



Polar Bears: Listing Under the Endangered Species Act

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Summary

On May 14, 2008, Interior Secretary Dirk Kempthorne announced the listing of polar bears as threatened under the Endangered Species Act (ESA). The controversial decision highlights the intersection of two significant issues currently before Congress—climate change and species protection. Under the ESA, a listing decision must rest solely on the best available scientific information concerning the species. Habitat loss has been a major reason for many decisions to add species to the list—in this case, loss of Arctic sea ice. The listing itself was praised by some environmentalists, who nonetheless deplored interim protective regulations for the polar bear as being too weak. Other parties, who opposed the listing itself, argued that the science supporting listing was weak, but felt that the regulations mitigated some of the economic impacts of the listing.

Congress is addressing the regulations. A provision in the 2009 omnibus appropriations bill (H.R. 1105) would allow the Secretaries of the Interior and Commerce to withdraw the regulations without any administrative steps, effectively eliminating the special rules that were promulgated for this species.

Polar bears depend on Arctic sea ice, which most scientists acknowledge will be affected by climate change causing, at minimum, an earlier annual or seasonal thaw and a later freeze of coastal sea ice. Scientists generally agree that in recent decades, the observed extent of Arctic sea ice has declined significantly as the result of climate warming: annual ice break-up in many areas is occurring earlier and freeze-up later. Globally, less than one-third of the 19 known or recognized polar bear populations are declining, more than one-third are increasing or stable. For the remaining one-third there is insufficient data to estimate population trends. Two polar bear populations occur within U.S. jurisdiction. There is considerable uncertainty in estimates of polar bear population numbers and trends as well as in our understanding of polar bear habitat.

Polar bears are affected by climate change, environmental contaminants, and subsistence and sport hunting. Arctic sea ice is experiencing a continuing decline that may not be reversed easily, and some models project that late summer (September) sea ice could even disappear completely by mid-century. Controversy exists over how great a threat the changing climate might be to polar bears and whether they might be able to adapt to these changing conditions.

Some point out that polar bears today are not coping with changing climate alone, but also face a host of other human-induced factors—including oil and gas exploration, shipping, contaminants, and reduced prey populations—that compound the threat to their continued existence. Three main groups of contaminants threaten polar bears—petroleum hydrocarbons, persistent organic pollutants, and heavy metals. The United States has allowed limited subsistence harvest of polar bears by Alaska Natives. In Canada, Native hunters are permitted to allocate a limited portion of the subsistence harvest to sport hunters. Under 1994 amendments to the Marine Mammal Protection Act (MMPA), U.S. citizens may obtain permits to import sport-harvested polar bear trophies from Canada. However, with ESA listing, polar bear populations are defined as depleted under MMPA, and therefore entry of these trophies is prohibited by MMPA.

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Acting under a court-ordered deadline, on May 14, 2008, Interior Secretary Dirk Kempthorne announced a decision to list the polar bear as threatened throughout its range, and subsequently issued a final special rule for its conservation. Congress has addressed the regulations. A provision of the omnibus appropriations bill of 2009 (H.R. 1105) would authorize the Secretary of the Interior to withdraw or reissue the regulation “without regard to any provision of statute or regulation.”¹ This means that no rulemaking steps would be required, such as notice and comment periods. The bill would allow the previous regulations to return to effect.² A proposed amendment (S.Amdt. 599) would require the Secretaries to follow full rulemaking procedures if they withdrew or re-promulgated the regulations, and require a comment period of at least 60 days.³ The decision to list the species under the Endangered Species Act (ESA; 16 U.S.C. §§ 1531 et seq.) highlights the intersection of two significant issues currently before Congress—climate change and species protection. Listing decisions must rest solely on the best available scientific understanding of the species. For this species, a major threat is loss of its primary habitat on the Arctic sea ice, an ecosystem that is changing rapidly.

