BEAR-PEOPLE CONFLICTS WORKSHOP

POLAR BEAR FOCUS DAY SUMMARY

NOVEMBER 18, 2009
CANMORE, ALBERTA

ABSTRACT: This document presents a synopsis of the presentations and discussions at the Third International Bear/Human Conflict and Polar Bear Focus Day. Topics include bear behavior, bear/human conflict updates, bear management, people management, attractant management, education and training, deterrent and detection tools, community-based programs, and risk and liability. A separate summary of the Bear-People Conflicts Workshop (November 15-17 in Canmore) is published separately and posted on the Red Deer College website http://www.rdscience.ca/bear/bear.html

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POLAR BEARS INTERNATIONAL

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3rd International Bear-People Workshop
POLAR BEAR FOCUS DAY SUMMARY

NOVEMBER 17, 2009

CANMORE, ALBERTA, CANADA

PRE-WORKSHOP EVENING SPEAKER

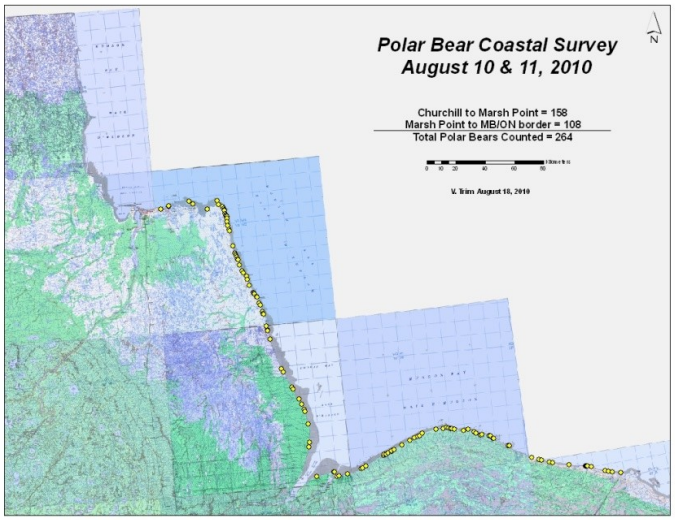
SPEAKER INTRODUCTION

Robert Buchanan, Polar Bear International (PBI)
These last 3 days [discussing brown and black bear-people conflicts] have presented us with opportunities to share thoughts, ideas and concepts. Over the last 25 years of traveling to Churchill, I've developed a great deal of respect for the "boots on the ground" in the Polar Bear Alert program. These people seem to understand the importance of keeping men and bears separate. To tell you that I learned a lot from these folks, as well as their hunter and trapper friends, is an understatement. They taught me about the importance of wildlife. They taught me about what it really means to care about the animals, and they taught me about passion. All these things I have taken to heart.

Two people have taught me so much. One is Parker, who taught me the importance of hunting and trapping, and Darryl Hedman. They have the job of taking care of the people but really they keep people away from the bears. Like Terry DeBruyn said in his final remarks, we're here talking about bear behavior, but our biggest problems stem from human behavior

PBI has a short film about the proper use of culvert traps and documentation of Conservation Manitoba's helicopter sling protocol for bear relocation for professionals. The short film is available at http://gallery.me.com/bj_kirschhoffer#100246 and at http://www.vimeo.com/15223145. If anyone is interested in owning a DVD, please contact Amy Cutting.

Darryl Hedman, Manitoba Conservation Northeast Regional Wildlife Manager
[Hedman's evening presentation focused on polar bear ecology as it relates to Churchill and Manitoba, the Polar Bear Alert program, and their bear safety recommendations.]



Of the 19 subpopulations of polar bears, 13 of them are in Canada. The polar bears around Churchill are part of the Western Hudson subpopulation, and it is the most studied of all the Canadian subpopulations.

Manitoba Conservation has surveyed polar bears in September since 1969. In 2005, they began an ice-out July survey. The latter survey helps managers understand polar bear

behavior after they come off the ice. Even with just 4 years of data, they've discovered that the bears don't necessarily come off the ice to the south and move north. During the surveys, Manitoba Conservation records bear numbers, their body condition, and their location. Hedman has tried to survey polar bears in November to confirm hunters' observations about large November congregations of polar bears in other places besides Churchill, but has been unable due to unsafe weather conditions. In addition to the surveys, Manitoba Conservation tracks about nine collared bears in Western Hudson Bay.

In the spring, when males come onto land, they stay near the water on sandy ridges and sand spits. The sub adults and females with cubs are usually within a kilometer inland of the beach ridges. Hedman has seen as many as 18 males in congregations on sand spits. It seems to him that the bears have gorged themselves all spring and won't go any further inland than they have to, while waiting for the ice to form in the fall.

Polar bears may encounter and feed on goose eggs, nestlings, and carrion, though not in great quantities. Beached whales will occasionally provide some summer feeding. Hedman has seen dead polar bears along the coast, though he has never seen evidence of scavenging by other bears.

Climate change affects female polar bears more than other cohorts Females come ashore in the summer and those that are pregnant begin a fast that will last up to 10 months while they are in dens. During that time, they will lose half or more of their summer body weight. The sea ice itself is also melting weeks earlier than in the past, and this gives polar bears less time to feed and pack on critical weight. The earlier melting of the sea ice may also affect seal reproduction. In some years, the sea ice is also forming later in the fall, further stretching the fasting time on shore and allowing more time for hungry bears to get into trouble with people.

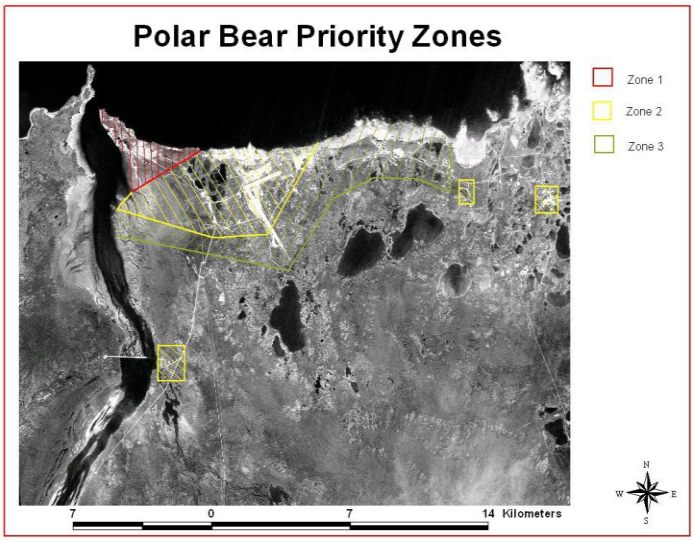
All of these factors negatively affect lactation, growth, activity and maintenance of body health. This increase in stress for females emerging from their dens, will ultimately affect polar bear populations.

POLAR BEAR ALERT PROGRAM

The Manitoba Polar Bear Alert program began in the 1960's, and has four objectives:

1. Protection of human life and property (with an emphasis on life)
2. Protection of the polar bears of Hudson Bay from unwarranted demise or harassment
3. Minimize potential food-conditioning
4. Ensure the safety of the Manitoba Conservation staff

The Polar Bear Alert Program outlines priority zones for polar bear management. Bears found in Zone 1 are trapped and sent to the holding compound for 30 days. The holding facility can accommodate up to 28 bears. After 30 days are up, bears are transferred 40 miles north of Churchill. In the past Conservation Officers used to take them up to 200 miles to the south, but they frequently came back. If the bear comes back to Zone 1, it is captured and put into the holding compound until the ice freezes in November. The holding compound buys time that helps to accomplish the first 2 objectives of the Polar Bear Alert program.



Zone 2 has roughly the same policies as Zone 1, though with some leniency. If a polar bear comes into Zone 2 it is monitored and encouraged to leave the area. Conservation officers "walk the bear out" of the area by herding them with vehicles and hazing them with cracker shells.

The Polar Bear Alert program includes a lot of bear handling, though it was modified recently to reduce the amount of handling. The most bears that they've handled was 176 in 2003. Since then, they've been stricter about zone boundaries and, as a result, they trap fewer bears. A roughly equal number of male and female sub adults wander into Zones 1 and 2 and are trapped or hazed.

