

How polar bears find their prey: Researchers find the answer is blowing in the wind

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Polar Bear (*Ursus maritimus*) near Kaktovik, Barter Island, Alaska. Credit: Alan Wilson/Wikipedia.

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 renowned polar bear expert, takes place at night during the winter.

"Crosswind search was most frequent when winds were slow, when is 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.

Provided by University of Alberta

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