



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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Two Asiatic black bears cubs, recently handed over to the Provincial Agriculture and Forestry Office in Luang Prabang, settling into their new home at Tat Kuang Si Bear Rescue Centre.

See the related story about Wildlife Trade in Lao PDR on page 15.

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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 August 2010 issue is 30 June 2010. (Please note that this deadline is 5 days earlier than normal.)

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

Membership

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

From the President

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Following world events on television or the internet these days, you can't help but get the impression that a polarization on scientific evidence has taken place among citizens. I see this firsthand in the United States and I suspect this may be happening elsewhere as well. In the January 2010 issue of the journal *Nature* (Vol. 463), an opinion article by Dan Kahan of Yale Law School ('Fixing the communications failure') provides an interesting (scientific) perspective. The article details how citizens react to scientific evidence of risk, including environmental risks such as global climate change. As a scientist, I'm always perplexed how solid scientific information is sometimes interpreted entirely differently by groups of people with different 'cultural' views. Interestingly, the author has an explanation for this and details how most citizens follow the lead of credible scientists. However, what citizens define as 'credible' depends strongly on the perception that scientists share their moral values. In other words, people tend to be very selective in how they view scientific evidence and the messenger (the scientist), plays an important role in that.

This is of importance to bear researchers and managers alike because we do deal with contentious issues such as polar bear conservation and global warming, listing or delisting of threatened/endangered populations, proposed legislature to regulate trade in bear parts, solving human-bear conflicts, you name it. The author makes a case for science needing better marketing, not

to convince citizens to accept any particular conclusion but to promote that stakeholders be open-minded and unbiased in considering the best available scientific data. Yet, the approach among many of us, myself included, has been to simply present facts, facts, facts, and somehow expect the public to understand the 'truth'. However, as the author indicates, if that truth threatens people's values, as it does so often with bears, they may not accept the scientific truth and consider alternative, non-scientific arguments instead. At that point the scientific debate becomes a contest and science has lost.

So what can we do about this? As the author says: "We need to learn ... how to structure debate so that it avoids cultural polarization. If we want democratic policy-making to be backed by the best available science, we need a theory of risk communication that takes full account of the effects of culture on our decision-making". This doesn't sound easy but awareness is a first step. I encourage all IBA members as scientists and messengers to keep this in mind when speaking to the general public.

Georgia Conference

By the time you receive this newsletter, the 19th International Conference on Bear Research and Management in Tbilisi, Georgia will be getting close (May 16-22). The conference is organized by NACRES, Centre for Biodiversity Conservation and Research, a non-profit organization for which the brown bear is one of the priority species. With Georgia being on the crossroads of Europe and Asia, an important goal of the conference is to bring together researchers and managers from Eurasia so much emphasis will be placed on brown bears. The conference will also promote research and conservation on the other bear species, including a special session organized by the Bear Specialist Group. You can find the latest information on the conference website: <http://www.nacres.org/>

bearconference/index.html. I hope to see many of you at the conference and I hope you will take advantage of this opportunity to explore the natural beauty and culture of Georgia. See you in Tbilisi!

Changes in IBA Council

Several important decisions were made by Council in the past few months. Because of changing job responsibilities and frequent travels for his function as Chair of the IUCN Specialist Group on Invasive Species, Piero Genovesi felt he could not provide sufficient input as Vice President. Piero has been Vice-President since 2005 and always provided a solid voice of reasoning on Council. As co-organizer of the 16th International Bear Conference in Riva del Garda, Italy, he and his colleagues set a high standard for the technical and organizational aspects of IBA conferences and we still benefit from that today. His contributions to IBA and bear conservation in Italy and Europe have been extremely valuable. So it is with much regret that I accepted Piero's resignation but also with the full understanding and respect for that decision, and the knowledge that Piero will remain involved in bear conservation.

In these situations, our Bylaws allow Council to appoint someone to a vacated seat by Council vote. Because of the upcoming conference and Council meeting in Tbilisi, we wanted to make sure we had a complete Council and appointed Andreas Zedrosser as Vice President – Eurasia for the remainder of the term (through Fall 2011). Andreas has worked as a bear manager in Austria and conducted his Ph.D. and post-doctoral research in Sweden and Norway as a member of the Scandinavian Brown Bear Research Project. Because Andreas was already serving on Council, a Council seat was vacated in turn. Therefore, in a separate vote, we appointed Alexandros Karamanlidis as our new Council Member. Alexandros is Scientific Director for ARCTUROS, a non-profit

organization from Greece whose focus is the conservation of large carnivores in the Balkans and Greece in particular. I welcome Andreas as our new Vice President and Alexandros as our new Council member; both have been involved with IBA functions in various capacities and they bring lots of expertise, energy, and enthusiasm. I look forward to their contributions!

IBA Elections

IBA elections follow an 18-month cycle and we will have the next elections this fall. For the first time, we will have elections by electronic ballot. We are still working out the details but our intention is to make the voting process much easier than before, especially for those of you outside North America, who previously had to return ballots by mail.

I have appointed a Nominations Committee to identify candidates for 4 Officer positions and 3 or 4 Council positions. The Nominations Committee consists of: Karen Noyce (Chair), Ximena Velez-Liendo, Dave Garshelis, Djuro Huber, and Sterling Miller. The 4 Officer positions will be President, Vice President - Americas, Treasurer, and Secretary. Diana Doan-Crider (Secretary), Cecily Costello (Treasurer), and I will run for a second term as incumbents but Karen Noyce has already served a second term and is not eligible to run again. In addition to these positions, 3 or 4 Council positions will be open for election, depending on who is elected President. Having strong candidates for any of these positions is crucial to a well-functioning Council so I encourage you to identify candidates and submit your nominations to the Committee. More details on this process are provided by Karen Noyce in this issue of IBN.

Updated Conference Guidelines

The Conference Committee (Mike Vaughan [Chair], Piero Genovesi, Koji Yamazaki, Diana Doan-Crider, and

Sterling Miller) is close to finalizing an update of our conference guidelines. The guidelines needed an overhaul so this became quite an endeavor. I appreciate all the effort and diligence that the committee put into this. The new guidelines should be available soon on our website. As I indicated in the previous newsletter, we are now actively seeking bids for the next Eurasian conference. In the next issue I will report on progress of the Conference Scheduling Committee. ■

The IBA Wishes to Thank the Following People

for their generous support of IBA's grants programs through
The Bear Conservation Fund,
fostering conservation through science and collaboration:

Zoological Society of San Diego

Harry Reynolds

Joan Rog

Tatjana Rosen

Tabitha Graves

Karen Noyce

Allan Brody

Laurie Ferguson Craig

Trina Smith and Ted Endres

Zoological Society of Buffalo

Debra Potts

Russ Van Horn

Marla Brin

Mertzanis Yorgos

Jon Swenson

Julie Horning

Jennapher Teunissen van Manen

Gabe Huang

Amanda Jorgenson

Kate Kendall ■

Nominations Now Open for IBA Fall Election

Karen Noyce
Chair, Nominations Committee

The next election of IBA officers and Councillors will take place next November 2010. IBA Council oversees the programs and finances of the IBA. Tasks include scheduling and choosing venues for IBA Conferences, providing direction and guidance for IBA's publications and grants programs, and developing and maintaining new ways to foster scientific research and management of bears, as well as communication among bear biologists, conservationists, and educators.

A Nominations Committee is currently seeking members who have an active interest in helping govern IBA to serve as candidates for IBA Council and offices. Serving on Council is an excellent way to have a part in making decisions about IBA's future. Any IBA member is eligible to become a candidate. You may nominate yourself or someone else by providing name and contact information to a member of the Nominations Committee. You must simply verify that the person named is committed to serving if elected and is an IBA member in good standing (dues are up-to-date). A list of all names received by the committee before 30 June will be published in the August issue of *International Bear News*.

Offices open for election in 2010 include President, Vice President (Americas), Treasurer, and Secretary. Current incumbents Frank van Manen (President), Diana Doan Crider (Secretary), and Cecily Costello (Treasurer) will all run for a second term, but incumbent Karen Noyce (VP Americas) has served two terms in this office and is not eligible to run again. Vice President (Eurasia) will not be elected until 2011.

In addition, the three Council seats currently held by Jon Swenson, Shyamala Ratnayake, and Koji Yamazaki come open in 2010. These seats are “at-large” and will be filled from a pool of candidates by those receiving the three highest vote totals.

The position of IBA past-president, currently filled by Harry Reynolds, also expires in 2010. If a new president is elected, current president Frank van Manen will remain on Council in the position

of past president and the number of Council seats filled from the pool will remain at three. If Frank van Manen is re-elected as President, the past president seat remains open and a fourth Council seat will be filled from the pool of candidates.

Please consider running for an IBA position. All candidates will have the opportunity to provide personal statements regarding their qualifications and interest in seeking office. These

will be published and distributed to the membership at the time of voting.

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Bear Specialist Group

Assorted, Varied, and Similar

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“Going to hell in a hand basket” — a once-common American expression, which means “deteriorating rapidly and headed for disaster” — seems descriptive of the state of bear populations in many parts of the world today. What are people doing to help reverse this course?

Bear conservationists in the BSG are working on assorted issues impacting bears, using varied approaches, but with similar aims. The five reports that follow are illustrative of the assorted, varied yet similar (read on to see what we mean by this) conservation initiatives that are occurring across the globe.