Traps are baited with seal meat and the bears generally walk in. Manitoba Conservation has used snares, but the bears eventually became snare savvy and avoided them. Trapping a family group can be problematic. The adults can be sedated by a "green charge" from a dart gun in relatively close proximity; however, the same charge will hurt cubs. The officers open the traps and inject the cubs with a dart pole. This puts the officers in some danger of being swiped by the cubs. Officers weigh and tattoo the trapped bears. They try to keep the polar bears sedated lightly enough so that they wake up and climb out of the helicopter cargo net just as they are being released.

Hedman has attempted to get orphaned cubs adopted by other females with cubs six times in his career. However, he has never witnessed a successful adoption.

CHURCHILL POLAR BEAR SAFETY RECOMMENDATIONS

Manitoba Conservations makes the following recommendations to workers and visitors to the coast of Hudson Bay:

- Understand polar bear behavior and movements. Always assume they could approach from land or water.
- Designate a bear monitor in your group and don't distract the monitor by giving them other duties. When selecting your bear monitor, determine who is best able to make the 2-second decision whether to shoot the bear. Their reaction that could save a person's life.
- Keep an open, clean camp with a line of sight in all directions. Dispose of attractants such as goose guts far away from your camp or home site.
- If you are flying into an area by helicopter, look before you land. Watch for signs of polar bear activity. Bears may be in buildings that have been abandoned. Recent kill sites probably mean bears are around.
- If you see polar bears at your work site, wait until the bears are gone. If polar bears are there, don't work there that day.
- Treat all bears as if they are dangerous.
- Do not feed wildlife of any kind.
- Watch out for grizzly bears as well as polar bears.

NOVEMBER 18, 2009

MORNING WORKSHOP

WORKSHOP INTRODUCTION

Amy Cutting, Oregon Zoo, Advisory council for Polar Bear International (PBI), current chair of the Polar Bear Sustainability Alliance (PBSA)

Polar Bears International and WWF welcome you to the polar bear focus day of the bear human conflict workshop. Thank you to the organizers of the Bear-People Conflicts Workshop for allowing us to hitch our wagon to their freight train.

I have been truly amazed over the last three days and am hopeful that you have gained some valuable insight and ideas. I have heard from many of your fellow participants that they were intrigued and energized by your participation in the workshop. The core purpose of today's agenda is to maximize your short time together since it is rare that the people in this room get together in person. Given that priority purpose – and in the interest of minimizing human-human conflict—we will remain intentionally informal (any indication that we are just disorganized is purely intentional). Our facilitators will make sure that conversation does not bog down and will keep the focus on practical matters around bear interactions. This is not a policy meeting, however If we reach an impasse, facilitators will attempt to summarize the various opinions for the record. We may occasionally have to agree to disagree, in the interest of time.

Now, I'd like to introduce Geoff York, Senior Program Officer, Polar Bear Conservation in WWF's Arctic Program. Formerly a polar bear biologist with the US Geological Survey, Geoff has put his considerable knowledge, expertise, and not insignificant personal charm, to work for polar bear conservation. Geoff is also an advisory council member for PBI and a member of the Polar Bear Sustainability Alliance (PBSA).

FACILITATOR

Geoff York, Senior Program Officer, Polar Bear Conservation, WWF Arctic Program

Dr. Nikita Ovsyanikov has spent more time on the ground with polar bears than most any scientist working in the field to date. Today, he will be sharing his knowledge about polar bears behavior and polar bear/human interactions.

KEYNOTE SPEAKER: POLAR BEAR/HUMAN CONFLICTS

Nikita Ovsyanikov, Wrangel Island Nature Preserve

In order to understand conflicts, Ovsyanikov says, we also need to understand the nature of polar bears. Studying behavior is very important because a bears' behavior is his only tool for managing his environment. If we understand behavior, we understand polar bears' life strategy and the tools they have to solve problems they face.

Ovsyanikov's behavioral ecology research on Wrangel Island began in 1990. While he has had some assistance in the past, his wife occasionally helps when she not involved in her own arctic fox and snowy owl research. Ovsyanikov observes bears on the island in late summer and autumn. In addition to his research, Ovsyanikov is the deputy director of science for the Wrangel Island Nature Reserve and a senior research scientist for the Institute of Ecology and Evolution, Russian Academy of Sciences.

Ovsyanikov's research has many facets in addition to monitoring the island's polar bear population. He also studies the number and distribution of polar bears; the bears' physical condition as an indicator of

population well-being; behavioral ecology; population dynamics, distribution and demographic structure; range activity and hunting behavior; patterns of terrestrial habitat use; social behavior; behavior during encounters with humans; reaction to human disturbance (e.g., human presence and transportation means); and polar bear mortality.

Much of Ovsyanikov's research is conducted along transect routes that connect a series of field research stations. The number of observed bears depends on ice conditions. The largest congregations are associated with walrus haul out sites. The largest concentration that he has seen was 160 bears at one time.

Over the years, Ovsyanikov became convinced that it is important to understand the bears' behavioral ecology to prevent negative human-bear encounters. Polar bears live a very harsh environment. They have to look for food hunt all the time because of their harsh environment. The bears investigate any and everything unusual in their surroundings that might be associated with food. Because they are usually roaming and hunting, anyone who visits the Arctic should expect to encounter polar bears. As a side note, we should be grateful to polar bears for helping Arctic pioneers succeed. Polar bears investigated explorers' camps and were killed, skinned and eaten. When Julius von Payer, the Austro-Hungarian arctic explorer who discovered Franz Josef Land, was icebound, he and his crew subsisted on 67 polar bears.

While polar bears are skilled and specialized predators of seals, they are also generalists and scavengers. They, like other bear species, are opportunists. They will even eat grass if they find it. When conditions change, the bears adapt their behavior. It is important to note that polar bears are both nomadic *and* socially tolerant of each other.

It is a common myth that polar bears are aggressive monsters. In reality, they are cautious animals. Perhaps this behavior is a consequence of their adaptation to their environment. Grizzly bears are known to survive serious wounds. However, wounded polar bears are not usually able to hunt, so they go to great lengths to avoid conflicts that would leave them wounded.

If we want to manage encounters with polar bears, we must also understand their social behavior. They communicate through subtle gestures and postures. Social distance is very important in their interactions and they seem to be aware of all other bears in proximity. As cubs and sub adults, they learn to detect and respect larger bears. It seems that this inclination to assess size and strength is also applies to humans; polar bears seem to think that, because humans are tall, they are also big and should be avoided. In addition, direct approach by another bear (or a human) is considered aggressive and large older bears have been known to run from sub adults that approach them directly and quickly. Polar bears also tend to become scared and retreat when they see other bears running away, as if panic were contagious.

When people come into polar bear country, polar bears are likely to investigate them. At his cabin on Wrangel Island, Ovsyanikov can have as many as 25 bears in one day come and investigate the premises, often repeating visits they've already made.

Polar bear responses to humans are highly predictable. If humans act confidently, polar bears usually run away towards or into the sea. It actually takes effort to initiate conflicts with polar bears. The bears will approach people if there are attractants available. It is also important to keep bears from getting too comfortable and habituating to camps or people. It is harder to drive the bears out after they've become comfortable, and proximity can lead to surprise encounters. It is very important to avoid surprise encounters by paying attention and/or making noise. Another potential conflict can occur when bears mistake humans for prey. They are attracted to anything dark and motionless, especially on the ice. It is more difficult to stop the approach of a polar bear that is in a hunting state-of-mind. Humans that

display fear may trigger aggression. On the three occasions that Ovsyanikov has felt seriously threatened by bears, they mistook him for submissive prey.

Wrangel Island Nature Reserve has a set of operating principles for polar bear safety, and all staff and visitors are required to follow these principles:

- Preventing conflict is always easier than managing conflict
- Polar bears have the right-of-way, respect them in their country, yet encourage the bears to maintain sense of fear of humans
- The goal of the Wrangel Island Reserve is to inflict no harm to polar bears
- Human safety is humans' responsibility
- Provide no attractants for bears
- Guns are not allowed because they are poor deterrents and people tend to rely on guns rather than learn how to interact with the bears. Guns are risky for bears and for people.

