

Grizzly-Polar Bear Hybrid Found -- But What Does It Mean?

John Roach
for [National Geographic News](#)

May 16, 2006

The animal [confirmed last week to be half polar bear, half grizzly bear](#) is certainly weird, scientists say, but he's not necessarily a symbol of global warming or anything else.

Last week, DNA analysis confirmed that the bear's father was a grizzly and his mother was a polar bear.

The bear's white fur was interspersed with brown patches. He also had long claws, a concave facial profile, and a humped back—all grizzly characteristics.

"It's of interest because it's rare, but that's kind of it," said Rosa Meehan, the chief of marine mammal management with the U.S. Fish and Wildlife Service in Anchorage, Alaska.

"I don't think there's more to it than that."

Meehan is overseeing a review of how changing environmental conditions in the Arctic are affecting polar bears. The study aims to determine whether the animals warrant federal protection in the U.S. as an endangered species.

She says the hybrid sheds no light on the question of the species' possible endangered status or on global warming's potential role in the species' decline.

David Paetkau is president of Wildlife Genetics International, the Nelson, Canada-based firm that confirmed the bear is a hybrid. He says it is too early to conclude anything about the discovery.

"This is one instance," Paetkau said. "As a scientist, you can't say anything about one instance, other than, What should we name it?"

Unofficial names include "grolar bear" and "pizzly," according to Ian Stirling, a research scientist and polar bear expert with the Canadian Wildlife Service in Edmonton.

Stirling said grizzly bears have been showing up in the Canada's western Arctic as far north as Banks Island and Victoria Island in the province of Nunavut (see these islands in the upper left of our [Nunavut map](#)) periodically for the past 50 years.

The hybrid, he said, is "definitely not" a sign of climate change.

Closely Related

According to Paetkau, the genetics expert, grizzly and polar bears are the most closely related of the living bear species. The two species are close enough that the hybrid theoretically could have successfully mated with either a polar bear or a grizzly.

Fossil evidence of prehistoric polar bears is difficult to find, because polar bear ancestors lived in conditions that were poor for bone preservation, Paetkau says. But the two species probably diverged "less than a million years ago."

By contrast, North American black bears and grizzly bears diverged about five million years ago, he says.

Polar bear and grizzly habitat overlaps in the western Canadian Arctic around the Beaufort Sea. Grizzlies are known to occasionally go out on the ice in the spring to feed on seals killed by polar bears, the Canadian Wildlife Service's Stirling said.

Meehan, of the U.S. Fish and Wildlife Service, says polar bear and grizzly encounters have been reported in Kaktovik, the only permanent settlement on the North Slope of the Arctic National Wildlife Refuge (zoom in on our [map of the North Slope](#)).

But there's no romance there.

"The interactions are aggressive," she said

Paetkau, the geneticist, says it's not uncommon for bears to encounter each other in the wild and to view each other as prey, even within the same species.

But the rules change during the breeding season.

Multiple bear species, including polar bears and grizzlies, have been crossbred in zoos. Scientists just never expected a polar bear and grizzly to mate in the wild.

Both species require an extended mating ritual to reproduce. Females ovulate only after spending several days with a male and then mate several times over several days to ensure fertilization.

Mating between the two species is more than a chance encounter, according to the scientists.

"This is the first confirmed natural occurrence of something we know to be biologically possible, physiologically possible, and evolutionarily quite reasonable," Paetkau said.

Lingering Questions

Paetkau adds that the hybrid bear raises several questions.

On one hand, he said, these chance encounters could happen periodically. But since the offspring are weird looking and probably outcasts, they may have low reproductive success and thereby fail to pass their genes on to the next generation.

Polar bears would most likely prefer to mate with other polar bears and grizzlies with other grizzlies, rather than with an odd-looking hybrid, Paetkau says.

Genetic analysis of "pure" polar bear DNA and "pure" grizzly DNA, he adds, shows that interbreeding has not been common.

On the other hand, the warming Arctic environment is causing some animals to shift their range northward. It's possible, Paetkau says, that grizzly bears and polar bears may have more offspring-producing encounters in the future.

"With one sample, we have no way of distinguishing between the possibilities," he said.

"But it does make you sit up straight and want to keep track of that situation and get a sense over the next decade whether this will be a regular occurrence or whether it's a one-off."

Free Email News Updates

[Sign up for our Inside National Geographic newsletter.](#) Every two weeks we'll send you our top stories and pictures ([see sample](#)).