- Bear farming (predominantly Asiatic black bears) has begun in Lao P.D.R., and there is strong evidence of increased poaching and sale of bears and bear parts from Lao to Vietnam, as Vietnam’s supply of wild bears has all but vanished.
- In Nepal, a very small population of brown bears is clashing with poor local people as both try to eke out an existence in the harsh environment of the Himalayan Mountains.
- In the Carpathian Mountains of Romania, inhabited by a relatively large population of brown bears, a host of government bureaucracies get in each others’ way and hamper solutions to human–bear conflict situations.
- In nearby Albania, the end of communist rule 2 decades ago is still having negative repercussions for bears, including (but not limited to) taking bears from the wild for pets or commercial trade.
- In Greece, brown bears in the most southerly European population seem to be shortening their period of hibernation, possibly due to climate change, and thus may be becoming more vulnerable to human-caused mortality.

Obviously, these diverse problems require correspondingly diverse solutions. But one theme is strikingly similar among all these cases: just a few dedicated people, with a strong desire to effect real change in their local area, are having sizeable impacts by “pushing the right buttons” (another common expression meaning to do what is necessary to get the result that you want).

In an era where it seems that bears are facing dismal news on so many fronts, it is gratifying to learn how individual people really can make a difference in changing laws, changing government structure, pushing governments to better enforce existing laws, facilitating greater collaboration between communities and governments, and sounding an early alarm to better deal with threats “around the corner” (going to happen very soon).

With enough dedicated people we can stay out of the proverbial hand basket. By the way, if you’re wondering where the hand basket phrase comes from, it seems that nobody really knows. And these days it would be a backpack anyway. ■

Bear Specialist Group

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Enumerating Captive Brown Bears in Albania

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Brown bears are indigenous to Albania, found primarily in beech forests from Vermosh in the north to the Vjosa valley in the South. These bears are protected by Albanian law and Red Listed (endangered) by the Ministry of Environment, Forests and Water Administration. Approximately 350 bears remain in Albania, which is thought to be significantly fewer than similar approximations made 20 years ago when the communist regime ended.

The dramatic change in the political system is believed to have had a significant effect on the bear population for several reasons: (1) hunting has increased on lands formerly owned by the state, which disallowed hunting without authorization, (2) a redistribution of people into formerly forbidden areas, (3) degradation of bear habitat from increased forest harvesting with use of heavy ma-



© Kastriot Korro

Person walking his pet bear on a beach near Kavaja, Albania.

chinery, (4) burning forests to obtain charcoal for commercial purposes, and (5) increased poverty and a lack of enforcement of regulations in rural areas, leading to increased taking (killing or capture) of wild bears and a commercial trade in captive bears.

Our study focuses on documenting the change in the number of captive bears in Albania. We have also strived to influence public opinion about holding bears in captivity and have been working with government agencies to improve the current law restricting the keeping of bears in captivity and protecting wild fauna in general. We have interviewed bear owners, forest inspectors and chiefs of communes of rural areas bordering the forests inhabited by bear populations. We have photographed bears in captivity and their owners and supplied these and other information to the public and to local government authorities. We have used electronic media to broadcast the issue and promote wildlife protection.

For the first time since the change in the political regime, we not only documented the number, gender and geographic distribution of captive bears in Albania, but also identified the owners. We are currently placing ID chips in the bears. There are cur-

rently 44 bears (26 female, 18 male) in captivity. In 1990, there were only two known captive bears in Albania.

Working with NGOs and government staff, we have added the following clause to the laws of Albania: "killing without the permission of respective authorities and keeping the bears in captivity shall be illegal and punishable by fines or imprisonment." This new law will lead to confiscation of captive bears and their transfer to better facilities in zoo-parks of Albania or in other countries. Most importantly, we hope to stop the capture of wild bears for pets, trade, and commercial display. ■



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Den site of a female radio-collared brown bear in Greece.

Denning "Rhythms" of Brown Bears in Greece are Heating Up!

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As part of the Egnatia Highway impact monitoring project in NE Pindos, Greece, conducted from 2006 to 2009 by NGO "CALLISTO", we sought to better understand the denning chronology of brown bears at the southernmost part of the species' range in Europe.



Female brown bear with two young cubs. Parturient females were unexpectedly active until late January, just before giving birth.

(See *International Bear News* November 2009, 18(4):10-12, 20 for description, map, and photos.) We monitored a sample of 24 radio-tagged individuals (16 males and 8 females, tracked for periods of 0.5-14 months). Their mean date of den entry was 27 December (range: 4 Dec - 4 Feb, $n = 11$) and mean

date of den emergence was 28 March (range: 15 Feb - 17 May, $n = 11$). Mean duration of denning was 83 days (range: 20-145 days, $n = 11$).

Of particular note, 7 of 11 males remained active during almost the entire winter period, travelling within a winter home range averaging 36 km² (100% MCP; range 8-81 km²). One adult male showed alternate periods of inactivity and activity corresponding with winter temperatures fluctuations.

Also striking was a limited level of activity for all four pregnant females prior to parturition (average winter home range = 3 km², range 1.5-7.5 km²); they all settled down by the end of January, and gave birth during the first week of February.

An initial analysis of the data indicates a positive correlation between winter activity and temperature as

temperatures rose above a threshold of ca. 5-10°C. This relationship suggests that vulnerability to human-sources of mortality (e.g., from road crossing, retaliatory killing from livestock depredations) for brown bears in this southernmost part of Europe may increase with continued climatic changes. ■

First Genetic Assessment of the Brown Bear (*Ursus arctos*) Population in Greece

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Noninvasive genetic monitoring has emerged as a sensitive, reliable and time- and cost-efficient tool to deal with the inherent difficulties of studying rare, elusive and often endangered animals. A tool that has become nowadays one of the most commonly used methods in studying bears. In Greece, studying brown bears using genetic/molecular methods started in 2003 within the framework of a project carried out by the Arcturos, aiming to evaluate the effects of the construction of the "Egnatia" highway on the local bear population and habitat in the Prefecture of Grevena. Since 2007, the genetic monitoring efforts of Arcturos seeks to evaluate the genetic status of the species at a national level. Based on the marking and rubbing behavior of brown bears on telephone and power poles (Karamanlidis et al. 2007), the "Hellenic Bear Register" project established five study areas within the main distribution of brown bears in the Pindos mountains in Greece; approximately 300 power

© A. Riegler/NGO "Callisto"

poles were fitted with barbed wire and monitored monthly for two years (2007 – 2009). With funds provided by Alertis, fund for bear and nature conservation and the International Bear Association, genetic monitoring activities were carried out in 2008 – 2009 also in Albania, the Former Yugoslav Republic of Macedonia and Serbia.

As of the end of 2009 the project has identified three different bears in Albania, eight in the F.Y.R. Macedonia, eleven in Serbia and 257 in Greece. More specifically, in Greece and in 2008 alone, 215 different bears were identified.

Considering the general lack of knowledge regarding the status of the brown bear population in the country (the official minimum population estimate for brown bears in Greece in 2006 was 190-260 individuals) and the success of the genetic monitoring efforts of ARCTUROS until now, the newly founded Hellenic Ministry of Environment and Climate Change has recently appointed Arcturos with the task of carrying out the first genetic assessment of the bear population in the country. The 18-month project was initiated in November 2009. During the preparatory phase of the project (November 2009-April 2010) guidelines for streamlining all future genetic research on brown bears in Greece were defined and a dense network of noninvasive sampling stations was established. In order to build upon the already existing knowledge and experience and produce comparable results the six microsatellite loci identified and used within the “Hellenic Bear Register” will be used (Karamanlidis et al. 2010). Due to the increasing number of individual bears identified in the country a soon-to-be-identified seventh marker is going to be added to the ones already used. In addition to the five already existing sampling areas of the “Hellenic Bear Register”, another three were established in the Prefecture of Ioannina, in the National Park of Prespes and along the vertical axis of the “Egnatia”

highway in Kastoria (> 350 sampling stations in total), thus covering the biggest part of the species range in the Pindos Mountains.

Due to lack of suitable power poles, genetic monitoring of brown bears in the eastern part of their distribution, in the mountains of Rodopi, will rely on the collection of scats and hair from rub trees. Sampling efforts started in March 2010 and are expected to commence the same time in 2011, after which a thorough analysis of all the genetic data available to Arcturos will take place. This will lead to recommending concrete conservation and management actions for the effective protection of brown bears in Greece.

Acknowledgements

The genetic monitoring efforts of Arcturos have been carried out in cooperation with the Aristotle University of Thessaloniki/Greece, the University of Zvolen/Slovakia, the University of Ås/Norway and Wildlife Genetics International/Canada. The whole project has received generous funding from Alertis, Fund for bear and nature conservation, the International Bear Association, Vodafone Hellas and the Hellenic Ministry of Environment and Climate Change. The activities of the project have been recently featured on BBC Earth; for more information visit http://news.bbc.co.uk/earth/hi/earth_news/new_sid_8560000/8560235.stm

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New Highway Monitoring Efforts in Greece: the Egnatia Motorway vertical axis “Siatista – Kastoria – Kristalopigi” project

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Determining and understanding mortality factors and species threats is essential in defining and implementing effective conservation actions. Greece has witnessed in recent years a dramatic increase in bear – vehicle collisions; since 1998 there have been 44 collisions, 28 of which were fatal to bears. Considering the potentially devastating effects that the construction of highways might have on local brown bear populations and their habitat, the Greek State has been funding two highway monitoring projects: the first one, now-completed “Egnatia” highway and the second one at the “E65” highway, which is still under construction.

