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CRS Report for Congress

Polar Bears: Listing Under the Endangered Species Act

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Summary

Polar bears depend on an Arctic sea ice habitat, which some believe is threatened by climate warming causing an earlier thaw and later freeze of coastal sea ice. The Fish and Wildlife Service has proposed listing polar bears as threatened species under the Endangered Species Act, acknowledging the increasing threats to their existence. Although this listing decision must be solely based on the best available scientific and commercial information, some are concerned that an ESA listing might have extensive economic impacts, since federal agencies are required under the ESA to ensure that anything they authorize or fund that might affect polar bears would not jeopardize the survival of these bears or their sea ice habitat.

Background

The polar bear, *Ursus maritimus*, is one of the largest terrestrial carnivores, inhabiting circumpolar Arctic regions wherever sea ice is present for a substantial part of the year. Nineteen populations of polar bears have an estimated total abundance of 20,000 to 25,000 animals. Two of these populations occur within U.S. jurisdiction — the Southern Beaufort Sea population (shared with Canada) is estimated at 1,800 animals, while the Chukchi/Bering Seas population (shared with Russia) is estimated at 2,000 animals. Some believe that polar bear population abundance is declining worldwide.[1]

The polar bear is a carnivore, or meat eater, with the ringed seal as its primary prey. Over most of their range, polar bears remain on the sea ice year-round or spend at most only short periods on land. A polar bear may stalk a seal by waiting quietly for it to emerge from its blow hole, an opening seals make in the ice allowing them to breathe or

[1] Marine Mammal Commission, *Annual Report to Congress, 2005* (Bethesda, MD: July 15, 2006), p. 50 (hereafter cited as "Marine Mammal Commission report"). Population status and trends are not available for many of these populations. Two Canadian populations are known to be increasing, recovering under conservative harvest limits after severe past reductions. Two other populations in the Western Hudson Bay and the Southern Beaufort Sea are both declining.

climb out of the water to rest. In October and November, male polar bears head out onto pack ice where they spend the winter. Pregnant females, however, seek sites on the mainland or on sea ice to dig large dens in snow where they give birth and spend the winter.[2]

Because the primary habitat of the polar bear is sea ice and this species is evolutionarily adapted to life on sea ice, it is usually considered to be a marine mammal. In the United States, polar bears are protected and managed under the Marine Mammal Protection Act (MMPA; 16 U.S.C. §§1361, et seq.), with the Fish and Wildlife Service (FWS) as the federal management agency. The Alaska Nanuuq Commission, a Native organization representing villages in northern and northwestern Alaska, provides input on matters related to the conservation and sustainable use of polar bears. In addition, the multilateral 1973 Agreement on the Conservation of Polar Bears[3] and the 2000 bilateral Agreement Between the Government of the United States of America and the Government of the Russian Federation on the Conservation and Management of the Alaska-Chukotka Polar Bear Population provide a basis for international cooperation on polar bear management.

Human Activities Affecting This Species

Climate Change. A May 2002 report by an environmental organization raised concerns that polar bears were threatened by climate change.[4] An October 2003 article in the journal *Nature* confirmed that, in recent decades, the extent of Arctic sea ice has declined significantly as the result of climate warming: ice break-up in many areas is occurring earlier and freeze-up later.[5] In addition, others assert that Arctic sea ice is experiencing a continual decline that cannot easily be reversed.[6] Distribution patterns of some polar bear populations have changed in recent years. Greater numbers of bears are being found onshore near the Bering Sea,[7] and in some parts of Canada, with Inuit hunters reporting more bears present on land during summer and fall.[8] There may be several

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[2] U.S. Dept. of the Interior, Fish and Wildlife Service, "Polar Bear Fact Sheet," available at [http://www.fws.gov/home/feature/2006/polarbear.pdf], and "Polar Bear Questions and Answers," available at [http://www.fws.gov/home/feature/2006/PolarbearFAQ.pdf].

[3] Parties to this agreement are Canada, Denmark, Norway, the Russian Federation, and the United States.

[4] Stefan Norris, Lynn Rosentrater, and Pal Martin Eid, *Polar Bears at Risk*, World Wildlife Fund, May 2002, available at [http://www.ngo.grida.no/wwfap/polarbears/risk/PolarBearsAtRisk.pdf].

[5] Seymour Laxon, Neil Peacock, and Doug Smith, "High Interannual Variability of Sea Ice Thickness in the Arctic Region," *Nature*, v. 425 (Oct. 30, 2003), pp. 947-950.

[6] R. W. Lindsay and J. Zhang, "The Thinning of the Arctic Sea Ice, 1988-2003: Have We Passed a Tipping Point?," *Journal of Climate*, v. 18, no. 22 (2005), pp. 4879-4894.

[7] S. L. Schliebe, T. Evans, S. Miller, and J. Wilder, "Fall Distribution of Polar Bears along Northern Alaska Coastal Areas and Relationship to Pack Ice Position," in *Collection of Scientific Papers from the 4th International Conference of Marine Mammals of the Holarctic*, ed. V. M. Belkovich (St. Petersberg, Russia: 2006), p. 559.