It is evident that ice volume and cover are shrinking and polar bears' habitat is diminishing. In addition, tourism in the Arctic is increasing, bringing polar bears and people into proximity more frequently. For example, some extreme adventure guides are offering skiing expeditions to the North Pole. Many of their visitors carry guns and are terrified of polar bears. Another problem is that ship-based expedition guides are seldom trained to manage ship landings to avoid conflicts with bears. As the number of bears on land increases, bears are increasingly exposed to tourists. In addition, both extractive industries and tourism employ helicopters and these are very disturbing to bears.

In Ovsyanikov's opinion, the professional bear community needs to develop guidelines for conflict avoidance and deterrents for the entire Arctic. For commercial operators, compliance should be mandatory. Guides should be trained and regulations should be enforced.

Human-polar bear conflict management should focus on managing humans and not polar bears. Conflict management should be founded on understanding of polar bear behavior. Management should also be environmentally and animal-friendly. Ethics should be considered; humans must decide, are we selfish apes that want only to satisfy our own interests, or are we human beings that need to be responsible for other creatures?

Ovsyanikov's field research was supported by Wrangel Island Nature Reserve, Polar Bear International, International Fund for Animal Welfare, WWF, and some private sponsorship.

QUESTIONS AND COMMENTS

What do you tell Arctic visitors about preventing polar bear conflicts?

There are other efficient tools besides guns, including electric fences and bear spray, and possibly dogs. Arctic visitors need to exhibit confidence during polar bear encounters. They should post guards when they are sleeping.

Frank Pokiak was concerned that visitors carrying 6 to 9 foot wooden poles might use them inappropriately. He was concerned that Wrangel Island polar bears might become habituated and approach people when they aren't on the island. Ovsyanikov responded, saying that the use of wooden poles teaches bears to fear humans and does not contribute to habituation. He also said that Chukotka Natives traditionally used wooden poles. Pokiak also wondered if, under the MMPA, people using wooden poles might be charged for harassment.

Can Russian Arctic guides and expedition leaders obtain training?

Currently there are no formal commercial operator training programs. However, several initiatives have been proposed. Some of the operators are concerned about the environment and are anxious for operator training.

Black and brown bears behave differently when they are in their habitat vs. when they are making incursions into human settlements. Is this also true for polar bears?

In general, polar bears behave the same in either situation. However, attractants or prior food-conditioning can make them very "sticky" in villages. When this happens, people have to consistently and persistently drive them away, day after day. Eventually, the bears will leave. At Wrangel Island, managers have two criteria for killing polar bears: 1) a bear is so food-conditioned that he is actively chasing or seeking humans; and 2) a polar bear has killed a human.

Does the Russian government support polar bear management improvements and bear safety training?

Not yet, but they may become active soon. Recently, military officers in the Arctic sent a letter to Vladimir Putin pointing out that polar bear deaths are inevitable at military installations. The letter supported the viewpoint that humans are responsible for conflicts. The officers requested that Putin initiate the process of developing human-bear conflict management guidelines.

People that are born and grow up in the Arctic are often afraid of polar bears. What would you say to them?

Ovsyanikov used to live in the village on Wrangel. In his experience, Native people are very aware of polar bear behavior. Except for some of the young people, they tend to be more sensitive to the natural world. When Ovsyanikov shares experiences and knowledge with Native people, he finds they are not so far apart.

SESSION: SIMILARITIES AMONG BEAR SPECIES AND MANAGEMENT

Session Outline

- ☐ At what level is a bear just a bear?
- ☐ How can brown and black bear experience inform polar bear conflict management?
- ☐ What brown and black bear management techniques can be applied to polar bears?
- ☐ What are unique considerations from a behavioral or energetic standpoint?
- ☐ Are there unique considerations from a cultural use perspective?
- ☐ Are there unique challenges from a public perception perspective?
- ☐ How we interact with bears will determine their future.

FACILITATOR

Terry D. DeBruyn, Project Leader for Polar Bear Team, U.S. Fish and Wildlife Service, Anchorage AK

About 23 million years ago, in the Miocene, we saw the Dawn Bear (*Ursavus elmensis*), the first bear. Black bears have been in North America about a million and a half years. Polar bears evolved from brown bears 300,000 to 400,000 years ago by most accounts. There isn't much of a polar bear fossil record because of their habitat; the bones of bears that die on the sea ice eventually fall to the sea floor.

The differences between black bears and brown bears are clear. Black bears evolved in forests while brown bears evolved on tundra. Black bears tend to flee from threats, and their cubs climb trees. Brown bears, having evolved on open ground, generally face threats and have developed more "prickly" personalities. Black bears typically do not defend their offspring; brown bear females aggressively defend their young.

Some black and brown bear behaviors are similar. An early sign of stress in both species is curling or protrusion of the lips. Polar bears have this behavior also. Yawning is another early sign of stress. All three species will yawn when they are stressed or anticipating conflicts, though they will yawn for other reasons, too. All three species will occasionally exhibit displacement behaviors when encounter a situation that causes them conflict and they haven't decided how they will ultimately react.

Nikita mentioned that polar bears are not territorial. Brown bears seem to have a sense of space that they defend, though coastal bears aggregate to feed occasionally. By reputation, black bears are not thought to be territorial, however I have seen black bears chase one and another many times. Perhaps maps of bears' overlapping home ranges without defined territorial boundaries confuse people. In addition, these maps don't account for relationships between bears. Having said this, I don't believe any of the North America bear species are territorial toward humans.

QUESTIONS FOR CONTRIBUTORS

With this background, at what level is a bear just a bear?

Dick Shideler (ADF&G) mentioned in an earlier talk that all three species are somewhat neophobic, i.e., they react to new events by moving away, except when the event occurs in close proximity. Even among brown bears, most bear-human encounters in close proximity are resolved when bears flee.

All three species constantly seek food when they aren't hibernating. This fact underlies our focus on managing attractants. All three species make the distinction between being directly fed by humans and finding food in unoccupied structures.

Martin Obbard (Ministry of Natural Resources) observed that all three species have many common communication signals, perhaps because of common early ancestors. The messages that we give to people about human-black bear and human brown-bear conflicts can be similar to the messages we give for polar bears.

Nikita Ovsyanikov (Wrangel Island Reserve) agreed that there are many similarities between the species and some differences, with the caveat that his experience with brown and black bears is limited. The similarities between the species are useful for management, but the differences exhibited by polar bears, such as physiology, define their ecological niche. However, a few behavioral differences are important for designing polar bear safety messages. In Osyanikov's experience, polar bears become curious and approach people when they hear human voices. He has spoken to bears during encounters and observed them turning toward him as soon as he started speaking. This observation contradicts the recommendation that people speak to brown bears during an encounter.

(To Ovsyanikov) You use relatively simple deterrents at Wrangel Island. Is this a matter of choice or is it the result of unavailability of other tools such as shotguns with special shells?

Ovsyanikov prefers to use snowmobiles, ATVs and wooden poles to deter polar bears. They don't use cracker shells because they're not available in Russia. Flares that whistle or make noise work well.

There is a lot of variation; some bears will run away when a person waves a hand. Ovsyanikov considers every new unknown bear unpredictable, and he believes it is foolish to be ignorant and assume that a "new" bear" will behave the same as all other bears. At Wrangel Island, they tell visitors and staff to watch each bear's behavior astutely, with the goal of no escalation during encounters.

Having said that, there are tools that rarely deter polar bears, such as white flares. Gunshots definitely don't deter polar bears. Ovsyanikov believes that polar bears are habituated to the cracking sound of ice, and gunshots aren't unusual or scary to them. In his experience, bear spray and dog-deterrent pepper spray work very well if they are deployed at or on a bear's nose. He uses the spray to deter direct encounter conflicts and curious bears that investigate buildings.

Ovsyanikov has used bear spray in an encounter with a predatory polar bear circling him while he sought refuge in a flimsy structure. The first time Ovsyanikov sprayed toward the bear, the wind pushed the spray back in his own face. The bear then circled him and received a second, fuller spray in its face, after which it fled. Later Ovsyanikov left the structure and watched the same bear go back to the building and sniff the site where it was sprayed. However, that bear never approached anyone again.