A close inspection, however, of the locations where fatal bear–vehicle collisions have occurred recently, indicates that a significant percentage of collisions have taken place along one of the vertical axes of “Egnatia”, a 72 km stretch of highway, known as the “Siatista – Kastoria – Kristalopigi” vertical axis. Expanding an already existing stretch of road, this new highway, which is going to connect Greece with neighboring Albania, threatens to become an impermeable barrier to the West –East movements of the Pindos mountains bear population.



Members of the ARCTUROS field team inspecting a power pole, to be used as a sampling station for the genetic monitoring of the brown bear population in the area of the "Siatista – Kastoria – Kristalopigi" highway.

With the generous financial support of the mobile phone company Vodafone Greece, Arcturos has initiated a new highway monitoring project along the "Egnatia" vertical axis "Siatista – Kastoria – Kristalopigi". The main activities of the project include the radio-tracking of individual bears and an extensive study of the genetic status of the local bear population. Based on data from previous research of ARCTUROS, which include the radio-tracking of a female bear and the genetic identification of 38 bears in the study area (30 on the western and eight on the eastern side of the highway), there is limited movement between the western and eastern side of the highway. The activities of the project are being complemented by the permanent conservation actions of ARCTUROS in the area, which include:

- posting of road signs at bear crossings,
- enrichment of the natural food basis for bears by planting fruit trees in Kristalopigi,
- the support of local shepherds through the donation of Hellenic Shepherd dogs that are bred at the breeding Center of Arcturos,

- the operation of the Bear Emergency Team of Arcturos, which inspects all cases of human-bear conflicts in the area, and
- the operation of the Bear Rescue and Rehabilitation Center of Arcturos, which provides the necessary treatment for injured bears. The operation of the facility has been greatly improved through a strategic partnership with the Veterinary Department of the Aristotle University of Thessaloniki.

The project will run until 2011 and will produce a set of recommendations for mitigating the effects of the operation of the highway on the local bear population. ■



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A Review of the Institutional Framework for Bear Management in High Density Areas of Romania

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The Romanian brown bear population is distributed over about 47,000 km² within the Carpathian Mountain range. Government authorities estimate that this population exceeds 6,000 individuals. Such a large bear population is managed by several institutions (game managers, environmental authorities, control institutions, etc.) that work within a complicated framework; this framework may produce outcomes that do not serve the best interest of either the bears or the people affected by bears. Such issues were targeted by the LIFE EX-TRA project (www.lifextra.it), co-financed by the European Union (LIFE+ Program) and implemented in several countries (Romania, Italy, Bulgaria and Greece).

In Romania, this project sought to identify and assess the role and responsibilities of the institutions involved in the management of bears in Brasov and Covasna counties, areas with a high density of brown bears. Specific project sites were chosen to cover the wide variety of players that effect bear

management, including private forest offices, state forest offices, hunters' associations, university hunting units, and state forest hunting units. This was one of the first attempts to assess the institutional framework concerned with bear conservation in Romania, and was carried out during a period of significant change both in terms of game management and nature conservation.

Methods

The methodological design, planning of activities, and analysis of results were done by a team formed by: George Predoiu, Prof. dr. Dieter Simon, Assist. Prof. Stefan Ungurean, and Assist. Prof. Ion Micu. The research and field activities were done by specialized staff who interviewed representatives from 29 institutions and organizations involved in bear management (leaders of public administration, local mayors, environmental agencies, forest offices, game management offices, depredation control institutions, etc.). These interviews were aimed at assessing each organization's views of its responsibilities, competencies, and effectiveness in terms of bear management and conservation. The interviews were conducted during

August-October 2009, and analyses and report drafting completed during November-December 2009.

Results

The principal problem related to bear management identified during field interviews is the variety of human activities that occur within bear range:

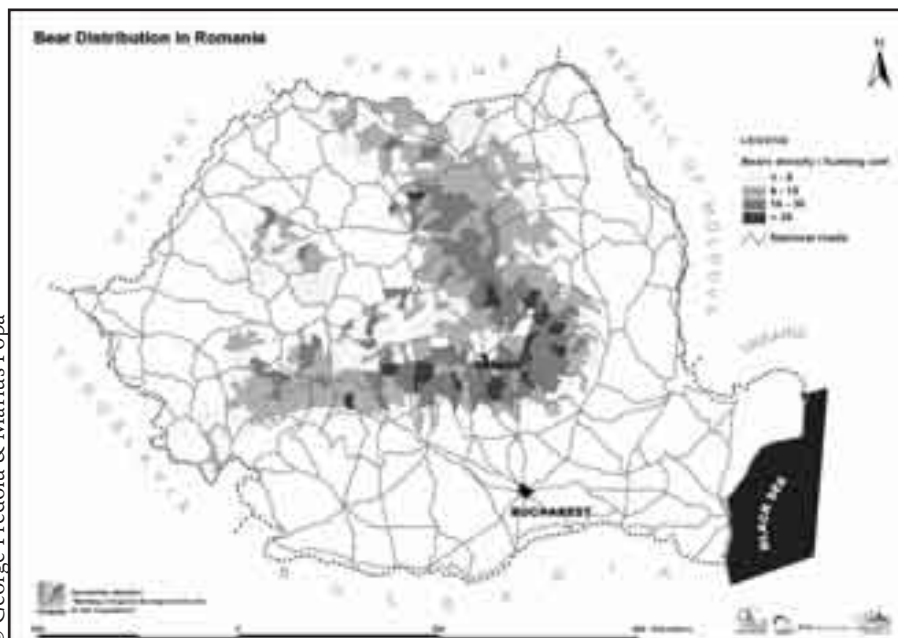
- Large-scale tourism development, including sites within protected areas (new ski resorts and destinations for leisure and recreation);
- Increased housing construction within natural areas, and fear of bears by new residents;
- Nature adventures (camping, extreme sports, hunting) aimed at escaping the modern daily lifestyle (hunting has played a significant role in social relationships throughout Romanian history, and this tradition persists today);
- Grazing activities (April-September) leading to depredation conflicts;
- Extraction of natural resources such as berries, wood and water, which on a small-scale is sustainable and supports local com-

munities that may depend on a subsistence way of living, but on a large-scale is having negative effects on bears.

Some major consequences of these activities are:

- The forests are no longer a refuge for bears — conflicts are increasing and the mass media typically portrays the bear as a threat and man as the victim;
- Increased bear use of and habituation to human food sources has led to increased numbers of bears near urban areas;
- Confusion as to which institution should handle the increasing bear-human conflicts (many institutions have overlapping responsibilities);
- Abandonment of some agricultural lands where wildlife damage has become severe (with losses not compensated by the government);
- Loss of secure habitat for bears, and loss of economic security for people trying to raise crops and livestock — a lose-lose situation;
- Increasing negative attitudes toward bears (people do not see themselves as responsible for the conflicts).

We have also identified conflicts between state institutions attempting to implement the EU nature conservation legislation versus the state institutions charged with managing natural resources within the context of traditional Romanian culture. Our analysis revealed that the game and forest management authorities are typically more effective in promoting their interests (e.g., hunting) over those of the nature conservation institutions. Hunting bears is a significant source of revenue in Romania, adding further to conflicts within hunting organizations regarding assigned quotas, and between these organizations and landowners regarding hunting access versus property rights.



Current bear range in the Carpathian Mountains of Romania, showing density gradient.

Bear management is even less effective at the local (county) level, which includes the Prefect Institution and the County Council. The former acts only in cases of human-wildlife conflicts but has no personnel trained in wildlife issues. The Council has responsibilities for biodiversity conservation but not specifically for bears. The members of this institution are elected to defend the rights of the citizens, including livestock and landowners, but on the other hand, are required to implement an environmental legislation that is based on a top-down approach; this causes tensions and conflicts within local communities.

The different control institutions have different human and financial resources, working methodologies, and principles, so a common decision is often difficult to reach. National priorities are often implemented over those at the local level.

Discussion and Management Recommendations

A major question was formulated during this analysis: "Does (should) bear management in Romania aim to preserve the existing population or reduce it to meet existing management limitations and social acceptance?" That remains an open question at this time.

Our study revealed that both bears and people are suffering from shortcomings in the current management system. If bears were provided more space free of people, both bears and people would benefit. Many respondents noticed a decrease in the area of secure bear habitat yet they suggested that conflicts can be solved by hunting the "excess numbers". Respondents appeared unwilling to suggest limits on human activities in bear habitat. Moreover, protection of critical areas for denning, feeding, or travel corridors appears to be hampered by a legislative framework that currently is not coherent and not able to oppose persistent threats of development.

An interesting proposal that came out of this analysis was to identify a single institution responsible for bear management. The need for information and public awareness is another issue mentioned by many of the institutions involved in the survey. Such activities should be focused on local people and children. Demonstrations of effective livestock protection methods, such as shepherd dogs and electric fences, would help immensely in furthering bear conservation.

The interviews also highlighted a large gap between the responsibilities and competencies of many of the institutions involved in decision-making processes. More education about nature conservation and the habitat requirements of animals like bears is clearly needed. The implementation of Natura 2000 (European network of protected areas) has caused much confusion and frustration owing to a lack of a participative approach during the site designation process, lack of information on Natura 2000 conservation principles and hence lack of local acceptance. This should be addressed by future actions.