[8] Unpublished reports in 2005 by M. Dowsley and M. Taylor, as cited in the FWS polar bear (continued...)

reasons for these changes, including changes in sea ice. The projected loss of sea ice may affect the polar bear in survival and reproduction by:

- shortening the season during which ice is available as a platform for hunting seals;
- increasing the distance between the ice edge and land, thereby making it more difficult for female bears to reach preferred denning areas;
- requiring bears to travel through fragmented sea ice and open water, which uses more energy than walking across stable ice formations;
- reducing the availability of ice-dependent prey, such as ringed seals; and
- requiring bears to spend more time on land, thereby increasing the potential for adverse human-polar bear interactions.[9]

Contaminants. Three main groups of contaminants are thought to present the greatest potential threat to polar bears — petroleum hydrocarbons, persistent organic pollutants (polychlorinated biphenyls, chlordanes, DDT and its metabolites, toxaphene, dieldrin, hexachlorobenzene, hexachlorocyclohexanes, and chlorobenzenes), and heavy metals. Polar bears are particularly vulnerable to oil spills, due to the damage of oil to polar bear fur (decreasing the bears' ability to thermoregulate) and to ingestion of oil (poisoning) from grooming and/or eating contaminated prey.[10] Although elevated concentrations of some persistent organic pollutants have been discovered in polar bears, it has been difficult to determine what biological effects these chemicals might have on polar bears. Mercury is the heavy metal of greatest concern because of its toxicity at low concentration, and its magnification and accumulation through the food chain. However, polar bears appear able to demethylate mercury and accumulate elevated levels of mercury without detrimental effects.[11]

Subsistence and Sport Harvest. The United States only allows limited subsistence harvest of polar bears by Alaska Natives.[12] In addition to subsistence harvest, Canada permits limited sport harvest of polar bears. Under 1994 amendments to the MMPA, U.S. citizens may obtain permits to import sport-harvested polar bear trophies from Canada.[13] There is greater concern for the Chukchi/Bering Seas population due to

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[8] (...continued)
status report (see footnote 18).

[9] Marine Mammal Commission report, p. 52.

[10] D.J. St. Aubin, "Physiologic and Toxic Effects on Polar Bears," in *Sea Mammals and Oil: Confronting the Risks*, J.R. Geraci and D.J. St. Aubin, eds. (New York, NY: Academic Press, Inc., 1990), p. 235-239.

[11] Arctic Monitoring and Assessment Programme, *AMAP Assessment 2002: Persistent Organic Pollutants in the Arctic* (Oslo, Norway: 2005), p. 123.

[12] In the year from July 1, 2004 through June 30, 2005, Alaska Natives harvested 27 bears from the Southern Beaufort Sea population and 33 bears from the Chukchi/Bering Sea population.

[13] Sections 4 and 5 of P.L. 103-238.

anecdotal evidence that unregulated harvest by Russian Natives on the Chukotka Peninsula may be reaching unsustainable levels.[14]

Protection Efforts

On February 17, 2005, FWS received a petition from the Center for Biological Diversity requesting that FWS list the polar bear as threatened throughout its range and that it designate critical habitat for this species.[15] The Natural Resources Defense Council and Greenpeace, Inc., joined as petitioners on July 5, 2005. On December 15, 2005, the petitioners filed a complaint, challenging FWS's failure to issue a 90-day finding on the petition.[16] On February 7, 2006, FWS announced a finding that the petition presented substantial scientific information indicating that listing the polar bear might be warranted, and subsequently announced the initiation of a formal status review.[17]

On January 9, 2007, FWS announced its 12-month finding on the petition — concluding that, after a review of scientific and commercial information,[18] listing the polar bear as a threatened species under the ESA was warranted — and formally proposed such listing.[19] This proposed rule does not designate critical habitat for the polar bear. A 90-day period (through April 9, 2007) was announced to receive data and comments, with requests for a public hearing accepted for 45 days (through February 23, 2007).

Internationally, polar bears are listed on Appendix II of the Convention on International Trade in Endangered Species of Fauna and Flora (CITES), which contains species not necessarily threatened with extinction but requiring controlled trade to prevent population declines.[20]

Controversy

The Secretary of the Interior must decide whether to list polar bears under the ESA based only on the best available scientific and commercial information, after an extensive series of procedural steps to ensure public participation and the collection of relevant information. At this point, the Secretary may not consider the economic effects that

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[14] Marine Mammal Commission report, p. 50-51.

[15] For additional background on the Endangered Species Act as well as regulatory procedures under this act, see CRS Report RL31654, *The Endangered Species Act: A Primer*, by M. Lynne Corn, Eugene H. Buck, and Pamela Baldwin.

[16] In a settlement agreement, approved on July 5, 2006, FWS agreed to submit a 12-month finding on the petition by December 27, 2006.

[17] 71 *Fed. Reg.* 6745, Feb. 9, 2006. Information on the status of the polar bear was solicited from the public in this notice and again in 71 *Fed. Reg.* 28653, May 17, 2006.

[18] The polar bear status assessment document is available at [http://alaska.fws.gov/fisheries/mmm/polarbear/pdf/Polar_Bear_%20Status_Assessment.pdf].

[19] 72 *Fed. Reg.* 1064-1099, Jan. 9, 2007.

[20] For additional background on CITES, see CRS Report RL32751, *The Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES): Background and Issues*, by Pervaze A. Sheikh and M. Lynne Corn.

listing may have on the area where the species occurs. This is the only place in the ESA where economic considerations are expressly forbidden; such considerations may enter in later stages. Economic factors cannot be taken into account at this stage, because Congress directed that listing be fundamentally a scientific question: is the continued existence of the species threatened?

Although economic considerations play no role in the ESA listing decision itself, the potential economic effect of an ESA listing of polar bears is an issue. Some are concerned that a decision to list polar bears under the ESA might have extremely broad and severe economic impacts, since federal agencies are required under the ESA to ensure that anything they authorize or fund that might affect polar bears would not jeopardize the survival of these bears or the sea ice where they live (their habitat). Affected industries and activities could include oil and gas exploration, commercial shipping, releases of toxic contaminants, and emissions of climate-affecting pollution.