

How polar bears find their prey

Researchers find the answer is blowing in the wind

Date: April 12, 2017

Source: University of Alberta

Summary: Researchers have demystified the way that polar bears search for their typical prey of ringed seals. The answer, it turns out, is simple: they follow their nose using the power of wind.

FULL STORY



Using satellite telemetry data collected from 123 adult polar bears in Canada's Hudson Bay over 11 years, the researchers merged the movements of polar bears with wind patterns to explore how they looked for seals. (Stock image)

Credit: © st_iv / Fotolia

Researchers at the University of Alberta have demystified the way that polar bears search for their typical prey of ringed seals. The answer, it turns out, is simple: they follow their nose using the power of wind.

Using satellite telemetry data collected from 123 adult polar bears in Canada's Hudson Bay over 11 years, the researchers merged the movements of polar bears with wind patterns to explore how they looked for seals.

They hypothesized that when a bear smells prey, it moves up-wind to find it. But what is a bear to do before it smells anything at all?

"Predators search for prey using odours in the air, and their success depends on how they move relative to the wind," explained Ron Togunov, University of Alberta alumnus and lead author on the study. "Travelling crosswind gives the bears a steady supply of new air streams and maximizes the area they can sense through smell."

While this phenomenon had been suspected in many animals, it had not been quantified in mammals until now.

The best conditions for olfactory hunting, explained UAlberta professor Andrew Derocher, co-author and polar bear expert, takes place at night during the winter.

"Crosswind search was most frequent when winds were slow, when it is easier to localize the source of a certain smell, and at night when bears are relatively active and when vision is less effective, so bears rely more heavily on their sense of smell."

The findings also raise questions about the implications of climate change.

"Wind speeds in the Arctic are projected to increase, potentially making olfaction more difficult," explained Togunov. "It is important to understand how polar bear hunting success will be affected by these changing conditions."

The study, "Windscares and olfactory foraging in a large carnivore," was published in *Scientific Reports* in April 2017.

Story Source:

Materials provided by **University of Alberta**. Note: Content may be edited for style and length.

Journal Reference:

1. Ron R. Togunov, Andrew E. Derocher, Nicholas J. Lunn. **Windscares and olfactory foraging in a large carnivore**. *Scientific Reports*, 2017; 7: 46332 DOI: 10.1038/srep46332

Cite This Page:

MLA

APA

Chicago

University of Alberta. "How polar bears find their prey: Researchers find the answer is blowing in the wind." ScienceDaily. ScienceDaily, 12 April 2017. <www.sciencedaily.com/releases/2017/04/170412085342.htm>.

RELATED STORIES



A Bastard Seal from the Past Reveals the Potential for Human Hybrids

Nov. 30, 2018 — If discovered as fossils, grey and ringed seals are so different that they could be classified as belonging to different families. Yet, a seal pup born in 1929 was found to be an almost perfect ...

read more »



Understanding Seal Movement Can Help Mitigate Seal-Fishery Conflict

Nov. 17, 2015 — Understanding the differences in the behavior of different seal species can help in the choice of the most effective measures to mitigate the seal-fishery conflict and in the sustainable management ... **read more »**



Polar Bears Unlikely to Thrive on Land-Based Foods

Apr. 1, 2015 — Polar bears, increasingly forced on shore due to sea ice loss, may be eating terrestrial

foods including berries, birds and eggs, but any nutritional gains are limited to a few individuals and likely
... **read more** »

Scent Communication in Polar Bears Explored

Nov. 4, 2014 — Scientists have provided the first systematic examination of the social information polar bears may glean from scent left in the paw prints of other polar bears. The authors also suggest that scent
... **read more** »