Whereas our study pointed to the need for many institutional changes, we should keep in mind that the bear population in Romania is still one of the most significant in Europe, and will certainly survive for many generations to come. 🐻



Csaba László Erőss (GNU)

Status of the Brown Bear Population in Trentino, Central Italian Alps, at the End of 2009

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Structure of the Population

Genetic monitoring has been carried out for the eighth consecutive year by the Forestry and Wildlife Department of Autonomous Province of Trento, with the collaboration of the National Wildlife Institute and the Adamello Brenta Natural Park. In 2009 genetic analysis have been carried out by Marta DeBarba. Three hundred and eleven organic samples were collected, all using the opportunistic method, bringing the total number of samples collected and subjected to genetic testing since 2002 to 3,038.

Overall, 25 animals were traced genetically during 2009: 13 males and 12 females (M-F sex ratio 1.08:1, $n=25$). For the first time since the conclusion of the reintroduction project (2002), a case of an immigrating bear was recorded in the easternmost part of the province (the young male M5, which is probably of Slovenian origin and was captured and radio-tagged, and estimated to be 3-5 years old). Considering the possibility of the presence of other individuals not detected in the last year alone (5), and excluding those missing for two or more years (10), the estimated population in 2009 ranges from 25 to 30 bears. The minimum number (25) represents the number of bears certainly present, whereas the maximum (30) is exclusively an evaluation on the basis of probability.



Reproduction

In 2009, there were two recorded litters, with a total of three cubs. A third unidentified female accompanied by a cub is considered likely to be present in the southern Brenta area. Finally, the presence of a fourth female with a cub is considered possible in the northern Brenta area.

There have, therefore, been at least 18 litters (genetically identified) recorded in Trentino in the last eight years, while no less than 38 cubs have been born (21 males, 17 females). The average number of cubs per litter is 2.11 and the M-F sex ratio is 1.24:1 (2002-2009, $n=38$). The average gap between consecutive litters for the same female, recorded in the period 2002-2009 ($n=8$ gaps, referring to 7 females), was 2.12 years. The average number of cubs per litter to date has been essentially proportional to the age of the mother, with less than two cubs for females aged 3-4, around two for females aged 5-7 and three for females aged 8 or over.

Balance of the Population

During 2009, two bears which were absent in 2008 were genetically detected, five bears present in 2008 were undetected for the first year, and no deaths or killings were recorded.

Genetic monitoring highlighted the absence of all the bears (eight) already missing in 2008, in addition to the eight bears found dead (5 cases), killed (2 cases) or taken into captivity (1 case) in 2002-2008. Two more bears

were added to those missing, as for the second consecutive year in 2009 no genetic traces of them were found. Thus, there were a total of eighteen missing bears at the end of 2009.

Survival Rates

We monitored the survival rate for the three different age groups of cubs (0-1 years), sub-adults (1-3 for females and 1-5 for males) and adults (>3 for females and >5 for males), differentiated for the two sexes. The data collected refer to a period of 8 years (2002-2009), during which it was possible to record the survival or death of 42 bears, with 136 passages from one year to another (136 bear-years). The "mortality" category, considered in the broader sense, also included bears it was not possible to detect for at least the previous two years (10 cases) and bears taken into captivity (1 case), confirming the criteria used for the definition of "missing bears", in addition to cases of certain death (7). Thus, the figures also included the three bears destroyed/removed following management decisions (JJ1, JJ3, and Jurka).

Mean Age

It is also interesting to note the evolution in the average age of the bear population over the eight years examined: in 2009, for the third consecutive year, there was a slight increase in average age (now 4.48). Considering that the survival rates found to date have increased proportionally with the age of the bears, the increase in the average age of the animals can, at this stage, be considered to be a positive sign for the future of the small population.

Area Occupied by the Population

Considering also the longest journeys made by sub-adult males during 2009, the population of brown bears present in the central Alps, which is mainly centred around western Trentino, currently stretches over a theoretical area of approximately 18,000 km². The area occupied by the females in a stable manner is decidedly smaller (955 km²) and situated within the province (Figure 1). The areas occupied have been estimated using the minimum convex polygon method, applied to 100% of the fixes available. This also led to the inclusion of vast areas which are not suitable and/or not actually used, especially within the macro-area including the movements of sub adult males.

The relative density of the area frequented by the bears in a more stable manner (approximately 20-22 bears over an area of 955 km², namely 2.1 bears/100 km²) is in line with the data available in the bibliography in relation to the alpine environment and the forecasts of the feasibility study which preceded the Life Ursus project.



Figure 1. Area occupied by the bears in the central Alps in 2009 (within bold line), and within this, the area occupied by females in a stable manner (dark shaded area)



Marking Behavior of Brown Bear (*Ursus arctos*) at Power Poles and Trees in the Kaçkar Mountains Range, Artvin, Turkey

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Marking behavior of brown bears poses still many unknowns. Green and Mattson (2003) suggest that the rubbing is directly related to marking behavior and that grizzly bears show no discrimination for a specific tree species whereas they do select for larger diameters. In the same study it was found that ecotones and junctions or edges of trails were proposed to be more suitable for marking. Tschanz et al. (1970) presented evidence that bears used rubbed trees for orientation, but concluded that the primary function of rubbing was communication by chemical means.

Therefore it seems that rubbing is an important behavior of brown bears to mark their territory and to communicate with females before the

mating season. Some researchers claimed that these rubbing sites are used for attracting females. Karamanlidis et al. (2007), in a study on use of power poles by bears in Greece, suggest that creosote treated power poles can be used to determine bear presence and monitoring via genetic studies. In Turkey, prior to this study, there has been

no study on bear marking behavior on power poles or on trees.

Methods

Signs of bears were investigated during 2007-2010 in northeastern Turkey. The study area is in the southern part of Kaçkar Mountains range and covers 400 km². The study was conducted on secondary unpaved and dirt roads that connect 12 villages and 10 temporary settlements to Yusufeli town center, and on trails in mountainous rugged terrain. Presence of claw marks, biting, rubbing and height of the marks were investigated. Poles along roads were searched by observers in a car while moving at 15-20 km/h.

860 poles which are either used for electricity or telephone signal transmission were searched *between* 800 m and 2200 m altitude. Not only power poles but also rubbing trees were searched during all field work. Ten temporary settlements were reached by walking more than 110 km on trails while searching for bear rubbing trees. Brown bear signs including

rubbing trees, scats, hairs, damaged trees were recorded, photographed and some samples were taken whenever available.

Preliminary Results

In the study area, 53 poles and 19 trees – especially Scots pines (*Pinus sylvestris*) – were found to be marked by brown bears. Marking behavior included biting, chewing, rubbing and clawing. Some power poles were found almost broken down due to gnawing. Other poles were only bitten or marked with claws without rubbing if more suitable poles were available within 50 meters. Rubbing trees in Turkey were generally young and with small diameters of 20-40 cm. Marking behavior of male brown bears appears to escalate during late spring.

Why some poles were found untouched and others were almost broken is a matter of curiosity even among the locals. Some of them claim only poles covered with tar or bitumen were selected by bears. Others propose that some kind of resonance on poles attracts the bears. The former suggestion sounds more realistic and was further investigated. In Turkey poles erected more than 20 years ago were treated with creosote, a wood preservative, while the more recent ones were not. Creosote-treated poles exposed to direct sunlight for many years release some tar or bitumen-like blackish sticky substance (Dr. Musa Atar, personal communication), which



brown bears are probably attracted to. However creosote is toxic and could thus be possibly harmful to bears.

Alternative chemicals containing CCB (Chromated copper bore or arsenate), copper sulfate and sodium dichromate are used also as wood preservatives in power poles (EPA 2007). No CCB-A treated power poles (which can be easily differentiated by their green color) were found to be marked by bears during field work.

Sign surveys can help monitor brown bear populations or individuals via genetic studies without need capturing bears and expensive monitoring costs (Karamanlidis et al. 2007). Besides, brown bear marking behavior still needs further investigation to understand its ecology in Turkey.

Acknowledgments

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Wildlife Trade Comes under the Spotlight in Lao P.D.R.

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With bear farming becoming progressively more difficult in Vietnam, the past few years have seen the establishment of a number of bear farms in neighboring Lao P.D.R. At least five farms are already known to be operating with some 150 animals among them (overwhelmingly Asiatic black bears), which are kept in typical small cages (1.5m x 2m). Using loopholes in the old wildlife law of Lao, many of these farms previously registered with provincial authorities to gain some measure of legality. The new Wildlife and Aquatic Law (issued by the National Assembly on 24 December 2007) determines principles, regulations and measures on wildlife and aquatic life in nature. Sun bears and Asiatic black bears are each defined in the first (I) list for protection under the Wildlife and Aquatic law as a "rare and near extinct species."

A number of governmental departments have recently been created or have seen their remits increased in order to implement "inspection and

investigation interrogation works against offenders of forestry law, law on aquatic animals and wildlife and regulations on forestry activities." These include the Department of Forestry Inspection (DoFI) and Department of Forestry Resource Conservation (DFRC), both within the Ministry of Agriculture and Forestry.

With Lao PDR hosting the South East Asian Games for the first time (late 2009) there has recently been an unprecedented increase in recognition of issues concerning unregulated wildlife trade and cooperation between Lao Government offices and international non-governmental organizations (INGOs). This has resulted in the establishment of a working group made up of representatives of key government departments and



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The Wildlife Law Enforcement Network Seminar brought together over 100 Lao government officials from numerous agencies to tackle the issue of wildlife crime.

INGOs including IUCN, the Wildlife Conservation Society, WWF, and Free the Bears Fund. The working group seeks to address and advise on the key issues of illegal wildlife trade including bile farming and trafficking of bears.