Background

The polar bear, *Ursus maritimus*, is the largest terrestrial carnivore and a top predator, inhabiting circumpolar Arctic regions wherever sea ice is present for a substantial part of the year. Polar bears are well adapted to the Arctic, where ice thickness can increase or decrease rapidly as well as differ significantly from year to year and between regions.⁴ Nineteen known or identified populations of polar bears are estimated to total 20,000 to 25,000 animals (**Figure 1**). Two of these populations occur within U.S. jurisdiction—the Southern Beaufort Sea population (shared about equally with Canada), estimated at 1,526 animals;⁵ and the Chukchi/Bering Seas population (shared with Russia), estimated at about 2,000 animals.⁶

¹ H.R. 1105, Div. E, Tit. IV, § 429(a)(1). This provision also would authorize withdrawing the special rules that were issued for the polar bear. For more analysis on the polar bear special rules, see CRS Report RL34573, *Does the Endangered Species Act (ESA) Listing Provide More Protection of the Polar Bear?: A Look at the Special Rules*, by Kristina Alexander.

² The bill provides that if the rule is withdrawn, the Secretary “shall implement the provisions of law under which the rule was issued in accordance with the regulations in effect under such provisions immediately before the effective date of such rule, except as otherwise provided by any Act or rule that takes effect after the effective date of the rule that is withdrawn.” H.R. 1105, Div. E, Tit. IV, § 429(b).

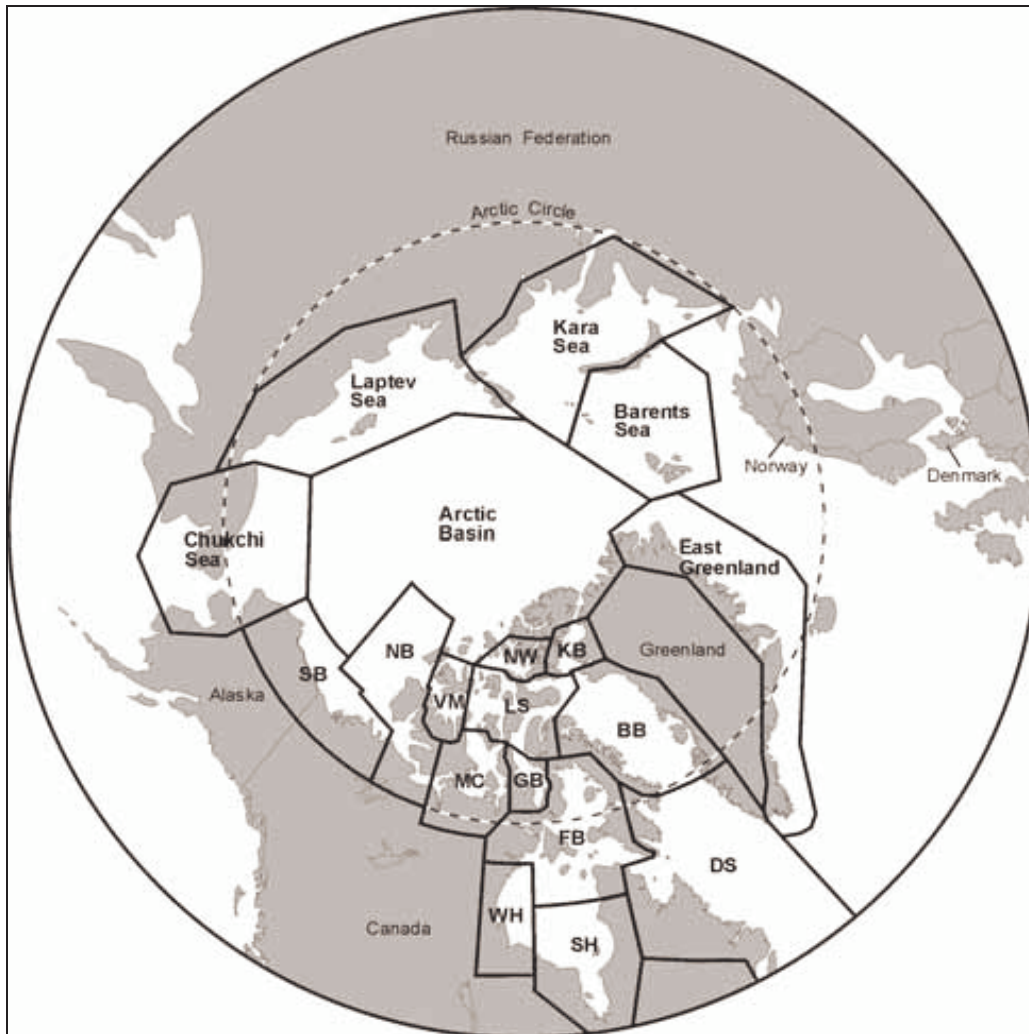
³ S.Amdt. 599.

