Canadian funds). Contact: Columbia Mountains Institute of Applied Ecology  
Box 2568  
Revelstoke, B.C. V0E 2S0, Canada  
Phone (250) 837-9311  
Fax (250) 837-4223  
Email [cmi@revelstoke.net](mailto:cmi@revelstoke.net)  
Website [www.cmiae.org](http://www.cmiae.org)

## Second International Bear Symposium

**October 21-25, 2002  
Moscow, Russia**

Bear biology, population, behavior, including bear-human problems and hunting management. Contact: Kurilov Nikolai Alexeevich  
Phone 7-095-459-0912  
Fax 452 5674  
Email [ruhunt@orc.ru](mailto:ruhunt@orc.ru)

## IBA Conferences

15th International Conference  
November 2003  
Dehradun, India

16th International Conference  
February 8-13, 2004  
California, USA

17th International Conference  
2005  
Italy

## DNA-based Wildlife Studies

**November 18-21, 2002  
Nelson, B.C., Canada**

These three classes are offered by: Columbia Mountains Institute of Applied Ecology  
Box 2568  
Revelstoke, B.C. V0E 2S0, Canada  
Phone (250) 837-9311  
Fax (250) 837-4223  
Email [cmi@revelstoke.net](mailto:cmi@revelstoke.net)

Register separately for each session at [www.cmiae.org](http://www.cmiae.org). Cost: \$175 per session (Canadian funds).

### **Session One, November 18-19, 2002 Study Design and Field Methods for DNA-based, Mark-Recapture Inventories.**

Instructor: Garth Mowat,  
Aurora Wildlife Research.

We will discuss sampling designs for broad-scale inventories of terrestrial mammals including methods for predicting sample size needs. We will begin with a brief introduction to mark-recapture theory and how to use the program CAPTURE to predict estimator precision. Then we will discuss field methods for sampling DNA from carnivores including bears, mustelids and felids. Topics will include the use of baits, comparison of hair removal methods, and the handling of samples including sorting and sub-sampling to minimize laboratory analysis costs. We will close with a brief discussion of how broad-scale data of this type has been used and how we may benefit from these methods in the future.

### **Session Two, November 19-20, 2002 Genetic Analysis of Individual Identity in DNA-based Inventories**

Instructor: David Paetkau,  
Wildlife Genetics International.

The goal of this session is to provide non-geneticists with targeted information that will enable them to understand, scrutinize, and defend the genetic data that they receive from

laboratories. The workshop begins with a review of basic molecular genetics (what is DNA, the central dogma, terminology, etc.), and an introduction to the common techniques (extraction, PCR, electrophoresis, DNA sequencing) that allow molecular biologists to study the genetic code at its most fundamental level. This will be followed by a description of the specific markers and techniques that are used to establish individual identity. The workshop culminates in a discussion of how and where things can go wrong, and what can be done about it. Participants will be introduced to signatures of error, protocols that can prevent and detect error, and empirical evidence as to how good (or bad) datasets can be.

### **Session Three, November 20-21, 2002 Advanced Mark-Recapture Analysis of Genetic Data**

Instructor: John Boulanger,  
Integrated Ecological Research.

In the past ten years there has been much advancement in mark-recapture estimation including flexible models that allow incorporation of covariates and the testing of research hypotheses directly from mark-recapture data as incorporated in program MARK. This workshop explores the application of newer mark-recapture methods to DNA data from grizzly bear populations. An overview of newer models and general estimation methodology and philosophy will be given. Case studies of DNA projects for the purpose of population estimation and trend will be introduced and discussed with an emphasis on the strengths and weaknesses of newer and older approaches to data analysis. There will not be time to analyze participants' data sets. However, participants are encouraged to bring ideas and questions about how newer methods may be able to aid their research programs.

## Grizzly Bears: Enhancing & Managing Small Populations

December 2-4, 2002  
Sandpoint, Idaho, USA

This workshop focuses on enhancing small populations of grizzly bears in the U.S.-Canada transborder area, and creating and managing new populations in linkage zones. It is being coordinated by the IBA, local, state, provincial, and federal governmental agencies interested in grizzly bears, and the National Wildlife Federation.

Invited papers will be presented by Mark Boyce, Lisette Waits, Chris Servheen, Matt Austin, Rick Mace, Dave Mattson, Greg Schildwachter, Wayne Kasworm, John Boulanger, Wayne Wakkinen, Mike Proctor and others. A panel discussion is planned with local political leaders and citizens. Pertinent papers on this topic from Europe and Asia are encouraged. Proceedings will be peer-reviewed and published. Contact: Sterling Miller  
National Wildlife Federation  
240 North Higgins, Suite 2  
Missoula, MT 59847, USA  
Phone (406) 721-6705  
Fax (406) 721-6714  
Email millerS@nwf.org

## Seventeenth Eastern Black Bear Workshop

March 2-5, 2003  
Mount Olive, New Jersey  
USA

New York and New Jersey are co-hosting the 17th Eastern Black Bear Workshop to be held at the Wyndham Gardens Hotel and Conference Center March 2-5, 2003, Mount Olive, New Jersey. Details will be in the next newsletter and will be mailed to previous participants. A call for papers has been mailed. Contact Kelcey Burgess, New Jersey Division of Fish and Wildlife at (908) 735-8793.