Free the Bears Fund has been an active member of the working group since its inception and continues to be involved with supporting and developing cooperative strategies. This increased cooperation has resulted



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This light box at Vientiane's International Airport reminds visitors of the need to stamp out the illegal wildlife trade to conserve Lao's threatened wildlife.

Community-based Conservation Action Planning for Brown Bears in Nepal

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Conservation Action Planning (CAP) for wildlife species in South Asia has largely been a 'top-down approach,' where subject experts, policy and decision makers develop the plans; these often fail to achieve the conservation goals, however, due to lack of understanding of the realities on the ground and/or lack of involvement ('buy-in') of the local communities. Conversely, community-based CAP is a 'bottom-top approach' that brings local communities, government, and NGOs to work toward achieving the desired community goals for conservation of wildlife in an area. Community-based CAP takes into consideration the on-the-ground situations, culture and traditions of local communities, and even the norms and values of an area. Therefore, such CAP is more likely to achieve success, as the local communities have a sense of ownership and moral obligation for its effective implementation.

in a nationwide campaign for wildlife conservation, supported by the Association of Southeast Asian Nations Wildlife Enforcement Network (ASEAN-WEN: www.asean-wen.org) through USAID, Global Tiger Initiative, and The World Bank, as well as locally active INGOs and companies; the working group is also investigating several opportunities for further campaigns. A recent "Lao-WEN" (Lao Wildlife Enforcement Network) workshop (as part of the greater ASEAN-WEN regional law enforcement initiative) was organized by FreeLand Foundation and again supported by Free the Bears Fund with generous funding by Hauser Bears and USAID as well as the joint Lao government, Finnish government and World Bank "SUFORD" Program. The meeting was held over two days in Vientiane in March 2010 with the aim of promoting awareness of the new law and ensuring that the roles of various government departments are clearly understood. Attended by over 100 officials from provincial Forestry Inspection offices, Department of Forestry, police, customs, military, and CITES, the meeting provided

an excellent forum for the sharing of experiences as well as creating a launch-pad for the establishment of a multi-agency Lao-WEN task force. It was announced at the meeting that all previous licenses for wildlife farms had been revoked and the government will soon begin inspections of existing wildlife farms to determine whether they are operating within Lao's national laws.

The Illegal Wildlife Trade Action Group is keen to continue to build on the momentum that has been established and to increase awareness and action on issues surrounding illegal wildlife trading in Lao PDR. This includes efforts to eradicate illegally operating bear bile farms. Perhaps coincidentally, the week of the Lao-WEN meeting saw the arrival of five new bears at the Tat Kuang Si Bear Rescue Centre including four cubs which were handed over to Luang Prabang Provincial Agriculture and Forestry Office and a sub-adult female Asiatic black bear that was transferred to the centre by authorities in Houaphan province. For more information on work in Lao please visit the website www.wildlifetradelaos.org. 🐻

The high mountains of Nepal encompass the prime habitats of large carnivores (brown bear, snow leopard) and associated wildlife (mountain ungulates). Due to remoteness, high altitude, and severe cold climatic conditions, these areas have received little conservation attention until fairly recently. The poor economic status of the local people and the hardships they face in their day-to-day lives are limitations in generating local support for wildlife conservation, particularly for government plans and policies. In 2004, the brown bear was confirmed from the Upper Mustang (Annapurna Conservation Area) and recently in 2008 we also confirmed its presence in Manaslu Areas of Nepal through field and questionnaire surveys. The population of brown bears in this area is very small, yet causes conflicts with local people, thus calling for a well-considered, community-based conservation plan.

The Biodiversity Research and Training Forum (BRTF) organized a national workshop on "Community-based Conservation Action Plan for Brown bear in Nepal" in Pokhara, Nepal, 21-24 January 2010. This workshop was held in collaboration with the BSG's South Asian Brown Bear Expert Team, and with financial support from the Rufford Small Grants Programme (UK), British Ecological Society (UK), and the Keidanren Nature Conservation Fund (Japan). Eighty-one people participated in this



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Searching for brown bear sign (diggings for marmots) in the Upper Mustang region of Nepal.

workshop, including 56 representatives from the local communities of Annapurna and Manaslu areas, officials from the government, subject experts, and members of NGOs. The representatives from the local communities were from five Village Development Committees (VDC) *viz.*, Lomangthang, Chhoser, Chhondup, Surkhang, and Charang of Upper Mustang, and Sama VDC Gorkha of Manaslu Conservation Area.

In the formal sessions of the workshop, presentations were made by subject experts on various topics related

to brown bears, wildlife conservation, and the importance of involvement of local communities. Presenters included Mr. Nar Bahadur Amgai, Project Director from Annapurna Conservation Area; Dr. Keshab Duta Awasti, Dean, Institute of Forestry, Pokhara; Dr. Govinda Basnet, Environmental Anthropologist; Mr. Kamal Jung Kanwar, Ministry of Forest and Soil Conservation; Mr. Achyut Aryal, BRTF; Mr. Narendra Lama, National Trust For Nature Conservation; and Dr. S. Sathyakumar, Wildlife Institute of India. As a representative of the local community and Chairperson of the Conservation Area Management Committee, Mr. Indra Dhara Bista mentioned that the participation of the local communities in CAP will be the key factor for its success and stressed the importance of immediate endorsement of the plan by the government. He also highlighted the linkage between tourism and wildlife, and the importance of accurately portraying the need for wildlife conservation in the tourist-based media.

During small working group sessions, participants from the local communities mapped the distribution



Participants of the workshop on 'Community-based Conservation Action Plan for Brown bears in Nepal', held in Pokhara, January 2010.

of brown bears and other wildlife in their respective areas. They then applied site-specific CAP for brown bears, detailing problems, solutions and responsibilities for each VDC. All the VDCs presented their draft plans and incorporated suggestions made by other participants during the deliberations. Local people from these VDCs are now focusing on a livestock insurance policy and development of a climate change adaptation strategy not only for people but also for wildlife.

During this workshop, a book 'Brown Bear Conservation Nepal' written by Achyut Aryal and a Poster on 'Bears of Nepal' were released. The draft Conservation Action Plan is currently under finalization and will be submitted to the Government of Nepal for endorsement and implementation. 🐻

The Use of Chest Marks to Distinguish Asiatic Black Bear and Sun Bear Individuals in Thailand

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Assessing the recovery and conservation status of threatened species usually depends on the precision of population estimates of target species (Skalski et al. 2005). Bears present a challenge for estimating abundance because of their elusive behavior (Garshelis 2006). Generally, mark-recapture techniques offer a powerful method for estimating abundance. Population estimates of bears have mostly been conducted by using

mark-recapture with radio-collared animals (Garshelis et al. 1999), camera trapping re-sighting of bears marked with ear tags, and DNA-hair analysis (Boulanger et al. 2004). Recently, facial and pelage patterns of Andean bears have been used as unique marks to estimate bear abundance (Rios-Uzeda et al. 2007).

In this work, we present preliminary results from an experiment that sought to identify individual



Asiatic black bears and sun bears, as a prelude to mark-recapture population estimation. Remote camera techniques are beneficial for monitoring cryptic mammals that have unique identifiable coat patterns (Carbone et al. 2001). We asked the following questions: (1) Are the chest marks of individual Asiatic black bears and sun bears distinguishable? (2) What field conditions are practical for obtaining camera trap photographs of these

chest marks? (3) Can the method be applied to estimating bear abundance?

The study was conducted in Khao Yai National Park (KYNP), the third largest national park in Thailand at 2,168 km², designated as a World Heritage site in 2005. KYNP is in central Thailand (N14°05' E101°50'). The elevation ranges between 100 to 1350 meter above sea level. The dominant vegetation is semi-evergreen forest.

Question 1: Bears have distinctive cream or white chest marks which may be different between individuals. We observed and analyzed bear chest marks at the Banglamung Wildlife Breeding Center (BWBC) where captive bears confiscated by government agencies are kept. Black bears and sun bears were in separate cages. We took photographs, including the chest marks, of 23 black bears and 20 sun bears. We conducted a blind experiment, using nine graduate students unrelated to the project, to test the practicality of differentiating individual bears. All nine participants correctly identified all black bear and sun bear individuals.

Question 2: We conducted semi-wild trials of camera trap arrangements in outdoor enclosures at BWBC to assess how best to obtain chest mark photos from free-ranging bears. We used digital video scouting camera trap "Stealth Cam STC-I590" (Stealth Cam, Grand Prairie, TX, USA) to photograph bears in the outdoor enclosures. Three camera traps were mounted on trees about 3 m apart and facing each other in a triangular arrangement. As bait, we hung bananas mixed with honey above the ground at the center point between cameras; the infrared beams were set below the bait, one meter above the ground. Camera traps were set on burst mode to take multiple exposures of four sequential still pictures with one minute delay between triggering. This trap arrangement was successful in getting bears to stand and photographing chest marks clearly from at least one of the three cameras.

Question 3: In 2009, 12 baited camera trap stations were set in a 35 km² area in KYNP during September-October (153 trap-nights) and November-December (98 trap-nights), following a survey of bear presence/absence based on sign. The camera traps were mounted and set to take bursts of four photos. as in the semi-wild demonstration. We used 6-7 kg of beef for bait at each station. We obtained 440 photos of black bears

and 34 photos of sun bears; most photos were of bears walking into, around, and out of the station. Of these, 13 photos of black bear were of standing bears that clearly showed their chest marks, enabling individual identification of five bears, including four males and one female. (In all cases, we could also ascertain sex the bears.) Sun bear chest marks were blurry because of bear movement; however, we obtained one photo of two sun bears, indicating the presence of at least two individuals. Two black bears were recaptured two times. In addition to the chest marks, there were other unique marks that were helpful to identify black bears, including body size and condition, muzzle color patterns, and coat color.