⁴ Seymour Laxon, Neil Peacock, and Doug Smith, “High Interannual Variability of Sea Ice Thickness in the Arctic Region,” *Nature*, v. 425 (October 30, 2003): 947-950.

⁵ E. V. Regehr, S. C. Amstrup, and I. Stirling, *Polar Bear Population Status in the Southern Beaufort Sea*, U.S. Geological Survey, Open File Report 1337 (2006).

⁶ This population estimate, by the Polar Bear Specialist Group, has low statistical confidence, with no estimate of precision or bias. See *Proceedings of the 14th Working Meeting of the IUCN/SSC Polar Bear Specialist Group*, Occasional Paper of the IUCN Species Survival Commission No. 32 (2006), available at <http://pbsg.npolar.no/docs/PBSG14proc.pdf>; hereafter referred to as “Polar Bear Specialist Group.”

Figure 1. Distribution of Polar Bear Populations Throughout the Circumpolar Basin



Source: Polar Bear Specialist Group, *Proceedings of the 14th Working Meeting of the IUCN/SSC Polar Bear Specialist Group*, p. 33.

Notes: SB = Southern Beaufort Sea, NB = Northern Beaufort Sea, VM = Viscount Melville, NW = Norwegian Bay, LS = Lancaster Sound, MC = McClintock Channel, GB = Gulf of Boothia, FB = Fove Basin, WH = Western Hudson Bay, SH = Southern Hudson Bay, KB = Kane Basin, BB = Baffin Bay, DS = Davis Strait.

Robust data on polar bear populations are difficult to obtain. Globally, less than one-third of the world's 19 polar bear populations are known to be declining, and more than one-third are increasing or stable. In the remaining third, data are insufficient to estimate population trends and their status has not been assessed.⁷ In the United States, the polar bear population shared with Canada in the Southern Beaufort Sea may be starting to decline. In the Chukchi Sea population, shared with the Russia, over-harvest on the Russian side is considered a problem. Elsewhere, studies suggest that polar bear numbers are declining in Western Hudson Bay;⁸ a multi-year study,

⁷ Polar Bear Specialist Group, pp. 34-35.

⁸ I. Stirling and C. Parkinson, "Possible Effects of Climate Warming on Selected Populations of Polar Bears (*Ursus* (continued...))

following local reports of more bears being seen in the northern parts of the population range, will determine if the observed decline is the result of a change in distribution or an actual reduction in abundance.⁹ Simulations suggest that polar bear populations are also declining in Baffin Bay, Kane Basin, and Norwegian Bay. The status of polar bears in the Central Arctic Basin—where there are transient bears that normally reside in other regional populations—is unknown. Two of the most southerly polar bear populations, in Southern Hudson Bay¹⁰ and Davis Strait,¹¹ show no evidence of population decline over the past two decades of decreasing sea ice.

Much of what is known about the polar bear populations and habitat is confined to regions close to shore that have been studied during long summer days, with little known about what happens on drifting sea ice far from shore, especially in winter when there is little or no daylight. Some observers urge caution in interpreting studies of sea ice change that are based primarily on surveys of nearshore regions, rather than the drifting sea ice environment in the Central Arctic Basin, where ice may be thickest. While the Central Arctic Basin currently is marginal habitat for small numbers of transient bears from other populations, changing climate could cause this area to become more important as a refugium for polar bears.