## Eighth Western Black Bear Workshop

April 15-17, 2003  
Chico Hot Springs Resort, Pray, Montana, USA

### First Call for Papers

We encourage papers and posters on all aspects of American black bear biology and management, and related topics. Relevant papers or posters on brown bears will be considered as time and space permit. Authors should submit a one-page summary of the proposed presentation on a 3.5 inch disk or via email (in WORD, WordPerfect, or ASCII format). Please list all authors and affiliations and current address, phone number, fax number, and email address of the primary author. Please indicate whether the summary is for a paper or a poster. Send summaries to:

Cecily Costello  
Hornocker Wildlife Institute –  
Wildlife Conservations Society  
2023 Stadium Drive, Suite 1A  
Bozeman, MT 59715, USA  
Phone (406) 522-9333  
Email ccostello@wcs.org or  
costello@hwi.org

**Deadline for summaries is  
December 15, 2002.**

## Sixteenth IBA Conference

February 8-13, 2004, San Diego, California, USA

Doug Updike  
Wildlife Programs Branch  
California Dept. of Fish and Game  
1812 9th Street  
Sacramento, CA 95814, USA  
Phone (916) 445-3652  
Fax (916) 445-4048  
Email DU@dike@dfg.ca.gov

Preparations are underway for the 16th International Conference on Bear Research and Management, San Diego, California in 2004. Two hundred rooms (US\$110.00/room)

### Workshop Information

Registration materials will be in the November 2002 newsletter. We anticipate two-to-three days of paper and workshop sessions, along with an ice-breaker (on the 14th), a banquet, and optional field trip(s).

Chico Hot Springs Lodge accommodations include single and double rooms with shared baths, single and double rooms with full baths, suites with kitchenettes, log cabins, chalets, cottages, and houses. Although we have reserved the entire facility, space is limited, so we encourage sharing of rooms when possible. Rates range from \$39-149 for rooms, \$149-189 for suites, and \$75-315 for cabins or houses. Visit [www.chicohotsprings.com](http://www.chicohotsprings.com) or phone (406) 333-4933 for reservations. Say you are attending the Western Black Bear Workshop and receive a 10% discount.

This workshop is sanctioned by the Western Association of Fish and Wildlife Agencies.

have been reserved at the Bahia Resort Hotel ([www.bahiahotel.com](http://www.bahiahotel.com)) in San Diego.

Preliminary agenda:  
Bear/Human Conflicts  
Field/Lab/Statistical Techniques  
Habitat Assessment/Relationships  
Genetics/Physiology  
Conservation Biology

Field trips tentatively scheduled for Wednesday (February 11) may include: San Diego Zoo, Balboa Park, Marine World, fishing trip, Disneyland, pelagic birding trip, Mojave Desert.



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Bear

# International Bear News

The quarterly newsletter of the International Association for Bear Research and Management (IBA).  
 Editor: Teresa DeLorenzo, Design Editor: Cynthia Cheney, Conservation Publications, Inc.  
*International Bear News*, ISSN #1064-1564  
 10907 NW Copeland St., Portland, Oregon 97229-6145, USA  
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All members receive the newsletter. Send articles, artwork, photographs, etc. for publication to the address above.  
**Deadline for the November 2002 issue is October 15, 2002.**

**Thank you to everyone who contributed to this issue. Artwork is copyrighted—do not reproduce without permission.**  
**Thank you to CityGraphics, Portland, Oregon, USA for generously discounting the cost of printing.**

## Membership

Use the form on the pages 25-26 to order or renew memberships, make donations, and update member information.

## 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 (USA tax # 94-3102570) organization open to professional biologists, wildlife managers and others dedicated to the conservation of all bear species. The organization has over 750 members from over 45 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 annual journal *Ursus*.

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\*term expires 2004  
 ^term expires 2002

# IBA Membership Application & Survey

Please Complete Both Sides of Form. Mail or Fax to Address Below.

**USE THIS FORM TO MAKE YOUR CONTRIBUTION TO MATCH THE IBA CHALLENGE GRANT**



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Affiliation \_\_\_\_\_

Address \_\_\_\_\_

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Telephone \_\_\_\_\_ Fax \_\_\_\_\_

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Check this box if you WANT your membership information shared with other conservation organizations.

Address Change

Membership US\$25.00 per year for one or two years, US\$20.00 per year for three years or more.