Shideler said that managers and industry personnel work to exclude grizzlies and polar bears from North Slope oil field structures; they tolerate bears everywhere else in order to provide bears with access to crucial habitat.

People have documented observations of grizzlies defending carcasses and driving off polar bears. From a management perspective, this competition does not bode well for polar bears if they are increasingly and overlapping with grizzlies. Polar bears typically walk away from carcasses when they finish feeding, while grizzlies bury, defend and return to carcasses. Shideler also observed that grizzlies occasionally catch and kill seals.

On a couple of occasions, Shideler observed polar bears responses to cracker shells. On both occasions, the polar bears turned away, albeit very slowly. He has wondered if their behavior was a result of walking hibernation.

Obbard has used cracker shells to deter polar bears away from his team while they worked on sedated bears. In those situations, polar bears typically react to the first shell, but not to the second or third shell. He surmises that the bears don't associate pain with the sound and flash, and habituate very quickly to the sound. Obbard suggested that professionals develop a new polar bear deterrent protocol that combines noise with pain stimulus.

Obbard observed that screaming shells are no longer available in Canada, perhaps because they often fouled or became lodged in shotgun barrels. When he used them, these shells were very effective. Shideler concurred, saying that screamer shells are no longer available in the States either. Both expressed interest in future development of such rounds.

Polar bears are known for their patience and their seal-stalking behavior. Do these traits affect our ability to manage polar bear encounters?

Ovsyanikov believes that evolved temperamental difference between the species could impact management. For example, brown bears are known for becoming more aggressive when they are wounded. Ovsyanikov has never seen a wounded polar bear express aggression.

In Shideler's experience on the North Slope, polar bears are less "prickly" than grizzlies and a little bit easier to manage.

Are there unique challenges due to public perception of polar bears?

In Shideler's area of Alaska, the black bear hunting season is 365 days per year with a three bear limit. Recently, the state began to treat grizzly bears as nuisances also. It would be a shame if public perception of polar bears were treated as nuisances, too.

DeBruyn observed that polar bear management is benefiting from the recent public perception of their decreasing populations.

Are there unique considerations for managing the three species from a cultural perspective?

Joe Sage, from Barrow, Alaska said that in his experience, cracker shells seem to deter polar bears. Inupiat elders teach that respecting polar bears means understanding their needs. The bears come ashore to wait for ice so that they can feed. Polar bears need to eat and that affects their behavior. People with no knowledge of polar bears' needs approach them too closely and interfere with their behavior and instincts.

Sage and others were taught to look closely at the condition of a polar bear to get clues about their behavior. If they are hungry, they might be curious and approach people or their belongings. For example, when the village bear guards encounter hungry bears, they guide them to whalebone piles so that the bears will stay away from people. During the summer season, the bears may be well fed, but they also may be curious and wander into town. However, it's relatively easy to coexist with well-fed bear. During spring whale hunts, well-fed polar bears may approach, but are not considered a threat. For example, a great Barrow whale hunter was helping to butcher a whale when a polar bear came over an ice ridge. When the young people ran for their guns, the old hunter stood and told everyone to put down their guns. The old hunter hooked a large slab of whale fat and approached the bear with it. The bear backed away then stopped when the hunter left the meat in front of him, and fed.

SESSION: POLAR BEAR CONFLICT REGIONAL OVERVIEWS

Session Outline

- ☐ What is the status of bear human conflict in your region (up, down, stable)?
- ☐ Do you think conflicts are likely to increase or decline?
- ☐ Examples of the types of bear human interactions in your region?
- ☐ Do you have an active management program?
- ☐ Success stories, failures, needs?

FACILITATOR

Geoff York, Senior Program Officer Polar Bear Conservation, WWF Arctic Program

The focus of this session is to discuss the different methods and programs currently used across the Arctic to address human-bear conflicts. Current programs range from the highly specialized and logistically intensive Polar Bear Alert Program in Churchill Canada (which many consider a "gold standard"), to

grassroots efforts in places like Chukotka Russia. Most villages don't have the same resources as Churchill, but they still offer effective solutions to this shared issue. Managers, no matter where they are, now have a continuum of tools for different circumstances.

York gave a brief overview of the Umky Patrol Program on the Chukotka Peninsula. As elsewhere, Chukotka has experienced dramatic losses of sea ice. Walrus, as well as polar bears, are increasingly coming ashore. In Vankarem, over 20,000 walrus are hauling out within a quarter of a mile from the community, and sometimes surrounding town on both sides. In large walrus haul outs, there are also stampede mortalities that create attractants for polar bear later in the fall and early winter.

In 2006, a polar bear that had been attracted to an open dumpster killed a young girl and this event galvanized the community of Ryrkaipiy. Local villagers came to WWF for help with polar bear conflicts. The community developed an "Umky Patrol," so named after the Chukchi word for polar bear. The patrol spends an equal amount of time managing walrus issues. In the summer, they keep people away from walrus to prevent stampeding, and they remove or move walrus carcasses. In the fall when the bears are waiting for sea ice to form, the patrols try to keep the bears out of town.

There are many villages interested in starting Umky Patrols, yet there is far more interest than funding. The Chukotka patrols use the equipment easily at their disposal: long wooden poles, flaming brands, marine flares (when they have them), snowmobiles and ATVs. They use the wooden poles to march the animals out of town. The patrols' responsibilities have expanded beyond keeping bears and people apart. In addition, they offer education, attractant management and anti-poaching efforts to thwart outsiders that come to Chukotka for the purpose of illegal polar bear harvest. In addition, Chukotka villagers are beginning to protect regions where walruses are beginning to haul out.

CONTRIBUTORS

Sarah Medill, Department of Environment, Government of Nunavut

Managers and local residents view human-polar bear conflict trends in two ways: 1) elders and hunters say they're seeing more bears than ever before. Though early estimates of polar bear populations are likely inaccurate, the circumpolar population has increased in size since recovery efforts were put in place in the late 1960's.[1]; and 2) human population and development has also increased in Nunavut. These two factors combine to make more opportunities for bears and humans to interact.

In addition, Nunavut residents are shifting between old lifestyles and new lifestyles. Hunting efficiency has increased both by direct improvements to harvest implements, and by increased travel efficiency. Snowmobiles and boats can take hunters further and more rapidly away from their camps and villages covering large areas of land & sea ice. These changes, in addition to the change from nomadic lifestyles to permanent residency, have increased the volume of attractants for polar bears and the potential to see and interact with more bears.

Climate change underlies the changing ice conditions and the presence of bears onshore. Bears may be in poorer condition, making them take more risks to obtain food or attractants.

Nearly one-half of the polar bear defense-kills occur during hunting and camping activities. The other half results from conflicts occurring at or near communities. Defense kills related to various research activities and industry, including resources extraction, site remediation and tourism occur less frequently.

[1] Uspensky 1961, Harrington 1964 suggest as low as 6000-10,000 in the 1960s.

Bears can gain access to any Nunavut community landfill. Many conflicts occur in communities where dog sled teams are kept and fed, and where country foods are processed and stored for human or animal consumption. Bears often have easy access to meat caches and occasional sources of attractants such as whale, seal, or caribou carcasses.

The goals of the Nunavut polar bear safety program focus on human safety and reduction of property damage. Other goals include reduction of the number bears killed in defense and encouragement of respect and understanding for bears.

Nunavut hamlets and managers approach conflict reduction in three ways. First, they try to distribute Information widely. Their information sources include both science-based management and Inuit elders. Second, they try to use attractant and people management to prevent food-conditioning and habituation. Bear viewing is controversial in hamlets because of the perception that it is disrespectful to approach bears that viewing might increase habituation. Third, the Nunavut program focuses on early detection and an aggressive response to prevent food-conditioning.

In general, people try to prevent conflicts and deter bear problems non-lethally. Deterrent activities appear to be greatest in communities at dumps, sled dog tie-up areas, and meat caches .However; deterrent events are less likely to be reported or recorded when they occur outside of the community. Limited individual financial ability and limited availability of equipment or materials complicates matters. Camps are often built using reclaimed housing supplies and low-grade materials from wooden shipping containers. Individuals or groups must overcome economic barriers to implement preventative measures.