Polar Bear Life Cycle

The primary food of this large predator is the ringed seal (*Phoca hispida*). A polar bear may stalk a seal by waiting quietly for one to emerge from an opening in the ice that seals make to breathe or to climb out of the water to rest. Ringed seals have a circumpolar distribution and are associated with ice for birthing and molting in the spring. Much of ringed seal habitat (especially in offshore drifting sea ice) has not been surveyed, leading to much uncertainty regarding population size and status. Current estimates of the global population numbers for ringed seals range from 2 million to as many as 7 million animals. Other polar bear prey include bearded and harp seals, juvenile walrus, beluga whales, narwhal, fish, and seabirds and their eggs. Over most of their range, polar bears remain on the sea ice year-round or spend at most only short periods on land. In October and November, male polar bears, and females that are not pregnant, head out onto sea ice where they spend the winter.

Pregnant females dig large dens in snow where they give birth and spend the winter.¹² Females seek denning sites either on the sea ice (“pelagic bears”) or on mainland areas (“nearshore bears”); some individuals seem to prefer mainland sites. Both pelagic and nearshore individuals are known in all subpopulations studied.¹³ Annual rates of population increase for polar bears may

(...continued)

maritimus) in the Canadian Arctic,” *Arctic*, v. 59 (September 2006): 261-275.

⁹ Government of Nunavut, Submission from the Government of Nunavut, Department of Environment to the Supervisor, U.S. FWS, April 6, 2007, Appendix A, p. 31. The study was to be completed in the fall of 2007; final results are not yet available.

¹⁰ I. Stirling et al., “Polar Bear Distribution and Abundance on the Southwestern Hudson Bay Coast During the Open Water Season, in Relation to Population Trends and Annual Sea Ice Patterns,” *Arctic*, v. 57 (March 2004): 15-26.

¹¹ Government of Nunavut, Submission from the Government of Nunavut, Department of Environment to the Supervisor, U.S. FWS, April 6, 2007, p.7.

¹² 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>.

¹³ Mette Mauritzen, Andrew E. Derocher, and Oystein Wiig, “Space-Use Strategies of Female Polar Bears in a Dynamic Sea Ice Habitat,” *Canadian Journal of Zoology*, v. 79 (September 2001): 1704-1713.

be as much as 5%, with mature females reproducing once every three years (commonly twins, more rarely triplets).¹⁴ Large carnivorous mammals are generally considered to be most at risk of population declines and extinctions,¹⁵ and the minimum viable total population of polar bears has been estimated at 4,961 adults.¹⁶

Effects of Climate Change¹⁷

Climate change is widely considered one of the most significant contemporary threats to biodiversity worldwide.¹⁸ Studies by the U.S. Geological Survey (USGS) state that two-thirds of the world's polar bear population could be lost within 50 years.¹⁹ A May 2002 report by the World Wildlife Fund raised public concern that polar bear populations are threatened by climate change.²⁰ Scientists have observed that, in recent decades, the extent of Arctic sea ice has declined significantly, and indicate that the reduction results from climate warming: annual ice break-up in many areas is occurring earlier and freeze-up later. Arctic sea ice is experiencing a continuing decline that, it is thought, may not easily be reversed,²¹ and some models project that Arctic late summer (September) sea ice could disappear completely by mid-century.²² In an analysis of climate models in light of Arctic ice conditions and polar bear impacts, USGS addressed the uncertainties in the models, but stated:

Climate model simulations are in universal accord that greenhouse gas increases will cause Arctic sea ice cover to decline, with the greatest reductions occurring at the end of the summer melt season.... A further consistency in climate simulations is the uneven latitudinal distribution of global warming, which always has its greatest simulated impact in the high northern latitudes. This "polar amplification" and associated sea ice decline have been consistent climate simulation features at least since the early simulation of Manabe and Souffer (1980). Since Chapman and

¹⁴ A. E. Derocher, "Polar Bear," In *Encyclopedia of the Arctic*, M. Nuttall, ed. (Routledge, 2005), v. 3, p. 1656-1658.

¹⁵ M. Cardillo et al., "Multiple Causes of High Extinction Risk in Large Mammal Species," *Science*, v. 309, no. 5738 (August 19, 2005): 1239-1241.