New  Renewal Number of Years \_\_\_\_\_ US\$ \_\_\_\_\_

Gift Membership Number of Years \_\_\_\_\_ US\$ \_\_\_\_\_

Gift Membership for: Name \_\_\_\_\_  or IBA selected

Address \_\_\_\_\_

Tax-Deductible Contribution to IBA US\$ \_\_\_\_\_

TAX-DEDUCTIBLE MATCH FOR CHALLENGE GRANT US\$ \_\_\_\_\_

TOTAL AMOUNT US\$ \_\_\_\_\_

Check or Money Order in US\$. Make payable to IBA.

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Signature \_\_\_\_\_

SEND TO: Joseph Clark, IBA Secretary  
Southern Appalachian Field Laboratory  
University of Tennessee  
274 Ellington Hall  
Knoxville, Tennessee 37996, USA  
Fax (865) 974-3555  
Email jclark1@utk.edu

Please fill out both sides of the form!  
Download form at [www.bearbiology.com](http://www.bearbiology.com).

Join and Receive *International Bear News*

OFFICE USE ONLY

August 2002, Vol. 11, No. 3

Date Received \_\_\_\_\_ Amount Received \_\_\_\_\_ Start Issue \_\_\_\_\_ End Issue \_\_\_\_\_ Date Entered DB \_\_\_\_\_

# IBA Member Application & Survey, cont'd.

**Please Complete Information on Both Sides of Form!**

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

	1. Expertise	2. Advise/Assist	IBA		1. Expertise	2. Advise/Assist	IBA
Accounting				Legal			
<b>American Black Bear</b> ** years				Legislative Processes			
<b>Asiatic Black Bear</b> ** years				Life History			
<b>Andean Bear</b> ** years				Management			
Awards*				Member Concerns*			
Bear-Human Conflict				Media Relations			
Bears in Culture				Mentoring/Training*			
Behavior				Newsletter*			
Bylaws*				Nominations*			
<b>Brown Bear</b> ** years				Nuisance/Damage Management			
Conferences*				Nutrition			
Conservation*				Organizational Development			
Disease				Pathology			
Economic Development*				Physiology			
Education/Outreach*				<b>Polar Bear</b> ** years			
Enforcement				Policy*			
Ethics*				Population Dynamics			
Evolution				Quantitative Analysis			
Field Research				<b>Sloth Bear</b> ** years			
Financial Management				Strategic Planning*			
Food Habits				<b>Sun Bear</b> ** years			
Genetics				Toxicology			
<b>Giant Panda</b> ** years				Travel Grants*			
GIS				<i>Ursus</i> Journal*			
Grant Review*				Veterinary			
IBA History/Archive				Website*			
Habitat Evaluation				Wildlife Rehabilitation			
Husbandry/Zoo				Other—Specify _____			

\*\*Please indicate number of years of experience with each species on 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 member directory \_\_\_\_\_

**Thank you for completing the survey, please tear out and mail or fax!**

# IBA Publications Order Form

<b>Ursus Journal &amp; IBA Conference Proceed</b>				<b>Cost</b>	<b>Quantity</b>	<b>Total</b>
4th	1980	Montana 1977		\$30.00	_____	_____
5th	1983	Wisconsin 1980		\$30.00	_____	_____
6th	1986	Arizona 1983		\$30.00	_____	_____
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8th	1990	British Columbia 1989		\$40.00	_____	_____
9th (1)	1994	Montana 1992		\$45.00	_____	_____
9th (2)	1997	France 1992		\$25.00	_____	_____
10th	1998	Ursus-Alaska/Sweden '95		\$40.00	_____	_____
11th	1999	Ursus 11 <b>NEW!</b>		\$45.00	_____	_____
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**Eastern Black Bear Workshop Proceedings, USA**

10th	1991	Arkansas 1990		\$15.00	_____	_____
15th	2002	Massachusetts 1999		\$15.00	_____	_____
16th	2001	South Carolina 2001 <b>NEW!</b>		\$15.00	_____	_____

**Western Black Bear Workshop Proceedings, USA**

1st	1979	Arizona 1979		\$15.00	_____	_____
4th	1993	California 1991		\$15.00	_____	_____
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**Safety in Bear Country Videos **NEW!****

Staying Safe in Bear Country				\$20.00	_____	_____
Staying Safe in Bear Country & Working in Bear Country				\$30.00	_____	_____
Staying Safe in Bear Country Public Performance Rights				\$69.00	_____	_____
Staying Safe in Bear Country/Working in Bear Country				\$129.00	_____	_____

**Monographs of the IBA**

<b>A Proposed Delineation of Critical Grizzly Bear Habitat in the Yellowstone Region</b>						
By J. J. Craighead				\$10.00	_____	_____
<b>The Status and Conservation of the Bears of the World</b>						
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**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

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