

In 2004, the Barents Sea polar bear population was estimated at 1,900-3,600 bears, which is about a ninth of the world's total population. Close to 300 of these bears live in Svalbard year round, where the sea ice is shrinking fast



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SVALBARD
ARCHIPELAGO,
NORWEGIAN ARCTIC



Hello!

Welcome to your latest polar bear update



Jon Aars, polar bear biologist, Norwegian Polar Institute

Every spring, we sail around Svalbard to check up on your adopted polar bears. But this year we were in for a surprise. Unlike springs of recent memory, the islands were surrounded by

lots of sea ice, just like the good old days! This is fantastic for the bears as it means they can hunt lots of seals and restore their fat reserves, but it does make our job harder. With the bears spread out across a vast area, and heavy ice restricting the progress of our ship, we had to take longer helicopter trips to find individuals to dart. Ultimately, we examined 45 bears and fitted 12 females with GPS tracking collars. Turn over to see what these tell us about your adopted bears. **Thanks for your support!**

MEET THE ADOPTION TEAM

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FIELD NOTES

HOME AND AWAY

Our long-term monitoring shows that polar bears have different ways of thriving in their icy world. But their home is changing...

Nothing beats the thrill of seeing a polar bear in the wild. And thanks to your adoption we're able to monitor the population in the Svalbard archipelago and the Barents Sea by examining individuals – we weigh and measure them, and take blood and hair samples. But, for efficiency, we rely heavily on tracking data from GPS collars.

Fitted to females, these devices show us how the bears use their home ranges (males' necks are too broad – the collars slide off over their heads). Over time, we've noticed that these Arctic wanderers tend to fall into two categories.

Some bears stay around the archipelago all year round. These 'coastal' bears depend on finding food in the same places each year, such as fjords where seals breed and rest on the ice that's attached to land. Most bears, however, roam far and wide. These 'offshore' bears follow the edge of the ice as it expands and retreats throughout the year, and use the drifting sea ice as a platform to hunt seals.

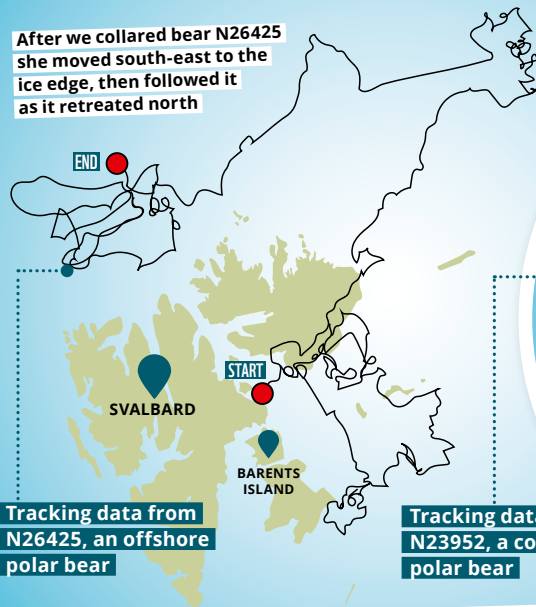
Like their coastal counterparts, adult females return to land to hole up in a maternity den in the autumn if they're pregnant – but they have to cover huge distances to do so. Why do they bother? Well, it turns out it can pay to travel

Two different 'types' of polar bear live in Svalbard – coastal and offshore. We're working to understand how climate change could affect them both

My colleague Magnus fitting a collar!

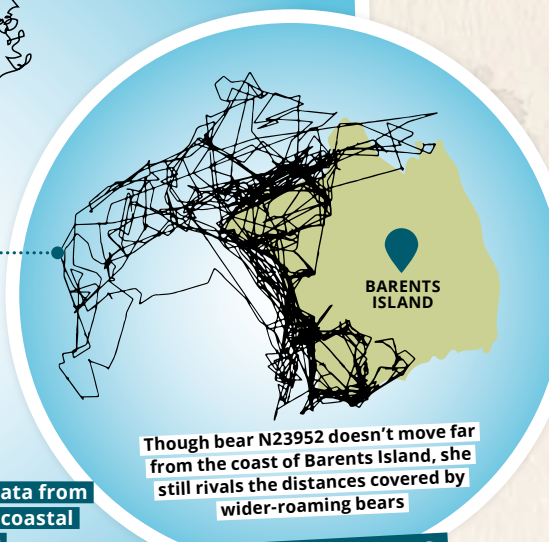


After we collared bear N26425 she moved south-east to the ice edge, then followed it as it retreated north



Tracking data from N26425, an offshore polar bear

Tracking data from N23952, a coastal polar bear



Though bear N23952 doesn't move far from the coast of Barents Island, she still rivals the distances covered by wider-roaming bears

DEN DETECTIVES

further for a good meal, as the reward of calorie-rich seals makes up for all the extra effort.

It's clear that the lives of polar bears are tied to the ebb and flow of ice. But with ice in the Barents Sea shrinking faster than anywhere else in the Arctic, how will they cope in future? This is a key area of our research. We know that coastal and offshore bears are facing challenges – but very different ones.

Melting homes

With the edge of the ice inching further north, pregnant wide-roaming bears potentially face a long, exhausting swim back to their denning sites on Svalbard, rather than walking across the ice. We think many of these bears instead head for western Russia, which could lead to a long-term decline in the number of bears in Svalbard. In some cases, the pregnancy ends because the female can't find a suitable den or enough food to sustain herself.

As for coastal bears, the shrinking sea ice is shortening their hunting season, and this could leave them with limited fat reserves to survive the winter and provide enough milk for their growing cubs.

With your support, we can keep monitoring polar bears and see how they're responding to their ever-warming world. Thank you.

Jon

Every autumn, we excitedly watch the satellite signals from our GPS-collared female bears to see if they've given birth. But how can we tell?

We compare the tracking data for each bear across winters. It shows how fast the bear travels, her head movements and the temperature around her (which is a few degrees warmer than the air due to her body heat warming the collar).

From this data, we can tell if she's moving around outside (active speed, more head movements and a low temperature) or she's settled down inside a den (no speed, fewer head movements and a higher temperature). Then we wait to see if she's given birth!