Nunavut's program for reducing bear human conflicts is in its infancy, and it faces different challenges than the typical North American scenario. Many Inuit maintain a traditional lifestyle, which includes the harvesting of terrestrial and marine mammals. Employment opportunities are limited in the territory, and this means that many Inuit depend on subsistence hunting of country foods instead of, or to supplement, wage based incomes.

Mike Pederson, Department of Wildlife, North Slope Borough, Alaska

The number of bear-human conflicts in North Slope Borough is down this year compared to last year when they spent over 200 man-hours deterring bears out of Barrow. Last year, the sea ice was 200 miles offshore and the Polar Bear Patrol spent a lot of time moving polar bears out toward a point of land 8 miles from Barrow. This year they had more cabin break-ins by grizzly bears than usual, resulting in several defense kills.

Pederson thinks that conflicts will increase, in part because of risks taken by tourists. Sometimes education doesn't affect highly motivated bear viewers. When conflicts between visitors and bears arise, bear guards are impacted.

The North Slope Borough Polar Bear Patrol Program is on call 24/7 during the prime season in the fall and early winter. Most of the bears they encounter in Barrow are visiting the former dump. The dump has been moved inland eight or nine miles, and they expect that, in general, bear conflicts will decrease. However, they are seeing more polar bears inland than they have before.

Village Bear Patrols patrol from 4 pm to 8 am in two shifts. During the day, there are usually enough active villagers to dissuade the bears from coming into town. Pederson doesn't consider North Slope Polar Bear Patrols to be "management" programs, but rather hazing and deterrence programs. The patrols are successful; they just need to replace funding that has dried up, and they need ATVs and snowmobiles. He is grateful to the USFWS for their support.

Aksel Blytmann,KNAPK (Greenland Hunters and Fishermen Association)

Blytmann works for KNAPK (Greenland Hunters and Fishermen Association). Greenlandic hunters have noticed changes in the Arctic. Prior to recent sea ice changes polar bears and humans were separated in Greenland. If a hunter wanted to hunt polar bears, he had to go out on the ice.

Polar bear harvest is called polar bear "catch" in Greenland. Polar bear hunters typically live in or around the municipalities of Qaanaaq, Upernavik, Tasilaqand and Itoqqortoormit in Northern and Eastern Greenland. Polar bear hunters are considered in two categories: "occupational," or full-time subsistence hunters, and "spare-time" hunters, or people who hunt as only part of their subsistence income. There are 700 to 750 hunters in each of these categories in Northern and Eastern Greenland. Throughout Greenland, there are approximately 2,000 occupational hunters and about 6,000 spare-time hunters.

Before 2005, polar bear hunting regulations were very liberal. Hunters could kill 2 or 3 polar bears per year, including females and cubs. In 2005, the Greenlandic government passed national regulations for polar bear management, called "Greenland Home Rule Executive Order no. 21 of 22 September 2005 on the Protection and Hunting of Polar Bears."

The executive order covers the land and the economic zones of Greenland, and special provisions apply for access to the National Park in North and East Greenland, and the Melville Bay Nature Reserve. The protective elements of the Executive Rule include the following:

- Quota-system dictates permitted harvest level and permitted hunting period
- Only occupational hunters can hunt polar bears
- Cubs and females accompanied by one or more cubs are fully protected
- It is prohibited to disturb denning polar bears
- Restrictions on hunting methods:
    - No use of aircraft, helicopters, snow scooters and other motorized vehicles and vessels of more than 20 GRT/15 GT.
    - No use of poison, spring guns, traps or any other technical aids to restrain polar bears.
    - Hunters must use a minimum caliber of 30.06 (7.62 mm).

Sport hunting of polar bears is not currently allowed, though occupational hunters are allowed to sell polar bear parts.

Polar bear population estimates were generated from research in Baffin Bay and Davis Strait, from Traditional Ecological Knowledge, and from catch statistics. Trends show declining populations, though research is confounded by the inability of researchers to survey extensive areas of off-shore pack ice. In 2004, the Baffin Bay population estimate was 1,600 and the Davis Strait population was 1,650. Hunting quotas in all areas were reduced after the 2005 Executive Rule. The quota plan for 2009 was 130 bears.

In Blytmann's lifetime and in his grandfather's lifetime, a polar bear in Greenland has killed no human. Blytmann thinks that the presence and use of dogs has deterred polar bear conflicts. If there is extra meat from hunting or any other food, it is given to dogs and does not lay around to attract polar bears. The low conflict record may also result from traditional ethics: Greenlanders are taught to leave the bears alone and respect them.

In the last several years, five polar bears have had to be killed. For example, in Eastern Greenland a bear was hanging around a school. The community called the police and the police called hunters who shot the bear. In South Greenland, there are approximately 300,000 sheep on 50 farms. Polar bears love to eat sheep, resulting in polar bear deaths.

Greenlanders are aware of polar bear population concerns. The hunters in North and East Greenland want to become rangers. This year, a bear patrol/hunter school was started based on the bear patrols functioning in Canada and Alaska.

There is offshore oil drilling on the coast of Greenland. However, they have no policies regarding conflicts with polar bears. Blytmann is interested in translating and/or adopting Alaskan and Canadian oil field policies as regards polar bears.

The Northeast Greenland National Park is the world's largest national park, and polar bears den there. A molybdenum mine employing 7,000 people being developed near the park. This mine development has great potential to affect polar bears.

Martyn Obbard, Ontario Ministry of Natural Resources,
Ontario Polar bear conflicts are increasing, especially in the James Bay area. Obbard expects conflicts to continue increasing if the sea ice continues to dissipate.

Bears commonly come off the ice and encounter goose-hunting camps in April or May, and these camps are typically replete with attractants. Bears also encounter caribou hunters and their camps during ice formation in November. Bear viewing is increasing. In one instance, a bear viewing guide killed a bear because he wouldn't get out of their unattended beached boat. Village dumps continue to attract bears into village areas where they are sometimes destroyed. Obbard occasionally encounters bear carcasses with bullet holes and has no idea how the conflicts occurred. Inland fishermen encounter and occasionally have conflicts with bears that travel inland to den. Currently, there are no active deterrent programs in villages.

Craig Perham, U.S. Fish and Wildlife Service
Polar bear management on the North Slope is based on federal regulations, with help from Alaska Department of Fish and Game. Both USFWS and ADF&G work cooperatively with the oil and gas industry. The oil and gas industry developments are highly controlled, resembling a series of big industrial parks. If workers feed wildlife, they could lose their jobs. After the polar bear program was instigated in 1993, the number of polar bear or human deaths dropped to zero. Prior to the establishment of the program, a mauling at a military installation led to the dispatching of a polar bear. The USFWS expects conflicts to increase as a result of ice disappearance, and this is confirmed by increasing observations of identifiable individual bears.

Susi Miller, U.S. Fish and Wildlife Service
There are a few villages in Northwest Alaska that don't have any attractant management or polar bear deterrent programs. Nuiqsut villagers hunt whales at Cross Island where many bears aggregate. The USFWS looking to launch polar bear patrols in these communities as well.

Frank Pokiak, Inuvialuit Game Council, Northwest Territories
Recently, villages have had more conflicts with grizzlies, resulting in defense kills. Up until recently, communities would see a polar bear come into the community every ten years or so. These days, polar bears wander through town every two or three years and a couple of bears are shot in the autumn.

Pokiak thinks that polar bears conflicts will increase as bears are on land for longer periods. The only management program they have is hunting quotas, and limited female harvest. Defense-killed bears are given tags at the end of the season and are counted in the harvest quota. Conservation progress was made in the late 1980's when Andy Carpenter talked with Alaskan Inupiats about common issues. They signed an agreement with the Inupiats to share harvest information.

QUESTIONS AND COMMENTS

How widely available are cell and internet connections in remote northern settlements?

York said that communication technology was surprisingly available in Russia and rural Alaska. Blytmann said that most Greenland settlements have cell phone and internet connections.

Jennifer Lam, NWT Wildlife Management Advisory Council, said that high-speed internet access is very spotty in the Inuvialuit Settlement Region and cell coverage is available only in the larger villages.

Do polar bears often show aggression? Do they ever charge hazers?

