

A New Twist in Penguins' Already Uncertain Future



By CORNELIA DEAN

P. Dee Boersma, a biologist at the [University of Washington](#), has been watching the Magellanic penguins of Punta Tombo, in Argentina, for almost 30 years. For most of that time, their numbers have been declining: breeding pairs are down 22 percent there since 1987, she writes in Tuesday's issue of *BioScience*.

But the dwindling numbers do not just mean the birds are suffering, Dr. Boersma writes. Because penguins are "marine sentinels," their decline is a blunt message that their marine environment is in trouble, chiefly from overfishing and pollution from offshore oil operations and shipping.

Now, though, Dr. Boersma writes, they are also threatened by [climate change](#), which is reducing sea ice and, as a result, the abundance of the marine creatures the birds eat. Magellanic penguins can swim almost 100 miles a day, she said in an e-mail message, but to get enough to eat now they must venture as much as 40 miles farther from their nests than they did a decade ago.

Some of the food shortage is fishing-related, Dr. Boersma said, but some appears to be caused by climate change. As glaciers and sea ice retreat, she writes in her article, "even small variations can have major consequences for penguins."

Magellanic penguins (*Spheniscus magellanicus*) live on the Falkland Islands and on the coasts of Argentina and Chile. The Punta Tombo colony, where Dr. Boersma has worked for almost 30 years, is the largest, with perhaps 200,000 breeding pairs. She said she and her graduate students and volunteer assistants had banded more than 50,000 birds in the colony.

Climate change further threatens the birds because about half nest in burrows vulnerable to flooding, which seems to be on the rise. "Climate variation that brings more water to desert environments may benefit humans, but it will not help penguins," Dr. Boersma wrote. Their troubles show that "we have entered a new era of unprecedented challenges for marine systems."

Graham Harris, a conservationist who heads the Wildlife Conservation Society programs in Argentina, said in a telephone interview that changes in the birds' relative abundance and feeding patterns could reflect warming and other changes in the marine environment.

"They are a good indicator," he said.