¹⁶ D. H. Reed et al., "Estimates of Minimum Viable Population Sizes for Vertebrates and Factors Influencing Those Estimates," *Biological Conservation*, v. 113, no. 1 (September 2003): 23-34. A *minimum viable population* is "the smallest-size interbreeding group of a particular species that can sustain itself over time; if the group becomes any smaller, it will fail to replace itself successfully and slowly die out." (*The Dictionary of Ecology and Environmental Science*, Henry Holt & Co., New York, 1993.) The measurement reflects especially a need for genetic diversity, and does not directly address major impacts of habitat loss, disease, etc.

¹⁷ For background on climate change generally, see CRS Report RL33849, *Climate Change: Science and Policy Implications*, by Jane A. Leggett.

¹⁸ C. D. Thomas et al., "Extinction Risk from Climate Change," *Nature*, v. 427, no. 6970 (January 8, 2004): 145-148; Arctic Climate Impact Assessment, *Impacts of a Warming Arctic: Arctic Climate Impact Assessment* (Cambridge University Press, 2005), 144 p.

¹⁹ USGS studies are available at <http://www.usgs.gov/newsroom/special/polar%5Fbears/>.

²⁰ 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>.

²¹ 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.

²² Intergovernmental Panel on Climate Change, *Climate Change 2007: The Physical Science Basis*, Summary for Policymakers (Geneva, Switzerland: February 2007), 21 pp. This estimate is considered optimistic by some scientists, who argue that the Arctic could be ice-free in late summer in as soon as 30 years. For example, see Stroeve, J., M. M. Holland, W. Meier, T. Scambos, and M. Serreze (2007), Arctic sea ice decline: Faster than forecast, *Geophys. Res. Lett.*, 34, L09501, doi:10.1029/2007GL029703. Available at <http://www.agu.org/journals/scripts/highlight.php?pid=2007GL029703&cls=edt>.

Walsh (1993), declines in Arctic sea ice, with the largest trends in September, have also been consistently reported in observations....²³

However, links between climate-model predictions and threats to polar bears are characterized as tenuous by many scientists, who point to the limitations of correlational studies and the hypothetical nature of model-based predictions of environmental conditions decades into the future.²⁴

Distribution patterns of some polar bear populations have changed in recent years. Greater numbers of bears are being found onshore near the Bering Sea,²⁵ and in some parts of Canada,²⁶ with Inuit hunters reporting more bears present on land during summer and fall.²⁷ There may be several reasons for the observed changes, including changes in sea ice; those who conduct population censuses of polar bears will need to be cautious in interpreting whether apparent population variations are indicative of changing habitat use (e.g., greater numbers of bears onshore) or actual changes in population abundance. Recent studies found that mid-latitude European populations of Arctic fox became extinct at the end of the Pleistocene and did not track the habitat when it shifted to the north, suggesting that some populations of Arctic species are unable to track decreases in habitat availability and may be vulnerable to increases in global temperatures.²⁸

A loss of sea ice could affect survival and reproduction of polar bears by:

- shortening the season during which ice is available to serve as a platform for hunting ringed seals;²⁹
- increasing the distance between the ice edge and land, thereby making it more difficult for nearshore female bears that prefer to den on land to reach preferred denning areas;
- reducing the availability of sea ice dens for gestating pelagic female bears;

²³ U.S. Department of the Interior, Geological Survey, "Uncertainty in Climate Model Projections of Arctic Sea Ice Decline: an Evaluation Relevant to Polar Bears," 2007, p. 21. Available at http://www.usgs.gov/newsroom/special/polar_bears/docs/USGS_PolarBear_DeWeaver_GCM-Uncertainty.pdf.

²⁴ D. Berteaux et al., "Constraints to Projecting the Effects of Climate Change on Mammals," *Climate Research*, v. 32 (October 2006): 151-158; D. B. Botkin et al., "Forecasting the Effects of Global Warming on Biodiversity," *Bioscience*, v. 57 (March 2007): 227-236; C. J. Krebs and D. Berteaux, "Problems and Pitfalls in Relating Climate Variability to Population Dynamics," *Climate Research*, v. 32 (October 2006): 143-149; and M. G. Dyck, et al., "Polar Bears of Western Hudson Bay and Climate Change: Are Warming Spring Air Temperatures the 'Ultimate' Survival Control Factor?" September 2007, *Ecological Complexity*, v. 4, No. 3, p. 73-84.