Ovsyanikov says that aggression may occur under certain circumstances. For example, polar bears may bluff charge a person to send them away if the bear feels pressured. Sub adults will "test" humans and other polar bears. Consequently, humans need to be prepared to deal with subtly aggressive behavior. Ovsyanikov thinks that most bluff charges are not dangerous, especially if the recipient of the charge remains "cold-blooded" and stands his ground.

It is important for people to stay away from polar bears that are feeding. In addition, it is important to let polar bears know you are human and not a motionless seal if you see them from a distance. Polar bears seem to think that anything that is tall is also strong and should be avoided.

Hedlund says that, in the history of the Polar Bear Alert program, they've seen predatory bears three times. In his experience, when bears are being hazed, they don't turn and retaliate.

York added that, while it is possible for biologists to enter and work with black bears in dens, no one has entered occupied polar bear dens, except by accident.

Can this group establish a committee to review educational materials?

Jennifer Reed (USFWS) suggested that this gathering form group or committee to let the public know about the subtleties and contexts of the polar bear encounters. Media need a group of experts to inform them.

Ovsyanikov agreed, saying that wildlife commercials are the worst source of information because their objective is to excite people. Another problem is that wildlife documentaries only show brief cuts of polar bear behavior of five seconds or less, and these cuts aren't long enough to show natural behavior. Another source of misinformation is the "hero syndrome." Visitors to the Arctic observe polar bears, return home, and tell their neighbors and friends that they've faced down a horrible beast. If no other reliable and professional source of information exists, these so-called heroes frighten and influence the public.

Lynn Rogers suggested that www.bear.org is a good site for reliable behavior information.

Lam suggested that any bear information review panel include Native perspectives both for quality of information and rural acceptance. She mentioned that bear guards are part of the Inuvialuit Settlement Region, and they have built strong relationship with land and wildlife management agencies.

Shideler reminded participants that professional bear biologists and Native elders have reviewed the "Safety in Bear Country" video set, and it is an excellent source of information.

Buchanan reminded participants that PBI offers a training video for polar bear managers describing the Churchill Bear Alert program works. The short film is available at http://gallery.me.com/bj_kirschhoffer#100246.

SESSION: EMERGING ISSUES IN HUMAN-POLAR BEAR CONFLICT

Session Outline

- Industry- Taking the lead in mitigation (attractant management, deterrence, den detection, avoidance)
- Community involvement- Are they on board? (TEK/IQ, education, patrols, economic opportunities and challenges)
- Contingency planning- Are you ready?(orphans, compromised animals, occurrences outside normal range, oil spill response)
- Viewing/Tourism- Potential benefits and conflicts (setting safe standards, best practices, an education opportunity for living with bears)

FACILITATOR

Amy Cutting, Oregon Zoo, Advisory council for Polar Bear International (PBI), current chair of the Polar Bear Sustainability Alliance (PBSA)

CONTRIBUTORS

Julie Lina, Pioneer Natural Resources, Anchorage, Alaska

Lina is Regulatory and Environmental Affairs Coordinator for Pioneer Natural Resources, an oil and gas development company working on the North Slope of Alaska since 2002. Working with permitting agencies, Pioneer developed a polar bear protection, detection, mitigation, and den avoidance program at their Oooguruk Development Project. Detection methods include polar bear monitors (guards), closed circuit TV (CCTV) and infrared cameras. As part of their mitigation efforts, Pioneer records polar bear observations and sends reports to USFWS. Pioneer's "Bear Interaction Plan" is designed to protect workers and bears. The plan describes operations and personnel training procedures.

For the Polar Bear Den Detection and Avoidance program, Pioneer conducts hand-held forward-looking infrared (FLIR) surveys from the oil platforms and by vehicle during dark winter hours. The USFWS Incidental Take regulations require operators to maintain a one-mile distance from den sites. Using FLIR technology, Pioneer investigates potential den habitat along the coastline near project activities. They also identify "hot spots" or heat signatures. Pioneer provides FLIR video clips and images to the agencies. So far, they've encountered no dens on their surveys. Craig Perham added that USFWS is currently testing FLIR survey methods to determine if their detection distance is greater than 60 meters.

Pioneer recognizes the importance of subsistence resources to Native Alaskans and works with the village of Nuiqsut to mitigate any possible conflicts.

QUESTIONS AND COMMENTS REGARDING INDUSTRY

John Murphy, security consultant for Exxon Mobil in Point Thompson, added that Exxon has also purchased ground-based radar to track bears, and thermal imaging cameras to detect polar bears in darkness.

Cutting referred to a link to LGL's 1989 best practices document, "Guidelines for Oil and Gas Operators Working in Polar Bear Habitat" at http://alaska.boemre.gov/reports/1990rpts/93_0008.pdf.

Mike Pederson, North Slope Borough Polar Bear Deterrence Program Coordinator, Barrow, Alaska

Pederson recognizes that polar bear encounters are increasing due to changes in sea ice. Last year, his team was extremely busy monitoring and detecting onshore polar bears, though this year is slower. Polar bears are usually wandering on the outskirts rather than in Barrow. When a bear is sighted, the bear guards are called, and part of their duties include dealing with crowd control.

The Borough consulted community elders when they developed the polar bear patrols. The elders recommended that patrollers observe bears' behavior before acting. When the bears are at rest, let them alone for a couple of hours and they will likely wander away or perhaps drive them out to ice. If patrollers find polar bears feeding outside of communities where there are no conflicts, they let them eat. When conflicts are perceived, patrollers use cracker shells and/or bean bags to drive bears away. Right now, they rarely see unhealthy bears. The patrollers have slugs if they need to use them. So far, the patrollers have not had to remove a polar bear in defense of life or property. The communities generally support and respect bear guards.

Bear viewing at the whalebone pile occurs on Regional Corporation land. The Regional Corporation has a bear viewing vehicle to drive visitors to the viewing site. Though the Borough Wildlife Management Committee doesn't support bear viewing, the Regional Corporation is a private landowner and is pursuing the viewing program.

Under the MMPA, qualifying North Slope Borough residents may harvest bears for subsistence. Defense kills count toward the Beaufort Sea subpopulation harvest quota.

QUESTIONS AND COMMENTS REGARDING COMMUNITY INVOLVEMENT

> Cutting added that the definition of harassment may need more clarification in order to be operational. Miller said that the federal regulation prohibits any harassment of polar bears, including forcing them to respond to a human in any way. Enforcement of harassment problems is problematic.
>
> Chandra Meek, Assistant Professor at the University of Alaska, Fairbanks studied community compliance issues in polar bear country. She concluded that every rule, guideline or regulation, needs broad enforcement authority to be successful.

Randi Meyerson, Curator of Mammals, Toledo Zoo, Association of Zoos and Aquariums Polar Bear Species Survival Plan Chair, member PBI Advisory Council,

In her role as SSP chair, Meyerson has been working on a contingency plan for compromised polar bears. There are many potential scenarios because of the disappearance of sea ice, and the committee is concerned about being prepared. For example, there may be more orphaned cubs or emaciated bears. In addition, polar bears are showing up in places they've never been seen before, such as Iceland, where they are in greater danger of destruction. Since polar bears range over different jurisdictions and are valued differently by diverse cultures, it is imperative that stakeholders come together and form a consensus about monitoring, uses, and conservation.

QUESTIONS AND COMMENTS REGARDING CONTINGENCY PLANNING

> Research by Andy Derocher of the University of Alberta shows that males' home ranges are double or triple what they used to be. In addition, Alaskan communities are seeing polar bears where they had never seen them before.

Susanne Miller, USFWS, and Jennifer Reed, Visitor Services Coordinator, Arctic National Wildlife Refuge

Polar bear-related tourism is increasing with the number of onshore bear visits. In Kaktovik, the whalebone pile near the village has spawned a cottage industry in bear viewing. Early in this practice, there were reports of disturbances including bears climbing onto vehicles. Recently, filmmakers have requested to film den sites. Such visits are allowable under MMPA, but are cause for concern.

Reed is developing guidelines for polar bear viewing management to ensure public safety, stewardship and conservation. She feels that it is important to be clear and honest with local communities. The agencies don't have all the answers, but they are willing to work with communities to reach mutually agreeable solutions (within compliance for federal and state regulations). Recently, the USFWS reassured Kaktovik residents that bear-viewing guidelines won't supersede the results of their working group. The Tribal Wildlife Grant that supports the working group also supports self-determination within MMPA context. The USFWS personnel act as technical advisors.

