

Emperor penguins, Antarctic fur seals now on endangered species Red List

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The International Union for Conservation of Nature (IUCN) recently added the emperor penguin (*Aptenodytes forsteri*) and the Antarctic fur seal (*Arctocephalus gazella*) to its Red List of endangered species. The listing underlines the impact of climate change on Antarctica that is posing an existential threat to wildlife with rising sea levels and atmospheric temperatures.

The IUCN, founded in 1948, is a global environmental network that produces the Red List of threatened species. It currently contains a staggering 48,600, that is 28 percent of assessed species are considered in danger of extinction. The assessed species includes 172,600, including animals (mammals, birds, fish, invertebrates), plants (conifers, cycads), and fungi.

The emperor penguin breeding colonies form in the dead of the Antarctic winter and are studied through high resolution satellite pictures as direct observation is almost impossible. Studies estimate that the penguins' population declined by approximately 10 percent between 2009 and 2018 alone, or the equivalent of more than 20,000 adult penguins. The current emperor penguin population is estimated at 595,000 adults.

The IUCN has now moved the penguin from Near Threatened to Endangered on the Red List, based on projections that its population will halve by the 2080s.

Emperor Penguins form colonies and breed on fast or landfast ice, that is ice shelves, or grounded icebergs attached to the Antarctic coastline. These ice shelves are breaking up, leading chicks to die as a result of drowning and freezing as they have not developed mature waterproof feathers. The ice shelf breakup leads to chicks being plunged into the water. Their downy feathers become waterlogged leading to their drowning. Those that manage to get back onto the remaining ice platform freeze to death.

Dr Peter Fretwell, a cartographer at the British Antarctic Survey, was part of the team that reported the disintegration of the colony in the Bellingshausen Sea on the west side of the Antarctic Peninsula in 2022. He told the *Guardian*, "It's a grim story. I was shocked. It's very hard

to think of these cute fluffy chicks dying in large numbers."

The destruction of colonies is becoming more frequent. In 2019 scientists reported the collapse of the Brunt Ice Shelf on the Weddell Sea, part of the Southern Ocean between Coats Land and the Antarctic Peninsula. Thousands of penguin chicks died, causing the adult penguins to abandon the shelf. The Brunt shelf was previously considered stable and harboured a penguin population of between 14,000 to 25,000 pairs of adult penguins. The shelf started breaking up in 2016 with a large crack appearing in it known as the "Halloween Crack" culminating with the complete breakup by 2019. The shelf has failed to re-form in subsequent years.

Dr Fretwell told the British Broadcasting Corporation (BBC), "The sea-ice that's formed since 2016 hasn't been as strong. Storm events that occur in October and November will now blow it out early. So there's been some sort of regime change. Sea-ice that was previously stable and reliable is now just untenable."

While the immediate cause of the ice shelf collapse is not known, scientists consider that global warming has undermined the shelves.

Former BAS head of conservation ecology, Dr Phil Trathan, told the BBC, "What's interesting for me is not that colonies move or that we can have major breeding failures—we know that. It's that we are talking here about the deep embayment of the Weddell Sea, which is potentially one of the climate change refugia [an area that is buffered from harsh environmental changes affecting the surrounding region] for those cold-adapted species like emperor penguins. And so if we see major disturbances in these refugia—where we haven't previously seen changes in 60 years—that's an important signal."

Meanwhile, the Antarctic Fur seal live in the sub-Antarctic islands such as South Georgia in large colonies that have suffered a precipitous decline in numbers, from 2,187,000 mature seals in 1999 to only 944,000 in 2025. Colonies such as the South Orkneys have declined by 47 percent while Cape Shirreff by 86 percent. IUCN has placed the seal on its Red List of endangered species due to the rapid decline in

population numbers.

Seal pup survival has been undermined by the reduction in sea ice and the major food source of nursing mother seals, the Antarctic krill, has moved to deeper colder waters putting it out of reach. The krill has moved to avoid the warming temperatures of shallower water. The destruction of sea ice has affected the Antarctic food chain destroying algae living on the underside of the ice and undermining the seals' primary food source.

IUCN Director General Dr Grethel Aguilar commented, “[The] declines of the emperor penguin and Antarctic fur seal on the IUCN Red List are a wake-up call on the realities of climate change... Antarctica’s role as our planet’s ‘frozen guardian’ is irreplaceable—offering untold benefits to humans, stabilising the climate and providing refuge to unique wildlife.”

Antarctica plays an enormous role in stabilising the world’s temperature and climate system as well as providing a refuge for unique wildlife. It does this by reflecting 85 percent of the sun’s radiation back into space. It prevents the Southern Ocean from absorbing excess heat and drives ocean circulation that absorbs 40 percent of human produced carbon dioxide, slowing the rate of global warming through a process known as thermal inertia.

The placing of the Emperor Penguin and the Antarctic Fur seal on the Endangered list of species is a stark warning of the consequences of global warming on the continent. Senior lecturer in climate science Dr. Kyle Clem and his research team at Victoria University of Wellington in New Zealand, in an important paper Record warming at the South Pole during the past three decades published in Nature Climate Change in June 2020, estimated that Antarctica is warming at three times the rate of the rest of the planet causing the loss of 100 billion metric tons of ice annually.

A preprint article, “Aptenodytes forsteri, Emperor Penguin,” published by the IUCN coinciding with the Red List announcement stated: “Evidence is now emerging that a regime shift has occurred in Antarctic sea ice extent, which is both abrupt and non-linear. Most climate models agree that ongoing global climate change will lead to reductions in sea ice area of close to 30 percent (or 40 percent) in the latter part of the 21st century following medium (or high) emissions scenarios and therefore will affect Emperor Penguins.”

Recent studies have shown that the rate of global warming is accelerating with the last three years being the hottest on record, continuing a decades-long trend of increasing temperatures. The overall rate of increase has risen from 0.2 degrees C. per decade in the 1970s to around 0.35 degrees C. per decade currently, based on NASA data.

The Red List announcement was made just before the 48th

Antarctic Treaty Consultative Meeting held 11 to 21 May in Japan calling on countries to impose a “Specially Protected” designation under the Antarctic Treaty that would provide endangered species with stricter legal safeguards against threats like industrial krill fishing.

IUCN umbrella organisations such as the World Wide Fund for Nature (WWF) Australia and WWF US have been calling for the “Specially Protected” status since 2022. “Specially Protected” means the prohibition of any interference with the species and the protection of habitats. The status is being vetoed by China and Russia as it would halt its industrial krill fishing in the region.

Such a status may stop interference with the endangered species, but it would do nothing to halt global warming, the ultimate driver of the environmental disaster in Antarctica.

Countries such as the US, China, France, Germany, India, and Australia, that are members of the IUCN, may endorse the protection of endangered animals but would do nothing to curb the production of greenhouse gasses and introduce a de-carbonised economy. US President Trump denies the very existence of climate change and is doing everything possible to dismantle any mention of this scientific fact. Other countries such as Australia pay lip service to resolving the crisis but in reality, are doing nothing to limit production of greenhouse gasses and are expanding mining of coal and petroleum.

The protection of species such as the Emperor Penguin and the Antarctic fur seal is a necessary step but any meaningful resolution of the environmental crisis can only be achieved by halting the production of greenhouse gasses that is not only threatening Antarctic species but the whole of humanity. This can only occur by forging an alliance of workers, youth and principled scientists in the fight for a socialist society where the social interests of humanity, not private profit, are the primary concern.



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