²⁵ 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*, V. M. Belkovich, ed. (St. Petersburg, Russia: 2006), p. 559.

²⁶ E. K. Parks et al., "Seasonal and Annual Movement Patterns of Polar Bears on the Sea Ice of Hudson Bay," *Canadian Journal of Zoology*, v. 84, no. 9 (September 2006): 1281-1294.

²⁷ Unpublished reports in 2005 by M. Dowsley and M. Taylor, as cited in the FWS polar bear status assessment report. The polar bear status assessment document is available at http://alaska.fws.gov/fisheries/mmm/polarbear/pdf/Polar_Bear_%20Status_Assessment.pdf.

²⁸ Love Dalen et al., "Ancient DNA Reveals Lack of Postglacial Habitat Tracking in the Arctic Fox," *Proceedings of the National Academy of Sciences of the United States of America*, v. 104, no. 16 (April 17, 2007): 6726-6729.

²⁹ For every week earlier the sea ice breaks up, bears come ashore 10 kilograms lighter in weight, on average. See Ian Stirling and A. E. Derocher, "Possible Impacts of Climatic Warming on Polar Bears," *Arctic*, v. 46 (1993): 240-245.

- requiring nearshore bears to travel through fragmented sea ice and open water, which uses more energy than walking across stable ice formations;³⁰
- reducing the availability and accessibility of ice-dependent prey, such as ringed seals, to nearshore populations;³¹ and
- requiring nearshore bears to spend more time on land, thereby increasing the potential for adverse human-polar bear interactions.³²

In addition to changing sea ice conditions, others have expressed concern that climate change could affect the integrity of polar bear den sites, as rain can destroy ice dens, exposing young polar bears to the elements prematurely.³³

Although some scientists predict the extinction of polar bears under potential climate change scenarios, not all sea-ice changes would harm polar bears. For example, reduced sea ice thickness and coverage in far northern regions could improve polar bear habitat, by increasing the availability and accessibility of ice-dependent prey, such as ringed seals.³⁴ Others remind biologists that climate-related changes to a species' distribution may not necessarily lead to changes in abundance.³⁵

Contaminants

Three main groups of contaminants are implicated as potentially threatening polar bears—petroleum hydrocarbons, persistent organic pollutants, and heavy metals. Moreover, climate change may alter contaminant pathways through increased precipitation, increasing the potential threat to polar bears.³⁶ Polar bears are particularly vulnerable to oil spills, because oil damages polar bear fur (decreasing the bears' ability to thermoregulate) and because of oil ingestion (poisoning) via grooming and/or eating contaminated prey.³⁷ 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; weakened immune

³⁰ Loss of sea ice forces polar bears to cross large expanses of water and increases risk of drowning. In 2004, scientists documented polar bears swimming as far as 60 miles offshore and observed 4 drowned bears. See C. Monnett and J. S. Gleason, "Observation of Mortality Associated with Extended Open-Water Swimming by Polar Bears in the Alaskan Beaufort Sea," *Polar Biology*, v. 29, no. 8 (July 2006): 681-687.

³¹ I. Stirling and C. L. Parkinson, "Possible Effects of Climate Warming on Selected Populations of Polar Bears (*Ursus maritimus*) in the Canadian Arctic," *Arctic*, v. 59, no. 3 (September 2006): 261-275; S. H. Ferguson, I. Stirling, and P. McLoughlin, "Climate Change and Ringed Seal (*Phoca hispida*) Recruitment in Western Hudson Bay," *Marine Mammal Science*, v. 21, no. 1 (January 2005): 121-135.

³² Marine Mammal Commission. *Annual Report to Congress, 2005* (Bethesda, MD: July 15, 2006), p. 52.

³³ Stefan Norris, Lynn Rosentrater, and Pal Martin Eid, *Polar Bears at Risk* (World Wildlife Fund, May 2002).

³⁴ A. E. Derocher, N. J. Lunn, and I. Stirling, "Polar Bears in a Warming Climate," *Integrative and Comparative Biology*, v. 44, no. 2 (April 2004): 163-176.

³⁵ C. J. Krebs and D. Berteaux, "Problems and Pitfalls in Relating Climate Variability to Population Dynamics," *Climate Research*, v. 32 (2006): 143-149.

