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Sea Ice Arrives Late for Polar Bears of Western Hudson Bay
Early 2010 sea ice summer breakup and late winter freeze stresses Churchill's polar bears

December 7, 2010 (Churchill, MB): Hungry polar bears are finally beginning to leave the shores of Western Hudson Bay, Manitoba, Canada, returning to the sea ice to hunt seals as the Bay begins its overdue annual freeze-up. Each year, polar bears in this region are forced ashore when the sea ice melts in summer. While ashore they are largely food deprived. Biologists believe the extended period of time on land this summer and fall will continue to stress this population of polar bears, which attracts tourists every year to the town of Churchill, known as the “Polar Bear Capital of the World”.

“The Western Hudson Bay polar bears are experiencing two difficult situations in 2010: they were forced ashore by the summer melt around July 18, which is 2-3 weeks earlier than what used to be considered normal. And they have also had to wait an extended period of time for the winter freeze up – which is also several weeks later than in the past,” said Dr. Andrew Derocher, Professor of Biological Sciences at the University of Alberta and Scientific Advisor to Polar Bears International (PBI).

During the summer and autumn, when they can't hunt for seals and are forced to fast on land, polar bears lose up to 30 percent of their body mass because they burn up to 1 kg of stored body fat every day while they are waiting for the ice to freeze. The condition of individual bears is distributed from very skinny to very fat depending on how successful each bear was in hunting before being forced ashore. All bears lose weight while waiting for the ice to freeze, but those that came ashore in poorer condition are now particularly stressed because the late freeze means they have to stretch their meager reserves even farther.

“The earlier the breakup date, the greater the negative effect on dependent cubs, sub-adults, and very old bears. Adult females with dependent cubs are in a particularly difficult position because they are trying to hunt for themselves and their cubs while on the ice and then support themselves and nurse the cubs from the fat they have managed to store before coming ashore after breakup of the sea ice,” agreed Dr. Ian Stirling, Adjunct Professor, University of Alberta and Scientific Advisor to Polar Bears International. “If push comes to shove, some cubs may simply die because the female no longer has enough fat to continue producing milk but she will probably survive and may have more cubs the following year.”

“When I was on the tundra within the Manitoba Conservation, Churchill Wildlife Management Area during the third week of November, several young adult males looked in OK condition but I also saw some very thin bears and females with cubs that were clearly very nervous about nearby males that they recognized as possible predators of their young. We know from data that there were a lot of thinner animals around earlier in the fall. I also think that we are less likely to see many of the thinner ones out in the open in this particular area, walking around the Tundra Buggies®, where there is no chance for food. They are more likely to remain hunkered down to conserve energy or will go to places where the possibility of something to eat might seem more promising, such as a town, dump or hunting camp. All along the western coast of Hudson Bay, in both Manitoba and Nunavut, we have seen steadily increasing numbers of problem bears in the last decade or two. All of this is consistent with the research results from the last 20-30 years and the predictions of what will happen with a longer open-water season,” said Dr. Stirling.

The average date of breakup of the sea ice in Western Hudson Bay is now about three weeks earlier than it was only 30 years ago. The effect of earlier breakup is especially important because that is the best time of the year for hunting due to the abundance of fat and naïve ringed seal pups. So, if the bears come ashore with less fat than they would normally have because they had to leave the ice earlier than normal, but have to survive for much longer, it makes for a very energetically stressful situation for the bears.

Twenty years ago, the average date the bears returned to the ice was November 8; a decade ago that date stretched to November 20 and in 2009 the bears returned to the ice on approximately December 4. This year the bears have just begun to return to the ice in the past few days.

According to National Snow and Ice Data Center (NSIDC), sea ice coverage of the entire Arctic has been near record lows in fall 2010: “Even with the rapid ice growth at the beginning of the month, October 2010 had the third-lowest ice extent for the month in the satellite record. The linear trend for October steepened slightly from -5.9% per decade to -6.2% per decade.”

October 2010 NSIDC sea ice extent map:

http://nsidc.org/images/arcticseaicenews/20101102_Figure1.png

October 2010 NSIDC sea ice extent graph:

http://nsidc.org/images/arcticseaicenews/20101102_Figure2.png

During the 3rd week of November, shortly after Dr. Stirling’s visit to Churchill, the cubs of one very thin female died right in front of observers-apparently of starvation. Scientists have documented that survival rates of cubs have declined as the period of sea ice absence has increased in Hudson Bay.

“When scientists say survival of polar bears has declined, this really means that more polar bears are starving,” said Dr. Steven Amstrup, PBI’s senior scientist. “Such events can only become more frequent in the future because increased greenhouse gas levels guarantee that the climate will continue to warm, and a warmer world means less sea ice-in Hudson Bay and elsewhere. Scientists have projected that polar bears could disappear entirely by the end of the century if greenhouse gas emissions are not reduced.”

“We need to begin with personal commitments to the basics of reducing our carbon footprint: reduce energy consumption, recycle and buy recycled products, plant trees and encourage the

development of technology to reduce greenhouse gases, including the increased use of renewable energy sources.”

“Looking out at the unusual sight of open water of Western Hudson Bay in the first week of December can be very disheartening, but we need to use this as yet another motivator and reminder that we can help conserve polar bears and their Arctic habitat,” said Dr. Amstrup. Changes in the Arctic are occurring faster than other places on the globe. The loss of polar bears and their habitat, however, are a harbinger of global changes that are guaranteed if greenhouse gas levels continue to rise. So when we work to save the polar bears, we also save so many other species from butterflies to frogs.”

Polar Bears International is a non-profit organization dedicated to the conservation of polar bears and their arctic habitat through research, education and stewardship.