Reed asked participants to send her any bear-viewing guidelines that are currently available. The group briefly discussed the possibility of bear viewing or commercial filming at den sites. At first, Reed and Miller didn't understand Kaktovik residents' opposition to polar bear viewing. They later learned that most of the opposition came from residents' concern about how viewing would affect their subsistence lifestyle, especially as regards whaling.

QUESTIONS AND COMMENTS REGARDING VIEWING AND TOURISM

Tom Smith said that, in his experience, watching den sites requires hours of sitting still in the bitter cold only to see polar bears between 0 and 15 minutes per day.

Has Kaktovik decided that bear viewing is culturally appropriate? According to Miller, the whalebone pile is on military land and not within the community's jurisdiction. Since some local residents are making money from bear viewing, some residents are supportive.

Buchanan suggested potential polar bear viewing communities and agencies meet with the Churchill viewing program administrators to share information. The Churchill program has operated for more than 30 years and could help smaller communities develop good guidelines.

Hedman said that under the current guidelines in Churchill, buggies are restricted to designated routes in Zone 2. This is an improvement over earlier guidelines that allowed buggies to follow bears anywhere in the Zone.

Larry Lewis suggested that MMPA regulations be enforced at the whalebone pile on military land. Regardless of what local residents want, the government should not selectively apply regulations and treaties.

Miller said that, aside from harassment, there are no specific bear viewing guidelines in the MMPA. The USFWS is encouraging local residents to find their own solutions to the problems resulting from that use before the government imposes federal regulation enforcement. Reed said that the USFWS is seeking a self-policing environment where social norms supporting polar bear conservation are established, all within the boundaries set by the MMPA. She said that the USFWS is promulgating bear-viewing regulations for refuge lands; however, the Kaktovik whalebone pile is on non-refuge land. The polar bear committee considered establishing a local bear-viewing ordinance though the whalebone pile is not on city land. They thought that such an ordinance might have social influence.

Cutting summarized the session with the following observations:

- There is a need to share information about techniques within extraction industries.
- Communities need to develop effective public safety messages that support the efforts of bear guards.
- As sea ice conditions change, individual jurisdictions need to develop contingency plans. There are many opportunities for jurisdictions to share information during the contingency plan development.
- Communities need to create local social and legal norms that work with existing state, provincial and federal laws.

SESSION: NEXT STEPS

Session Outline

- ☐ Polar Bear Human Interaction Management System
- ☐ Communication (web forum, workshops, cross-training, technical meetings)
- ☐ Can we create a set of best practices highlighting options for different circumstances?
- ☐ Tools, knowledge, and technologies needed

Facilitator: Geoff York

DISCUSSION

Polar Bear Human Interaction Management System

Jim Wilder invited participants to implement the Polar Bear-Human Information Management System (PBHIMS). The PBHIMS Access database is designed to track, record and analyze polar bear-human conflicts, sightings, natural history across the range states. The original software (BHIMS) was developed for brown and grizzly bear information in Alaska National Parks, and was based on Tom Smith's Glacier Bay National Park studies. Individual parks currently use BHIMS to inform management. Original data files can be appended to the database as well as geo-referenced facts about human injury, deterrent actions, and natural history.

Wilder recently adapted the BHIMS software for polar bears and hoped to share the software and users' guide. His agency offers some technical support. Outside the U.S., PBHIMS is ready to send to managers in countries, who can then pass it on to smaller jurisdictions.

At the Tromso meeting of the ranges states in April 2009, participants resolved to allow US to lead implementation of PBHIMS in systematic manner. The program offers a tangible way to illustrate sea ice changes, polar bear behavior, and conflicts.

Originally, NPS and USFWS developed the database to help managers and researchers reach people who had become tone-deaf to bear conservation and bear safety messages. People are naturally more interested in bear information when it local and timely. The database gives managers a way to store and analyze information accompanied by spatial GIS references. Wildlife researchers and managers can present these analyses to communities in a visually appealing manner to strengthen the message transmission. For example, spatial maps could show hot spots for attractant management. In addition, PBHIMS uses relatively fewer personnel and a low budget to address big problems. The PBHIMS program has garnered interest from Norwegians, and through Ovsyanikov, Russia.

The following paper describing the database is available on the IBA website: Wilder, James M., Terry D. DeBruyn, Tom S. Smith, and Angie Southwould. "Systematic collection of bear–human interaction information for Alaska's national parks" *Ursus* 18(2):209–216 (2007). can be found at http://www.bearbiology.com/fileadmin/tpl/Downloads/URSUS/Vol_18/Ursus_18_2_Wilder_et_al.pdf.

Communication (web forum, workshops, cross-training, technical meetings)

Joe Sage said that, with knowledge passed down from elders, humans and people live well in the same habitat. Animals adapt year to year. However, northern residents are concerned about oil industry, global warming, and traffic through the Northwest Passage. He encouraged participants to educate the outside world about the issues and causes of habitat loss. He is worried that public administrators will make new regulations without any knowledge of the issues.

The Get Bear Smart Society offered to host a polar bear forum on their website at http://www.bearsmart.com.

John Hechtel said that the IBA website is being improved and could provide a credible site for a human-bear interaction forum. They hope to have professional pages and links that require a password so that professional discussions of unresolved issues aren't available to the public media. They currently have a Google Group for students. Debbie Wellwood added that representatives of the bear smart communities have resolved to increase communication, and the IBA website would be good place. Funding is an issue, because all professionals have full-time jobs, and cannot volunteer to be webmasters or referees.

Dick Schideler is the IBA Website Committee Chairman. He added that password protection may require IBA membership.

John Hechtel mentioned that the World Society for Protection of Animals is trying to start a human-bear interaction forum, but they have an agenda that would not be suitable for professionals. If there's a vacuum for information, other less-credible groups with an agenda will try to fill it.

Robert Buchanan said that PBI is currently funding independent software development and upgrades for the official website of the IUCN/SSC Polar Bear Specialist Group (PBSG). Buchanan thinks the yearly cost for the website is between $75,000 and $100,000.

Linda Wiggins encouraged early planning for an informational website or discussion group; clear objectives will increase ease, efficiency and use. Another participant added that there are nonprofit professional societies that might want to adopt polar bears and help with website development.

Best practices Guidelines

Geoff York pointed out that several participants want to see professionals develop hazing and deterrent guidelines building on participants' experiences.

John Hechtel said that the "Safety in Bear Country" nonprofit may be able to help develop training standards.

Tools, knowledge, and technologies needed

Patty Sowka specializes in securing attractants. She asked participants to let her know if they need to test bear-proof containers in polar bear country, and whether they need new products. Sarah Medill answered affirmatively. For example, people in the north need to cure their

harvested meat in the open air, or at least in a ventilated space. Communities need to discuss their needs and suggest solutions.

RESEARCH, MANAGEMENT & OUTREACH RECOMMENDATIONS

Contributors and participants described the following needs for additional research, management, and information dissemination during discussions at the Polar Bear Focus Day.

RESEARCH

- Researchers need to publish more polar bear behavioral ecology study results. The study of behavioral ecology yields clues about polar bears' ability to adapt to a warmer world.
- If we want to manage encounters with polar bears, we must also understand their social behavior.
- Are polar bears increasingly overlapping with grizzlies? If so, what are the ramifications of their increasing interactions?
- Polar bear-proof containers need to be tested by polar bears. They also need to be tested in the harsh Arctic environment.
- The efficacy of polar bear patrols needs to be studied and published.

RANGE COMMUNITIES AND POLAR BEAR PATROLS

- At least anecdotally, community polar bear patrols are successful for reducing polar bear-human conflicts.
    - More support is needed to establish patrols in Greenland, Canada, Northwest Alaska, and Russia.
    - Existing polar bear patrols need steady funding.
- Low-cost, practical bear-proof containers and deterrents are needed for communities and camps where people harvest and process "country foods."
- Communities need to create local social and legal norms that are compatible with existing state, provincial and federal laws.