³⁶ R. W. Macdonald, T. Harner, and J. Fyfe, "Recent Climate Change in the Arctic and Its Impact on Contaminant Pathways and Interpretation of Temporal Trend Data: Review Article," *Science of The Total Environment*, v. 342, no. 1-3 (April 1, 2005): 5-86.

³⁷ 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; N. A. Oritsland, et al., *Effect of Crude Oil on Polar Bears*, Environmental Studies No. 24, Northern Affairs Program, Northern Environmental Protection Branch, Indian and Northern Affairs, Canada (1981), 268 pp.

systems and reduced reproductive success are among the concerns.³⁸ Some persistent organic pollutants are endocrine disruptors and are thought to cause pseudo-hermaphroditism and aberrant genital morphology in polar bears.³⁹ Mercury is a particular concern because of its toxicity at low concentration, and its magnification and accumulation through the food web. However, polar bears appear able to demethylate (i.e., alter the chemical form and biological reactivity of) mercury and accumulate somewhat elevated levels of mercury without harm.⁴⁰

Subsistence and Sport Harvest

The United States allows limited subsistence harvest of polar bears by Alaska Natives. According to FWS:

The harvest levels in the Southern Beaufort Sea are managed at sustainable harvest levels under the Native to Native agreement between the Inupiat (Alaska) and Inuvialuit (Canada) Agreement. The harvest levels in the Chukchi/Bering seas for the past 10-15 years (150-200 bears/year), which include the legal harvest in Alaska and an illegal harvest in Chukotka, Russia, are probably unsustainable. This harvest level is close to or greater than the harvest levels during the sport hunting era prior to 1972 (approximately 178 bears/year).⁴¹

There is particular concern for the Chukchi/Bering Seas population due to anecdotal evidence that unregulated harvest by Russian Natives on the Chukotka Peninsula may be reaching unsustainable levels.⁴²

Some have suggested that habitat alteration from climate change may interact with subsistence and sport harvest to increase polar bear mortality. For example, they believe that large adult male bears, more likely to be targeted by hunters, could also be more at risk from the effect of climate change on prey availability since larger bears require greater amounts of food. Others counter that habitat conditions and prey availability for polar bears could improve as climate warms as a result of increased marine productivity in regions currently dominated by multi-year ice.⁴³ Also, male bears represent a threat to cubs and juvenile bears.⁴⁴ Consequently, any factor—such as sport and subsistence hunting (which often target adult males)—that reduces the population of adult males, may increase cub and juvenile survivorship and therefore may exert a positive influence should bears become nutritionally challenged in the future.

³⁸ J. U. Skarre et al., “Ecological Risk Assessment of Persistent Organic Pollutants in the Arctic,” *Toxicology*, v. 181-182 (2002): 193-197.

³⁹ C. M. Fossi and L. Marsili, “Effects of Endocrine Disruptors in Aquatic Mammals,” *Pure and Applied Chemistry*, v. 75, nos. 11-12 (November-December 2003): 2235-2247.

⁴⁰ Arctic Monitoring and Assessment Programme, *AMAP Assessment 2002: Persistent Organic Pollutants in the Arctic* (Oslo, Norway: 2005), p. 123.

⁴¹ Fish and Wildlife Service, Alaska Region. Available at <http://alaska.fws.gov/fisheries/mmm/polarbear/issues.htm>.

⁴² Marine Mammal Commission, *Annual Report to Congress, 2005* (Bethesda, MD: July 15, 2006), pp. 50-51.

⁴³ A. E. Derocher, N. J. Lunn, and I. Stirling, “Polar Bears in a Warming Climate,” *Integrative and Comparative Biology*, v. 44 (June 2004): 163-176; I. Stirling and C. Parkinson, “Possible Effects of Climate Warming on Selected Populations of Polar Bears (*Ursus maritimus*) in the Canadian Arctic,” *Arctic*, v. 59 (September 2006): 261-275.

⁴⁴ A. E. Derocher and O. Wiig, “Infanticide and Cannibalism of Juvenile Polar Bears (*Ursus maritimus*) in Svalbard,” *Arctic*, v. 52 (September 1999): 302-310.

