

US decision on polar bear status on hold

Officials say they need more time to assess climate threat.

Susan Brown

Retreating ice is expected to cause problems for polar bears. GETTY

US officials have delayed their decision on whether polar bears should be listed as threatened under the Endangered Species Act, missing their 9 January deadline. Unlike previous assessments, the status of the bears relies heavily on climate change and the future of the planet's Arctic ice – factors that officials say make the assessment more complicated.

The decision, to be made by the US Fish and Wildlife Service, relies on evidence provided by the US Geological Survey, which produced several reports in September 2007. These include "cutting edge" research and the development of new methodologies, some of which are unfamiliar to the people weighing up the evidence, says Dale Hall, director of the wildlife service. He says they need more time to make an informed decision.

In May 2006, the World Conservation Union listed polar bears as 'vulnerable', which means they face a high risk of extinction in the wild. The laws of individual nations govern which measures are taken to protect the bears.

Vital questions

In January 2007, the wildlife service asked the US Geological Survey to address three questions: How much ice is melting, how fast is it melting, and how will this affect polar bears?

Answering those seemingly simple questions was a challenge, not only because the future climate is difficult to predict, but also because data on the bears is so meagre. Little is known about the bears that live in the most remote regions, such as the Arctic basin at the very top of the world. Among the 19 subpopulations found throughout the Arctic, there are three whose numbers have never been counted and are unknown.

"The goal was to try and extract the maximum amount of information from the data that we do have," says Steven Amstrup, who leads the polar bear research group at the US Geological Survey in Anchorage, Alaska.

Amstrup and colleagues have assessed the effects of individual stressors, such as hunting and ice loss, and used a 'Bayesian network model' to estimate the likelihood of different outcomes to the stressors. They found that declining sea ice overrode all other factors, and that several populations of polar bears, including those found along the southern Beaufort Sea, north of Alaska, were likely to vanish by the end of this century.

The model takes into account other studies conducted by the US Geological Survey, including one led by George Durner that looked at 10 different climate models and compared maps of predicted sea-ice extent with profiles describing where polar bears are most likely to be found. Matching habitat preferences to maps is commonly used to predict a species' range, Durner says. What's unusual is for the method to be applied to so vast an area — the entire polar basin in this case — and for the maps to be based on complex projections. The more usual scenario is to look at map changes caused by the flooding of a wetland or the clearing of a forest, for example.

Report review

Andrew Derocher, a wildlife biologist at the University of Alberta in Edmonton, Canada, who has studied polar bears for more than 20 years, says these new aspects in the report have taken him some time to work through and understand. Nevertheless, he says, he is surprised that the decision is taking so long. "After the reports came out, I thought it was a done deal," he says.

If the US Geological Survey's conclusions are accepted by the wildlife service, this may set a precedent for proactive management of wildlife before there are serious declines in population says Derocher. This is important when the primary threat — climate change — is in practice irreversible. When it comes to vanishing sea ice, Derocher says, "there's no way of putting it back".

The environmentalists who initially petitioned for the listing don't think the service should be allowed more time. It is three years since they made their initial request, says Brendan Cummings, an attorney with the Center for Biological Diversity, a conservation group based in Tucson, Arizona. Tomorrow they are expected to take legal action to force the wildlife service to respond within 60 days.

The service has already said that it intends to announce its decision within a month.