In summary, (1) black bears and sun bears can be individually identified with high accuracy using unique chest marks; (2) it is possible to arrange cameras and bait in a way to obtain photos of these chest marks; and (3) these techniques can be applied to wild bears. We expect that mark-recapture estimation of bear abundance in the wild for these species is a real possibility, depending on sample sizes that can be obtained.

We plan to continue our research on bear density estimation this coming year and have plans to survey in different areas to get better estimates of bear abundance for the entire national park. This should be considered preliminary research on developing the survey method, and we currently do not advise its use until a larger set of photographs from this study have been analyzed validating the approach.

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Grizzly Bears and Mining: rationale and objectives of a study on the effects of industry on bears

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In west-central Alberta, Canada, extensive open-pit mining, logging, oil and gas industrial developments occur at the interface between the foothills region and Eastern Slopes of the Rocky Mountains (Nielsen et al. 2004, 2006). With expansion of industry comes a complex network of roads, cut lines and trails that facilitate public access into previously remote places and increase the chance of human-bear conflicts (Ciarniello et al. 2007, Roever et al. 2008). At least 90% of human-caused bear mortalities in Alberta occur within 500 m of a road or 200 m from a trail (Benn and Herrero 2002). Based on these high mortality rates as well as low bear densities in the province, a Grizzly Bear Recovery Plan for Alberta was approved in 2008 (Alberta Grizzly Bear Recovery Plan). The Plan recognizes the need to fill gaps in knowledge of bear response to industrial development to minimize bear mortalities and to ensure the persistence of the bear population.

Major coal resources have been identified in west-central Alberta, and mining operations are ongoing or have



Aerial view of Cheviot mine haul road.
Active pit in the background partially hidden by topography.

been approved throughout the region. Cheviot mine is one of the largest operations, with a projected direct disturbance area of 7,455 ha and expected additional edge/buffer effects. A major concern is that the Cheviot mine will have long-term negative impacts on bears in the adjacent Jasper National Park, Canada's largest mountain park. Apart from negative effects associated with active coal pits, this mine has a 23 km coal haul road which is a potential barrier to wildlife movement. The United Nations World Heritage Committee specifically directed the Canadian Government to 'ensure that adverse impacts of the operation of the Cheviot mine are minimized and mitigated'.

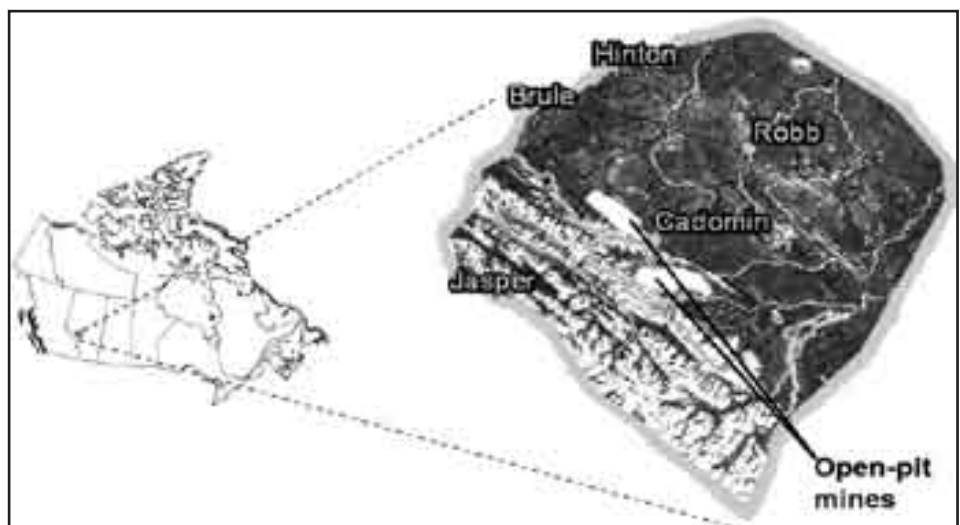
In 1999, the Foothills Model Forest (currently Foothills Research Institute - FRI) Grizzly Bear Program (Program leader: G. Stenhouse) set off to assess bear movement, habitat selection, and foraging before active mining started at Cheviot mine. In 1999-2003, before Cheviot, the program accumulated a large database of GPS locations from radio-collared grizzly bears in the region. In 2007, Bogdan joined Mark Boyce's research lab at the

University of Alberta to collect bear data during the mining at Cheviot (field work occurring in 2008-2010), and analyze these data in comparison with data obtained by FRI before the mining was initiated at Cheviot. In addition to analyzing effects of active mining on bears (Cheviot), we also investigate bear response to reclaimed (ecologically restored) mines (Luscar and Gregg River). If bears concentrate on reclaimed mines to hunt ungulates or graze on plant foods, there is potential for mines to become attractive

sinks because of high risk of poaching on these vast open areas.

Cheviot, Luscar and Gregg River mines are located at the center of our 10,000 km² study area, which includes part of Jasper National Park, Whitehorse Wildland Park, and public lands. The aims of the study are to:

- Build statistical models to compare grizzly bear movement and activity budgeting, before vs. during Cheviot mine development. These models will allow understanding of what influences bear movement on industrially modified landscapes.
- Use novel technologies (digital cameras and pedometers attached to GPS radio-collars [10]) to identify fine-scale behavior by grizzly bears, particularly habitat use and preferred travel routes. These methods will enable informed suggestions on mitigation of ongoing active mining such as through designation of bear movement corridors.
- Investigate bear foraging on and around reclaimed mines, and build a statistical model to predict foraging, particularly ungulate kills. This model will allow understanding of bear diet on and around mines and suggestions on mine reclamation.



Study area in west-central Alberta, Canada

- Simulate bear movements in response to changes in mining regime, i.e., expansion of the active pit at Cheviot followed by reclamation. These simulations will allow mitigation of Cheviot mine development by identifying critical habitat features and movement routes that bears may use in relation to expansion of mine pits and haul roads.
- Relate movements of radio-collared bears to intensity and timing of human use of trails on and around mines. This analysis will allow suggestions on human-bear conflict prevention, such as through identifying times of year/day when human-bear encounters are more likely to occur.

Given the interest of mining companies in our research progress (e.g., Teck Coal Ltd., Sherritt International Corp.), we are confident that our data, statistical models, and recommendations will be considered in mine planning, reclamation, and human access management. The International Association for Bear Research and Management has provided much needed support for this project in



Typical open landscape of a reclaimed mine (Gregg River)

2008 and 2009, and we will be happy to bring updates on research progress in the months to come.

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Camera and pedometer GPS radio-collar fitted on a female grizzly bear

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Update to American Black Bear Range Mapping Project

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In the last issue (November 2009), we announced plans to launch a survey to update the range of Ameri-

can black bear across North America. The project was delayed a bit due to technical issues. As I write this, about 26 state/provinces have finished their maps and another 17 have started. We are using a custom-made web application called "Bears Where?" designed by Drs. Ed Mahoney and Yue Cui of the Center for Spatial Analysis of Recreation and Tourism (CSART) at Michigan State University. This application works over a web browser and allows the user to change the view from map, satellite, or topographical view. They can then select from two tools: color-code hexagon grids as either breeding or non-breeding range or add bear sightings as points. We asked for point locations only in areas outside of designated occupied range.

Our goal with the bear sightings was to include those areas where bears occur sporadically, too infrequently to be considered as occupied range, as black bears appear to be expanding their range in many areas. We hoped mapping these areas now would add another dimension of detail and help seeing where future occupied range might occur. Our initial launch requested respondents to complete mapping their area by April 30th. If we don't complete data collection by this date, we hope it's soon afterwards. We estimate post-processing will take another few months for a fall completion. Our hopes are to present this at the 20th IBA meeting in Ottawa, Canada, in July 2011.

If you'd like to see a demonstration of this application, visit <http://www.bearswhere.com/> and type US_DEMO (with the underscore) as both the username and password. The demo is Michigan. Feel free to add and edit any data, even saving and logging back in, because this is not connected to the actual survey. Please be aware that this application requires Adobe Flash Player. If you don't have this program installed, you can download a free copy from www.adobe.com/go/getflash/. 

Grizzly Bear Outreach Project (GBOP) Plans Expansion

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Over the last seven years, the Grizzly Bear Outreach Project (GBOP) has become a well-respected community education program in and around the North Cascades ecosystem of Washington State where fewer than 20 individual grizzly bears remain. Our team spends time conducting one-on-one meetings with key people in rural communities to share information about grizzly bear ecology, behavior, safety, and recovery under the Endangered Species Act. Much of our work revolves around the more numerous black bears in the same region, especially with regard to 'Bear Smart' programs for towns in bear country. We offer community presentations and act as a conduit for the exchange of accurate information between government agencies and the public. Our neutral, science-based approach resonates well with the people of rural Washington who appreciate our candor and open-mindedness. We remind ourselves that listening is as important as talking during all of the events we are involved with.

