

# **Videos Show Polar Bears Struggling Not to Starve**

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**Body**

Scientists collected video from 20 ***bears*** during ice-free months to understand whether the animals can survive longer periods on land in a warming world.

Climate change is stretching the length of time parts of the Far North go without sea ice, which ***polar bears*** rely on to hunt their preferred prey: blubbery, calorie-rich seals. When the ice melts in summer, the ***bears*** move onto land and face two options. They can rest and slow down to a state approaching hibernation, or they can forage for alternative food like berries, bird eggs and small land animals.

Scientists tracking 20 ***polar bears*** in Manitoba, below the Arctic Circle at the southern end of the animals' range, found that the option the ***polar bears*** chose didn't make much difference. ***Bears*** who foraged generally got just enough calories from their small meals to replenish the energy they spent finding them, but not enough to maintain their body mass.

''Terrestrial foods are not adequate to prolong the period that ***polar bears*** can survive on land,'' said Anthony Pagano, a wildlife biologist at the U.S. Geological Survey and the lead author of a study based on the research, published on Tuesday in Nature Communications.

In western Hudson Bay, the ice-free period is three weeks longer now than it was in the 1970s, and ***polar bears*** currently spend about 130 days on land during the year. Scientists estimate that, going forward, there will be five to 10 more days without sea ice each decade.

The question of whether ***polar bears*** can survive for longer periods on land has been politicized at times as the creatures became a symbol of climate change.

A 2015 assessment by the International Union for the Conservation of Nature found a high probability of the global ***polar bear*** population declining by more than 30 percent by 2050. This local population in Hudson Bay may have shrunk by half already, from an estimated 1,200 ***bears*** in the 1980s to about 600 ***bears*** in 2021.

Nearly all the ***bears*** followed in the new study lost weight, and two individuals were on track to starve before the sea ice returned.

Anecdotal observations of individual ***polar bears*** eating ducks, geese, seabird eggs and even caribou on land have offered hope that the animals could adapt to a warmer world. But research simply documenting what ***polar bears*** are eating hasn't been enough to figure out whether the ***bears*** get enough calories from that food to help them survive longer periods without sea ice.

For this study, Dr. Pagano and colleagues traveled to Wapusk National Park in northern Manitoba. Over three summers, they captured 20 ***polar bears*** and fitted them with video cameras on collars to provide ***bear***'s eye views of their days.

[Video: Watch on YouTube.]

The scientists weighed the ***bears***, took blood samples and measured their breathing to paint detailed pictures of their body conditions, levels of activity and energy expenditure. They recaptured each ***bear*** after about three weeks, retrieving the cameras and repeating their measurements.

Putting cameras on ***polar bears*** is a new technique, and going through the video was ''amazing,'' Dr. Pagano said. ''To watch what a ***polar bear*** is actually doing in the wild was really gratifying.''

Six of the ***bears*** (fewer than the scientists had expected) appeared to rest and fast, while the others foraged and a few even went on long-distance swims.

The foraging ***bears*** were mostly seen eating grass, kelp and berries, with occasional bird carcasses, bones, caribou antlers, eggs and small mammals. Two of the swimmers found seal and beluga whale carcasses, but couldn't eat much while swimming in open water.

Regardless of whether the ***bears*** fasted or foraged, all except one lost similar amounts of weight. The scientists calculated a ''predicted date of starvation'' for each ***bear*** based on how much body fat and muscle it had, and how much energy it was estimated to be expending each day.

Most were predicted to be fine until the sea ice returned in November, but two young females, which tend to be the smallest ***polar bears***, had predicted dates of starvation before then, and a few others were close to that time. (The researchers had to leave in September and don't know what ultimately happened to the ***bears***.)

Dr. Pagano noted that the study didn't include any females with cubs, who burn much more energy while nursing. The researchers did include some pregnant ***bears***, but left before they gave birth.

These findings are ''what we feared and what we hoped not to see,'' but also somewhat expected, said Melanie Lancaster, a conservation biologist who specializes in Arctic species at the World Wildlife Fund.

Dr. Lancaster, who wasn't involved in the study, cautioned that these 20 ***bears*** only represent one population in one region. ''***Polar bears*** aren't experiencing the effects of climate change uniformly across the Arctic,'' she said. At higher latitudes where thicker sea ice persists over multiple years, ***polar bears*** are still doing well.

But for this declining population in Hudson Bay, the individual variability the researchers found is significant, said Gregory Thiemann, an associate professor at York University in Toronto who studies Arctic carnivores but wasn't involved in this research.

Each ***polar bear*** tried in its own way to cope, but the variation shows that there isn't one winning solution. ''It paints a collective picture that this is a group of ***bears*** sort of stretched to their biological limits,'' he said.

https://www.nytimes.com/2024/02/13/climate/***polar-bears***-climate-change-food.html

**Graphic**

PHOTO: A ***polar bear*** and her cub on Hudson Bay, in Manitoba, in 2022. A study tracked ***polar bears***' efforts to find food during ice-free periods. (PHOTOGRAPH BY OLIVIER MORIN/AGENCE FRANCE-PRESSE -- GETTY IMAGES) This article appeared in print on page A10.

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