

Study: Shorebirds who fly deep into Arctic face less predator danger

January 17 2010, By Amina Khan

Every year, shorebirds flap thousands and thousands of miles to the northern hemisphere, then back to the south. It's already an exhausting round trip. Yet some of those sandpipers and plovers choose to head deeper into the Arctic, tacking as much as 2,000 miles onto their journey.

Why they do it has long puzzled biologists.

"Why wouldn't they go in the low [Arctic](#) instead of the high Arctic? Why would you go so far north? It just increases the risk of getting lost, or getting cold," said Allan Baker, senior curator of ornithology and head of the Department of Natural History at the Royal Ontario Museum in Toronto. "It doesn't make sense."

In this week's issue of the [journal Science](#), a research team reports that the birds aren't just gluttons for punishment. They face fewer risks from predators at higher latitudes -- so going the extra distance pays off.

Until now, scientists believed the birds decided how and where to fly based on food scarcity, parasite pressures and the risk of being eaten during migration. But Canadian and French researchers decided to test a further theory -- that the birds were trying to save their nests from egg-raiding predators.

Using quail eggs, the scientists set up 1,555 artificial nests at seven sites up and down the latticework of islands in the Canadian Arctic. The task

was fairly straightforward, since a shorebird nest is generally just a depression scratched out of the sand with three or four eggs laid inside.

They then monitored the sites every few days to see how many had been stolen.

The scientists found that Arctic foxes and other predators were far less likely to gobble those eggs at the higher latitudes than the lower ones. With each one-degree increase in latitude, they calculated, there was a 3.6 percent decrease in risk of an egg being snatched.

From the lowest point at Akimiski Island, sitting at 53 degrees N, to the northernmost site at Ellesmere Island, 82 degrees north, the likelihood of a shorebird having its eggs eaten by hungry animals decreased by a whopping 65 percent.

Scientists aren't sure why this is. But it may be because predators are more numerous in the more agreeable climes further south, where it's easier to live and breed, said study co-author Laura McKinnon, a University of Quebec Ph.D. candidate.

It is unclear how a warming Arctic will affect the fate of the birds, Baker said.

"Global warming does benefit the birds initially, we hope, by reducing some of the deaths from freezing," he said. But, he added, it might mean the number of predators would rise in those warming areas as well. Scientists have yet to quantify the risks of predation, cold and exhaustion relative to one another, he said.

"Living on the edge, that's what these [birds](#) really do," he said. "It's a balance."

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Citation: Study: Shorebirds who fly deep into Arctic face less predator danger (2010, January 17)
retrieved 20 April 2024 from

<https://phys.org/news/2010-01-shorebirds-deep-arctic-predator-danger.html>

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