



Fossil records show that emperor penguins probably began their evolution during the time of the dinosaurs.¹

Protecting Emperor Penguins

They have survived dark Antarctic winters, frigid temperatures, and fierce predators such as leopard seals for millions² of years. However, some emperor penguin (*Aptenodytes forsteri*) colonies, including the one featured in the documentary “March of the Penguins,” face a grave future.

About emperor penguins

The emperor penguin is one of the most ice-dependent of all penguin species, requiring sea ice for foraging, breeding, and raising its young.³ It is the only penguin to breed on sea ice and remain in Antarctica through the winter.

The International Union for Conservation of Nature (IUCN) lists emperor penguins as Near Threatened with extinction.⁴ As of 2012, there were about 238,000 breeding pairs in existence,⁵ but scientists project that populations will plummet by as much as 33 percent by the turn of the century.⁶

Did You Know?

- Emperor penguins are the largest penguins, reaching up to 1.2 meters (4 feet) tall and weighing up to 38 kilograms (84 pounds), more than twice the size of the next-largest penguin species.⁷
 - They have just one chick per year per pair.⁸
 - They have no fixed nests, so they rely on vocal calls to locate their mates and chicks among thousands of birds.⁹
 - They travel up to 120.7 kilometers (75 miles) from their colonies to reach open water to search for food.¹⁰
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Habitat and threats

Emperor penguins require an abundant¹¹ and accessible food supply consisting primarily of krill, the tiny shrimplike crustaceans that serve as building blocks of the food web in the Southern Ocean off Antarctica.

Much of the industrial fishing for Antarctic krill occurs in coastal waters and overlaps with penguin foraging areas. If this activity continues close to coastal areas, and if sea-ice coverage continues to decrease as a result of climate change, penguins will have to travel farther from their colonies to find food. The longer the parents are away, the greater the likelihood that their chicks will succumb to predation and starvation.

What we can do

The Pew Charitable Trusts advocates for ecosystem-based management of fisheries and a network of marine reserves in the Southern Ocean to protect emperor penguins and their habitat. Pew recommends:

- Creation of marine reserves to protect emperor penguin food sources and foraging grounds.
- Precautionary management of the Antarctic krill fishery.

The Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR) is an international body of 24 countries and the European Union with the authority to create large-scale, fully protected marine reserves in the waters surrounding Antarctica. Action by CCAMLR is needed to help alleviate threats to these penguins and to protect them for the future.



Where Emperor Penguins Live



Threats:

Climate change and diminished and dispersed prey

Population:

238,000 breeding pairs

IUCN status:

Near Threatened

The Ross Sea, located along the Antarctic coast south of New Zealand, is home to 26 percent of the world's emperor penguins.¹² An estimated 50,000 pairs of emperors live in the waters off East Antarctica.

Endnotes

- 1 Carl Zimmer, "DNA Studies Suggest Emperor Is Most Ancient of Penguins," *New York Times*, Oct. 11, 2005, <http://www.nytimes.com/2005/10/11/science/11peng.html?pagewanted=all>.
- 2 Zimmer, "DNA Studies Suggest."
- 3 David Levin, "The Decline and Fall of the Emperor Penguin?" *Oceanus*, Nov. 21, 2013, <https://www.who.edu/oceanus/feature/the-decline-and-fall-of-the-emperor-penguin>.
- 4 International Union for Conservation of Nature Red List, <http://www.iucnredlist.org/details/full/22697752/0>.
- 5 Ibid., citing P.T. Fretwell et al., "An Emperor Penguin Population Estimate: The First Global, Synoptic Survey of a Species From Space," *PLoS ONE* 7 (2012), doi:10.1371/journal.pone.0033751.
- 6 Stephanie Jenouvrier et al., "Projected Continent-Wide Declines of the Emperor Penguin Under Climate Change," *Nature Climate Change* 28 (2014), doi: 10.1038/NCLIMATE2280.
- 7 Public Broadcasting Service, "Penguins of the Antarctic," <http://www.pbs.org/wnet/nature/episodes/penguins-of-the-antarctic/interactive-map-antarctic-penguin-habitats/185>.
- 8 David Ainley et al., "Antarctic Penguin Response to Habitat Change as Earth's Troposphere Reaches 2 Degrees C Above Preindustrial Levels," *Ecological Monographs* 80, no. 1 (2010): 49-66, <http://dx.doi.org/10.1890/08-2289.1>. Accessed July 10, 2014.
- 9 Tony D. Williams, *The Penguins* (Oxford, England: Oxford University Press, 1995).
- 10 Becky Oskin, "Emperor Penguins Need Sea Ice for Foraging," *Live Science*, Nov. 21, 2012, <http://www.livescience.com/24977-emperor-penguins-rest-ice-antarctic.html>.
- 11 Ainley et al., "Antarctic Penguin Response."
- 12 The Pew Charitable Trusts, environmental initiatives, <http://advocacy.pewenvironment.org/ea-action/action?ea.client.id=1793&ea.campaign.id=25489&ea.tracking.id=Web>.



Find out how you can help emperor penguins:

pewtrusts.org/penguins

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