

Conservation Issues & Threats

Panel Organizers

Robert Buchanan

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Speakers

Dr. Scott Schliebe, Marine Mammal Management, U.S. Fish & Wildlife Service, Anchorage, AK

Gillian Eckhardt, PBI Researcher, University of Central Florida, Orlando, FL

Dr. Bill Watkins, Wildlife & Ecosystem Protection, Manitoba Conservation, Winnipeg, Manitoba, Canada

Scott Schliebe, Ph.D.

Marine Mammal Management, U.S. Fish & Wildlife Service, Anchorage, AK

Schliebe is a wildlife biologist who surveys polar-bear populations in Alaska and studies the effects of human activity on polar bears; he is also the chair of the IBA's Polar Bear Specialist Group. His presentation referenced polar bear populations in the Chukchi/Bering Sea area and the South Beaufort Sea.

These issues are potential areas of concern: harvest, contaminants, climate change, and human development in coastal areas.

Harvest: The Marine Mammal Protection Act (MMPA) was passed in the U.S. in 1972, and places a moratorium on the taking of mammals except for scientific purposes or native harvest. Natives in the South Beaufort area developed a user agreement in 1988 that goes beyond the MMPA, with sustainable harvest quotas, protection for females and cubs, habitat protection, annual meetings, and the use of scientific technical advisors. The Chukchi/Bering Sea population is a shared resource between the U.S. and Russia. The "U.S.-Russia Polar Bear Conservation Act" has been approved by the Senate but still needs Presidential ratification.

Contaminants: The MMPA requires hunters to tag polar bear hides and skulls within 30 days. The specimens acquired through this program show the presence of certain contaminants such as PCBs, chlorinated hydrocarbons, heavy metals, and brominated flame retardant. Concentrations of contaminants in this region are not as concentrated as in Svalbard, however.

Climate change: The Beaufort Sea coastal surveys are showing increasing numbers of bears near the shore. There seems to be a significant relationship between pack-ice development and presence of bears on shore: the further away the pack ice, the more bears on the coast. If climate change continues and pack ice continues to retreat, we will see more bears on the coast for longer periods of time. This study is important because oil and gas development takes place near the shore area—so those activities may overlap and impact polar bears.

Human development in coastal areas: Bowhead whale carcass sites on the coast draw large numbers of polar bears. As part of a coastal feeding ecology study, researchers observed mostly family groups feeding together. This is contrary to the stereotype of polar bears as solitary animals, and may be due to the fact that food is plentiful.

Wildlife biologists are working with industry to limit the effects of oil and gas activity on denning bears and to minimize potential harm from bear-human interaction. Corporations wanting to operate in the area must agree to operational terms and conditions, and must establish both a polar bear encounter/interaction plan and a monitoring plan; they must also work cooperatively with affected villages.

Gillian Eckhardt

University of Central Florida, Orlando, FL

PBI-funded case study prepared with James D. Roth and Jane M. Waterman. To evaluate the impact of humans and tourism on polar bears, Eckhardt goes to Churchill, Manitoba every fall for six to eight weeks.

Polar bears in the Hudson Bay area are among the most concentrated along any shore, with around 1200 bears estimated in the western Hudson Bay population. During summer and fall months when there is no sea ice, these bears are forced onto land, living on their fat storage from July to November due to lack of access to seals, their primary food source. In the fall male polar bears aggregate along the coast, and this congregation has resulted in a thriving ecotourism industry in Churchill, Manitoba, with up to 10,000 tourists visiting town in a 6-8 week period to view bears from vehicles, helicopters or temporary lodges. This high concentration of people and bears in a localized area increases the potential for unintended impacts on wildlife. Any potential disturbance of these bears, which have been fasting for up to 4 months, could be energetically costly to individual bears, and habituation to humans could pose a threat to bears and people in areas populated by both.

The study investigated the effect of human impacts on polar bear behavior near Churchill by observing polar bears from tundra vehicles during the fall tourist season in 2002 and 2003. Using natural scars and marks we identified 36 individual bears in 2003 (22 confirmed males, 6 females and 8 unknown sex), including 5 males identified in previous years. During our observations of bears, the average number of tourist vehicles within 100 m of a bear was 2.4, and in only 14% of our observations were no tundra vehicles within 100 m of the bear. Time budget analysis indicated lying down was by far the most common behavior (mean + SE = 76 + 4%), with locomotion occurring less frequently (9 + 2%). Females were significantly more likely than males to be walking or standing. When vehicles were present, bears spent significantly less time lying and more time standing.

The researchers investigated the effect of tourist vehicles on polar bear behavior by recording responses of bears to approaching vehicles. We recorded 76 approaches for multiple bears (19 permanently identified and up to 25 unknown bears), with up to six approaches per bear, to determine the factors that affect the likelihood of a bear's reaction to the vehicle (a change in body

position or any sudden movement by the bear at the time of approach). Bears reacted to the approaching vehicle in 40% of the approaches. The average distance at which bears reacted was 38 m. Approaches that were directly toward a bear were more likely to elicit a reaction than approaches at an oblique angle, but the average distance at which the reaction occurred was the same for both. Although the likelihood of reaction was not affected by the minimum number of days bears were in the tourist area, bears were much more likely to react to the first vehicle approach than subsequent approaches, implying that habituation occurs within a single day in the tourist area. Similarly, reaction distance decreased after the first approach. Raising the head during an approach significantly predicted a reaction, especially when multiple head-raises occurred. Such subtle behavioral cues may be used by tour operators to predict and avoid more energetically costly reactions by bears to human activities.

Bill Watkins, Ph.D.

Wildlife & Ecosystem Protection, Manitoba Conservation, Winnipeg, Manitoba, Canada

Many of the bears currently in zoos originated in the Churchill area—some because they were "problem bears," others because they were orphaned cubs. Manitoba

When the military left Churchill in the mid 1960s, polar bears began gathering at the dump during the ice-free season. With human-bear interactions increasing significantly, initial methods of control focused on killing the bears. By the mid-1970s, conservation officers began to relocate problem bears—either moving them out of town via helicopter or, in the case of chronic problem bears, to zoos. The polar bear holding facility became operational in 1981. With 23 cells, it is meant to keep problem bears in protective custody until the ice forms again. Bears are given only water, to mimic the natural metabolic process of bears in Churchill at that time of year. Other methods of control are the Polar Bear Alert program, signage, a 24-hour hotline, and live trapping. The success of the program is in the numbers: People killed an average of 11 bears per year in the 1970s, versus less than 2 per year today.

In 1995, the public began to complain vociferously about polar bears being donated to tropical countries. A new policy was established: Adult bears would no longer be donated to zoos (it was too difficult for them to adapt to captivity), and orphaned polar bear cubs could be donated only if the zoos met high standards for quality. In 2001, when it was discovered that the Suarez Circus bears had originally come from Manitoba, citizens were outraged. (The circus bears had probably been sold by a European zoo that received them from Manitoba.) This led to the Polar Bear Protection Act and Regulations in December 2002.

In the future, Manitoba will retain ownership of each cub and will put the bear on permanent loan. A written contract enables legal enforcement if standards of care decline. The Act sets standards in the areas of eligibility, facility, care, and behavioral enrichment. (For example, facility size is based on the number of bears, with a 500-square-meter minimum; a digging area is required, along with a pool possessing both shallow and deep ends.) Zoos must meet these more-stringent standards in all areas before a donation can occur.