Now we are planning to expand our activities to include community outreach about wolves and cougars, and also our geographic scope to include the Selkirks grizzly bear recovery area of northeast Washington State and northwest Idaho. We are looking forward to working with partners in the Selkirks who have already accomplished a lot for grizzly bear conservation. We will be reporting on these efforts and the general evolution of our project in the *International Bear News* over the coming months. See our new website at www.bearinfo.org 

BEARS (Bear Education Awareness Research Sanctuary) at the Alaska Wildlife Conservation Center

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On behalf of the Alaska Wildlife Conservation Center (AWCC), we are most pleased and excited to announce plans to open a state-of-the-art interpretive education facility for Alaskans and visitors from around the world. Many sponsors have graciously selected our center as the future home of Alaska's premier bear educational outreach and resource institute. We are truly humbled by this opportunity to share the life stories of bears through their cultural significance to native people to their role as apex predators living in proximity to Alaskan citizens. But we also want to draw attention to the extant species of bears, some of which are more endangered than others.

We will have an opportunity to promote conservation efforts as well as highlight the ongoing work of so many members of the IBA community dedicated to bear conservation research endeavors. Education has always been at the forefront of our mission at the AWCC, and although we spearhead this in conservation programs in partnership with various research entities at the local, state, and federal levels, we are well aware of the importance of developing outreach programs and providing resources for educating citizens and visitors to Alaska with respect to our state's wildlife heritage. We exhibit carnivores and ungulates among other

native faunal groups at our conservation center and feel strongly about developing education programs for all of our ambassador species. The BEARS Center will provide an educational opportunity to school groups, local Alaskans, and visiting summer tourists. ■

Cultural Zoogeography of the Andean Bear around Cordillera Azul National Park, Department of San Martín, Northeastern Peru

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Among the factors that determine the distribution range of species, the relationship such species have with human culture and land-use change is very important. The cultural zoogeography, a term proposed by the geographer Charles F. Bennett



Figure 1: Map of study area.

in 1960, covers interactions between species and human cultures (Bennett 1960). The population growth and the transformation of the forest into agricultural land where the Andean bear (*Tremarctos ornatus*) occurs motivates us to incorporate the concepts of cultural zoogeography to understand better the Andean bear situation.

The aim of this study was to determine the cultural zoogeography of *T. ornatus*: learn how land use by human populations and their relationship with the species influence their distribution range.

The study area was located in Chazuta District, Province and Department

of San Martín, northeastern Peru. This area is part of the Cordillera Azul National Park (CANP) (Figure 1), declared a Natural Protected Area by the Peruvian Government in 2001 and the largest extension of intact mountain forest remaining in Peru, with approximately 1,353,190.85 ha (INRENA 2006). The objective of CANP is to protect areas of high biodiversity and watershed headwaters of from deforestation, resulting from the intensification of agriculture, livestock and logging pressures. Deforestation in the Department of San Martín, affecting up to 26.47% of the total area (IIAP & GRSM, 2005) is expanding into areas closer to CANP.

Semi-structured interviews were conducted in six communities



Figure 2: Interview with a local resident in the community of Canayo, Chazuta

© D. Gálvez-Roeder.

(Figure 2), both native and settled. Information collected indicate that Chazuta District is part of the distribution range of the Andean bear, despite reports of the CANP showing no sign there. According to interviews, resettlement and hunting appear to have negatively affected the distribution of the species. Many people say that the "Isnachi" (local name for *T. ornatus*) has retreated into the highlands of the mountains due to the presence of more small farms. Hunting pressure is moderate to low, because bears are hard to hunt in the forest. Bears are hunted for meat, fat and other uses (Figure 3). Local people believe that bear fat relieves rheumatic pain and helps gaining more physical strength. Children, for example, are rubbed with grease to "grow stronger." Bear products are exchanged between the communities once there is knowledge of their availability.

The conflict between bears and livestock and agriculture does not appear to be high. Local people view bears as "quiet" animals and "chontero", that is consuming only "chonta" (a type of palm) and other plant species. Very few people thought that bears also ate meat or that they are aggressive and attack

cattle. Most of the people did not know the conservation status of the species. Also, we note that the greatest threat to the Andean bear in the area is the expansion of agriculture and increasing human resettlement in the Chazuta District. This is in contrast with efforts to conserve forests that local people engage in together with CIMA (Centro de Conservación, Investigación y Manejo de Áreas Naturales), the NGO in charge of managing CANP. There is still work to do on the spatial analysis of the distribution of the species and the threats posed by land-use change.

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Figure 3: Evidence for the presence of Andean bear in the study area.

A: Os penis bone, used for medicinal purposes related with male sexual impotence.

B: Andean bear fat, used as "medicine" in problems of rheumatism.

Photos obtained with permission of local people in Chazuta. 🐻

Profiling Captive Wildlife Professionals – Inaugural Column

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In an effort to highlight the diversity of ex situ conservation efforts focused on bears managed in captive wildlife facilities and breeding centers, I have launched a new column that will feature an eclectic group of wildlife professionals from husbandry specialists to collection-based researchers, conservation educators, as well as veterinary scientists, clinicians, and pathologists. Featured personnel will include those working with academic laboratory populations as well as those individuals involved with the manage-

ment of living institution collections (e.g., zoos, marine parks, sanctuaries, and rehab facilities). These individuals may work with captive bear populations selected for educational display, breeding programs, research or for a combination of purposes.

Suzanne Hall San Diego Zoo's Institute for Conservation Research

The San Diego Zoo is home to six of the eight species of bears: the giant

Captive Bears

Captive Bears

panda, Andean, brown, sloth, polar, and sun bears. The zoo's Institute for Conservation Research has developed a strong program of bear research via the Giant Panda Conservation Unit (GPCU) of its division of Applied Animal Ecology. The GPCU capitalizes on the opportunity to study bears in captivity and connects these efforts with research on wild bears. Recent work has focused on bear maternal care, sensory ecology, behavioral development, weaning welfare, stress and field studies in several species.



Suzanne Hall is a behavioral ecologist who has been with the GPCU since 1998. After receiving her B.S. from U.C. San Diego, she began her career in animal science as a field assistant on a project in Costa Rica, studying vocal communication in parrots. She found field work alternately inspiring and difficult: successful identification and observation of individuals was often punctuated by losses due to illicit nest poaching. These experiences helped shape her commitment to conservation, both in her professional and personal life.

Suzanne began volunteering with various research projects at the Institute for Conservation Research (formerly Conservation and Research for Endangered Species) in 1996. Studies on rhinoceros led to polar bears, which in turn led to pandas. With

the GPCU, she has worked primarily with Asiatic bear species, focusing on maternal care and infant development. Her work with giant pandas has taken her to Wolong's panda breeding base in Sichuan, China.

At Wolong, she focused on male breeding behavior and maternal care, as well as scent communication and environmental enrichment studies. She traveled to Mexico City's Chapultepec Zoo to assist staff with breeding and pregnancy monitoring in pandas. In recent years, she has de-

voted much of her time to sun bears, working with the Bornean subspecies.

Until recently, the San Diego Zoo housed the only successful breeding pair of Bornean sun bears in North America. Working collaboratively with husbandry staff, Suzanne has studied three litters born to this pair between 2004-2008. She credits the positive relationship of sun bear keepers and researchers as instrumental in facilitating this project, and hopes to see future births of Borneans at other facilities in the U.S.

Suzanne lists the 1999 birth of Hua Mei, the first surviving panda cub in North America, among her personal highlights. She recalls spending countless hours in front of a monitor observing the female Bai Yun in 1998, hoping for a birth resulting from an artificial insemination months before.

Since the state of knowledge of a giant panda pregnancy was limited at that time, staff watched Bai Yun round-the-clock for six months in order to ensure a birth would not be missed. It was disappointing to end that long pregnancy watch without realizing a birth, and this effort made the arrival of Hua Mei the following year that much sweeter.

In accordance with the belief that "we love only what we understand," Suzanne has embraced the Institute for Conservation Research's mission to inspire change through education. She has given numerous talks highlighting various bear species to school children and adults, has supported Bear Awareness events at the San Diego Zoo, participates in regional science fair activities, and is a regular contributor of bear-related material to the conservation blog at <http://blogs.sandiegozoo.org/blog/category/default/conservation/>.

In addition to research with bears, Suzanne has been fortunate to apply her behavior skills to other conservation projects with the Institute for Conservation Research. She has worked on aggression mitigation in ungulates, and most recently participated in studies of the critically endangered California condor. In working with birds once again, it appears that the arc of her career thus far has come full circle.

Suzanne is interested in developing projects with captive bears that can facilitate work with their wild counterparts. To this end, she welcomes input from those working in the field. She can be reached at:

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Marcus has always been fascinated by large carnivores, and in the 1980's and early 90's bears and lynx were considered very rare and wolves were virtually absent in most parts of Scandinavia, including his home in central Sweden. However, over the last ten years, the hunting quotas in Sweden have increased by a factor of four in response to increasing bear numbers, and today the harvest rate corresponds to about 8% of a population of 3,200 bears. Management goals have changed from recovery efforts to stabilizing the population at the present level.

Marcus obtained his masters thesis within the Scandinavian Brown Bear Research Project (SBBRP) and for the last five years has been working as a carnivore manager at the county level in Sweden. He was dealing with management plans, protective hunting, monitoring, inspection and compensation of damages caused by large carnivores (i.e. brown bear, lynx, wolf, wolverine and great eagle). In the Spring of 2009, Marcus took a leave of absence from this position to return to the SBBRP for a Ph.D. studying mechanisms that cause nuisance bears. Marcus is thrilled to get this opportunity to try and increase our understanding of the reasons some bears approach people.