MANAGEMENT TOOLS AND DETERRENTS

- The Manitoba Polar Bear Alert program offers many years of experience to developing polar bear programs. PBI has produced a film describing the Polar Bear Alert management methods. Polar bear managers are the target audience for this film.
    - Polar bear viewing communities and agencies could meet with the Churchill viewing program administrators to share information.
- The professional bear community needs to develop international guidelines for conflict avoidance and deterrents for the entire Arctic.
    - Currently, some managers disagree about the efficacy of cracker shells as deterrents. This should be studied and/or resolved
    - Polar bear deterrent protocol should employ visual, tactile and aural stimuli.
    - Polar bear deterrent protocols should be based on learning theory and other deterrent research and experience.
- USFWS is willing to share and support new users of the Polar Bear-Human Information Management System (PBHIMS). The database is useful for managing and analyzing bear-human interaction events and literature.

STANDARDS AND CRITERIA DEVELOPMENT

- For polar bear management, it is imperative that stakeholders come together and form a consensus about monitoring, uses, and conservation.
- As sea ice conditions change, managers need to develop contingency plans. These contingency plans should be shared among the range countries.

ECOTOURISM AND BEAR VIEWING

- Professional managers and polar bear range communities should develop a set of international guidelines for ecotourism and bear-viewing.
    - The bear-viewing guidelines should be developed through consensus of northern states (countries) and local communities, and should comply with existing laws and regulations.
    - For commercial ecotourism guides and operators, compliance should be mandatory and regulations should be enforced.
- Commercial ecotourism guides should receive training to reduce their impact on polar bears.

INDUSTRY

- Guidelines for extractive industrial developments need to be developed in all polar bear range jurisdictions. Some polar bear range areas employ guidelines for extractive industries and others do not.
- In some areas, industry leaders are testing innovative deterrents.
- Best practices for industries need to be shared among the range jurisdictions.

PUBLIC OUTREACH

- Public media and writers need a "go-to" source for information. Managers need to develop a single, credible web resource for polar bear-human interaction information.
    - Web resource pages require early planning with clear objectives.
- Professionals and Arctic residents need to design basic polar bear safety messages for use by the public.
    - Bear safety messages may be based on messages designed for brown and black bears, but must consider unique polar bear behavioral ecology.
    - Polar bear safety messages should address the public perception of polar bears as "bloodthirsty monsters."
    - polar bear educational materials should be reviewed by professionals and Arctic residents (e.g., "Safety in Bear Country" video series).
        - Any review panel must include Native perspectives both for quality of information and rural acceptance.
- The "Safety in Bear Country" video set has been reviewed by professionals and Native elders and is an excellent source of information.

CONTRIBUTORS

Aksel Blytmann is a consultant with the Greenland Hunters and Trapper Association (KNAPK).

Robert Buchanan is President of Polar Bears International. In the mid-1980s, Robert made his first trip to the Far North and saw his first polar bear in the wild. He has returned every year since. Retired from a marketing role with a leading global beverage company, Robert joined PBI's board of directors in 2000 and became president and CEO of both PBI USA and Canada. Robert's vision is to help the world understand the importance of the arctic ecosystems and to inspire individuals to take urgent action toward conserving the planet.

Amy Cutting is on the Advisory Council for Polar Bears International (PBI), and is the current Chair of the Polar Bear Sustainability Alliance (PBSA). The PBSA focuses on mitigating human-polar bear conflict, contingency planning for compromised bears and support for research efforts that inform the management of polar bears in a warming Arctic. Part of her efforts include working closely with the Assiniboine Park Conservancy and Zoo on the International Polar Bear Conservation Centre, a rescue center for orphaned cubs and compromised bears in Winnipeg, Manitoba that will open in the fall of 2010. Amy is an Animal Curator at the Oregon Zoo as well.

Terry Debruyn is the Polar Bear Project Leader, Marine Mammals Management, U.S. Fish and Wildlife Service and serves as the U.S. Fish and Wildlife Service's authority on the biology and management of polar bears. He received M.S. and Ph.D. degrees researching black bears in a decade-long study in Michigan's Upper Peninsula. He has studied bears for last 19 years and published *Walking With Bears* about his decade long experience with bears in Michigan's Upper Peninsula.

Daryll Hedman is Regional Wildlife Manager for Manitoba Conservation. Among other duties, he is responsible for management of the polar bear population in western Hudson Bay, and oversees the Polar Bear Alert program at Churchill. This program has become a model for management of polar bear conflicts where the goal is to balance human and bear safety with the needs of a major commercial bear viewing industry.

Julie Lina is the Environmental Coordinator for Pioneer Resources and resides in Anchorage, Alaska.

Sarah Medill is a Wildlife Deterrent Specialist with the Government of Nunavut. Sarah first worked with polar bears during her master's studies with Dr. Andrew Derocher at the University of Alberta.

Randi Meyerson is the curator of mammals at Toledo Zoo and Chair of the American Zoo & Aquarium Association Polar Bear Species Survival Plan (SSP), and Bear Taxon Advisory Group. She is also active in the Polar Bear Sustainability Alliance. She is closely involved with all issues concerning zoo-based polar bears in North America, as well as contingency planning for compromised wild bears.

Susanne (Susi) Miller coordinates co-management activities with Alaska Natives and leads outreach and education efforts for the Service's Polar Bear Program. She has worked as a polar bear biologist for the U.S. Fish and Wildlife Service since 1993. The majority of Susi's work involves reducing human-bear conflicts in Alaska's native communities. Her most recent work has focused on monitoring polar bear interactions with humans and other bears (including brown bears), and on developing viewing guidelines for a growing tourism industry in coastal Alaska.

Martyn Obbard is a Research Scientist with the Ontario Ministry of Natural Resources. He has studied black bear and polar bear populations in Ontario since 1989, with an emphasis on demographics, effects of harvest, and climate change.

Nikita Ovsyanikov is the deputy director of science for the Wrangel Island Nature Reserve and a senior research scientist for the Institute of Ecology and Evolution, Russian Academy of Sciences. He has lived with polar bears on Wrangel and Herald Islands in the Arctic Circle for parts of each year since 1990. Born in Vienna, Austria, he is a Russian citizen. He holds a Ph.D. in Zoology from the Institute of Animal Evolutionary Morphology of the Russian Academy of Sciences. He wrote a book on polar bears called *Living with the White Bear* in 1996.

Craig Perham is the Polar Bear Incidental Take Coordinator for U.S. Fish & Wildlife Service in Alaska. He has studied polar bears for the last 9 years. His most recent work has focused on developing and refining techniques used for detecting maternal polar bear dens near industrial activities.

Mike Pederson coordinates the North Slope Borough's Polar Bear Deterrence Program on Alaska's Arctic Slope in five communities. He has worked on subsistence, cultural and wildlife management issues including the co-management since 1991.

Frank Pokiak is a hunter, fisherman, and chair of the Inuvialuit Game Council in Tuktoyaktuk, Northwest Territories.

Jennifer Reed is the Visitor Services Coordinator for Arctic National Wildlife Refuge and resides in Fairbanks, Alaska. She has worked with the public to increase awareness of human-bear conflict avoidance since 1992, and began focussing on human-polar bear issues specific to the community of Kaktovik, within Arctic Refuge, in 2004.

Dick Shideler is a bear biologist with the Alaska Department of Fish & Game in Fairbanks, AK. He has been involved in bear conflict research and management since 1988, specializing in grizzly and polar bear interactions with industry, especially North Slope oil development. He was on the organizing committee for the 2nd International Bear-People Conflicts Workshop in 1999 and is a member of the IUCN Bear Specialist Group Human-Bear Conflicts Expert Team.

Jim Wilder works for the U.S. Fish & Wildlife Service Polar Bear Program. He has worked in Alaska with black and brown bears with the U.S. National Park Service for the last 10 years, and polar bears with the U.S. Fish & Wildlife Service since 2008. His primary focus is improving bear-human conflict management techniques.

Geoff York has worked with polar bears since 1997. He spent 11 years as part of the USGS polar bear research project under the leadership of Dr. Steven Amstrup where he focused on field work methods, development of FLIR den detection techniques, and the use of RFID tags. Geoff is now the global coordinator of WWF's polar bear and Arctic Species efforts under their Arctic Program and is based in Ottawa Canada.