Wherever people and bears share the landscape,

some bears come near human habitation and seem to lose their fear of people. The present management paradigm is that the bear is seeking human-derived food, i.e. the food-search hypothesis. Bears approaching people is considered to be an "unnatural behavior," and, based on recent polls, many people in Sweden are afraid of bears. The present management response is to scare bears away, secure the food, or kill the bear.

In Scandinavia, SBBRP has shown that mostly subadult bears use habitats close to people, whereas older bears use more remote areas. SBBRP has also documented that intraspecific predation by adult males is the major natural mortality factor for subadult bears. Subadult bears may therefore use habitats close to people to avoid dominant adult bears, i.e. the social-organization hypothesis.

Therefore, Marcus will try to compare the food-search and social-organization hypotheses by studying mortality risks, dispersal, diet, and probability of encounters between subadult and adult Scandinavian brown bears in relation to human settlements. SBBRP has documented bear movements by sex and age within a study area in central Sweden since the project started in 1985. Bear movements will be analyzed using GIS. Diet will be studied by analyz-



ing scat samples from bears near settlements compared to when they forage in remote areas. Sex, age, and body measurements from bears shot during regular hunting will also be analyzed in relation to people. Marcus hopes the results will improve the way managers deal with nuisance bears and other large carnivores.

You can contact Marcus Elfström at the Department of Natural Resources and Management, Norwegian University of Life Sciences, N-1432 Aas, Norway. Email: marcus.elfstrom@umb.no. His supervisors are Dr. Jon Swenson, Dr. Ole-Gunnar Støen, and Dr. Andreas Zedrosser. You can find more information about SBBRP at: www.bearproject.info. 🐾

Truman's 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

- Visit: www.bearbiology.com/iba/stu.html
- Follow the links to request an invitation
- Do NOT reply to list serve messages using your "reply" button. You must return to Truman and respond within the list serve or else other members will not receive your response.
- 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. 🐾

Publications

BioOne Top Ten List of Cited Articles

Rich Harris
Ursus Editor

Since 2005, *Ursus* has been part of the BioOne family. BioOne is one of the leading electronic distributors of scientific publications on biology and conservation and management of wildlife. As of year's end 2009, BioOne was serving 154 publications (almost all of which were ranked by ISI), and had published almost 79,000 articles. Our participation in BioOne has made *Ursus* much easier to access from various locations. BioOne1 (there is also a BioOne2, we are in the first) has over 1,262 institutional subscribers, and is also distributed free of charge to some 2,500 institutions in 95 less developed countries (and there are also almost 31,000 subscribers to their Table of Contents service). It had received a total of over 23 million "hits" – which sounds impressive (or even painful) to me! Participation in BioOne also helps defray publication costs for *Ursus*. Our revenues from BioOne have increased gradually each year since joining.

In their 2009 annual report, BioOne provided us a list of the "top 10" articles cited by users of BioOne. I'm not sure this will make it onto the David Letterman show, but I'd like to congratulate the authors of the following papers for producing work that has interested so many readers.

Dave Garshelis, Wang Hao, Wang Dajun, Zhu Xiaojian, Li Sheng, and William J. McShea. Do Revised Giant Panda Population Estimates Aid in Their Conservation? *Ursus* 19 (2) November 2008.

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Mark A. Edwards, John A. Nagy, and Andrew E. Derocher. Using Subpopulation Structure for Barren-Ground Grizzly Bear Management. *Ursus* 19 (2) November 2008. ■

Recent Bear Literature

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De Barba, M., L. Waits, P. Genovesi, E. Randi, R. Chirichella, and E. Cetto. 2010. Comparing opportunistic and systematic sampling methods for non-invasive genetic monitoring of a small translocated brown bear population. *Journal of Applied Ecology* 47(1):172-181.

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20th Eastern Black Bear Workshop

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The 20th Eastern Black Bear Workshop (EBBW) will be hosted 1-4 May 2011 by the North Carolina Wildlife Resources Commission (NCWRC). The workshop will be held in the Kanuga Conference Center (www.kanuga.org) in Hendersonville, in western North Carolina, near the Nantahala National Forest, the Blue Ridge Parkway and the Great Smoky Mountains National Park.

The 20th EBBW will be a working session designed for biologists involved with bear population management and monitoring. The agenda has not been finalized, but due to the interest in the theme of the canceled 2009 EBBW in Minnesota, we plan on having similar sessions focused on approaches to using harvest and research data to discern population

trends and geographic patterns. A recent survey of state bear biologists showed a variety of techniques utilized to estimate bear populations; the 20th EBBW will explore these various methods and newer modeling approaches.

There will be working sessions, a poster session and a limited oral paper session. The poster and limited oral paper session are open to anyone wishing to submit an abstract. Information on submission policy will be published soon. Slots for oral presentations will be very limited, with priority given to completed research, development of new techniques, and/or findings of broad significance. There will also be a half-day meeting for members of the SEAFWA Black Bear Committee.

The registration fee has not been determined yet.

Room rate: US\$103.00 per night (approximate)

Student rate: US\$88.75 per night
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- Tri-Cities Regional Airport, TN (110 miles).

We can provide shuttle service from Asheville Regional Airport to Kanuga Conference Center.

Watch for details in upcoming issues of the International Bear News and at www.bearbiology.com

BEARTREK Acquires Rare Andean Bear Cub Footage

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BEARTREK is Wildlife Media's global non-profit campaign for bear conservation. It includes a major feature-length documentary film production ('BEARTREK'), along with



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film shorts and an emerging social media campaign to bring attention to the plight of the world's bears. Along the way we fund and help provide exposure for critical bear research and education projects in the locations that we are filming. One of the biologists we work with says that "Wildlife Media's footage has been the single biggest factor in being able to raise funds for our project".

To date we have filmed brown bears in Alaska, sun bears in Borneo, and more recently, Andean bears in Peru. So far we have provided funds for research and conservation activities in the latter two locations, in addition to polar bear research in the Western Hudson Bay of Canada. In addition, profits from our feature length film will be returned to conservation. Our film combines natural history, conservation, adventure, and culture in an attempt to reach new audiences with critical messages about wildlife. Most importantly though, our work is designed to create a wave of awareness, linked with opportunities for the public to donate to and support conservation in a variety of ways.

We are also a small, nimble organization that is able to jump on opportunities to obtain rare footage of bears and quickly produce films that can have great impact for the bears and the biologists studying them. One example of this is the Andean bear cub footage we obtained in December in collaboration with Robyn Appleton who is conducting research on this elusive species in northern Peru.

You can watch a clip that includes unique footage of a very young wild Andean bear cub at <http://www.wildlifemedia.org/peru>. To watch our 90 second BEARTREK trailer you can go to www.wildlifemedia.org. We continue to fundraise and would appreciate any help you can provide to spread the word about our efforts for global bear conservation.



CITES Parties Reject U.S. Proposal to List Polar Bears under Appendix I

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At the fifteenth meeting of the Conference of the Parties to the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), the U.S. proposed moving polar bears (*Ursus maritimus*) to Appendix I from Appendix II because it believed that the polar bear meets the standards in which a species "is or may be affected by trade." The U.S. stressed that their proposal was not intended as a criticism of management efforts by range state, highlighting that the proposed uplisting was a precautionary approach to ensure commercial trade would not compound existing threats to polar bears.

The U.S. listed polar bears as a threatened species under its Endangered Species Act on May 14, 2008. Polar bears are listed as Vulnerable by IUCN, which now lists global warming as the most significant threat to polar bears primarily because of melting sea ice.



The Committee of the Conference of the Parties in charge of reviewing listing proposals, rejected the proposal in a vote: 48 in favor, 62 opposed, and 11 abstentions. The proposal was not reopened during the plenary debate and the decision of the Committee to reject it was thus adopted. Parties and NGOs expressed divergent views on the proposal. Canada emphasized that trade does not have a detrimental impact on the species and referred to a document on polar bear management and trade which stated that the species does not meet the biological criteria for listing in Appendix I. Rwanda, Qatar, Egypt, Yemen, and Defenders of Wildlife voiced support for the U.S. proposal, citing the need to limit all threats to the species. An Inuit representative from Canada stressed that while climate change poses the strongest threat to polar bears, an Appendix I listing would not address this threat. The European Union opposed the proposal on the grounds that the biological and trade criteria for transfer to Appendix I were not fulfilled, noting concerns that listing under Appendix I could have a negative impact on the management of the species.

Norway suggested that in the future the IUCN Polar Bear Specialist Group should have the opportunity to review the proposal before it is submitted to CITES. ■

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IBA Member Application, page 2

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		1. Expertise	2. Advise/Assist IBA			1. Expertise	2. Advise/Assist IBA
Accounting				Legal			
American Black Bear **	years			Legislative Process			
Asiatic Black Bear **	years			Life History			
Andean Bear **	years			Management			
Awards *				Member Concerns *			
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Brown Bear **	years			Nuisance / Damage Management			
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Disease				Pathology			
Economic Development *				Physiology			
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Ethics *				Population Dynamics			
Evolution				Quantitative Analysis			
Field Research				Sloth Bear **	years		
Financial Management				Strategic Planning *			
Food Habits				Sun Bear **	years		
Genetics				Toxicology			
Giant Panda **	years			Travel Grants *			
GIS				<i>Ursus</i> Journal *			
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** Please indicate number of years of experience with each species

* Indicates an IBA committee

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Please list major field of study _____

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

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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

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

The International Association for Bear Research and Management (IBA) is a non-profit tax-exempt organization open to professional biologists, wildlife managers, and others dedicated to the conservation of all bear species. The organization has 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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