Canadian Non-Resident Sport Harvest⁴⁵

Some argue that a well-regulated sport harvest, managed for conservation of the population, can provide strong incentives to conserve a species, and cite waterfowl conservation as an example of the beneficial effects of sport hunting. In the case of polar bears, big game hunters argue that the considerable money spent by hunters in northern Canada gives local people strong incentives to maintain healthy polar bear populations. In Canada, Native Inuit hunters are permitted to allocate a limited portion of the subsistence harvest to sport hunters.⁴⁶ Under 1994 amendments to the MMPA,⁴⁷ U.S. citizens may obtain permits to import sport-harvested polar bear trophies from Canada, if taken under quotas scientifically designed to ensure the maintenance of the affected population at a sustainable level. The U.S. permit issuance fee for sport-hunted polar bear trophies is \$1,000.⁴⁸

Although each Canadian jurisdiction manages polar bears in its own territory, non-resident hunts (i.e., sport hunts) only occur in Nunavut and the Northwest Territories (NWT). Some of the regional polar bear populations in Nunavut and NWT are shared with other jurisdictions; harvest sharing is undertaken through inter-jurisdictional meetings and awareness of neighbors' hunting needs. The overall harvest quota for each jurisdiction is based on recommendations made by two federal-provincial-territorial polar bear committees (the Polar Bear Technical Committee and the Polar Bear Administrative Committee) made up of appropriate representatives of the relevant Canadian jurisdictions.

Under ESA, the Secretary is required to take into account foreign polar bear conservation programs, including hunting programs involving non-local (including U.S.) hunters. These programs, through carefully controlled sport hunting, can play a role in providing incentives to conserve a species, as well as funding conservation programs for the hunted species and its habitat. Before polar bears were listed under ESA, a provision of the MMPA allowed the importation of sport trophy polar bear artifacts and skins from regulated hunts in Canada. However, an ESA listing as "threatened" triggers an automatic designation as a "depleted" species under the MMPA, and therefore prevents U.S. citizens from importing polar bear products into the United States, due to a violation of the MMPA. Such an import ban, effectively stopping U.S. participation in the Canadian conservation-based hunting programs, would, according to some observers, end the financial assistance derived from the sport hunt, possibly reduce community support for a sustainable harvest, and perhaps compromise successful community-based conservation programs.⁴⁹

⁴⁵ Much of the material in this section was provided by Milton M. R. Freeman, Canadian Circumpolar Institute, University of Alberta, Edmonton.

⁴⁶ M. M. R. Freeman and G. W. Wenzel, "The Nature and Significance of Polar Bear Conservation Hunting in the Canadian Arctic," *Arctic*, v. 59, no. 1 (2006): 21-30.

⁴⁷ P.L. 103-238, §§4, 5; 16 U.S.C. § 1371(a)(1); 16 U.S.C. § 1374(c)(5).

⁴⁸ MMPA, §104(c)(5)(B).

⁴⁹ M. M. R. Freeman and G. W. Wenzel, "The Nature and Significance of Polar Bear Conservation Hunting in the Canadian Arctic," *Arctic*, v. 59, no. 1 (2006): 21-30.

Economic Impacts

The NWT and Nunavut governments charge non-resident hunters (i.e., U.S. or other non-Canadian resident) a Can\$750 trophy fee plus a Can\$50 tag fee.⁵⁰ In addition, the local outfitter charges for his/her services and, as part of that service, hires guides and assistants, provides transportation (dogs and skidoos), food, and camping gear, and may provide locally made caribou/wolf skin clothing (or this can be custom-made and purchased) and accommodations in the community if bad weather prevents leaving on the hunt. In addition, government license fees benefit communities indirectly by supporting polar bear research and monitoring. For example, Nunavut spends about Can\$1 million annually on polar bear research and monitoring.

The federal government collects a 6% goods and services tax (GST) on all goods and services (except food and certain other exempt items) purchased in Canada. These monies go to the federal government. Almost all the rest of the money that enters the local community circulates in the community—even the purchase of supplies from the local cooperative store results in a dividend paid to co-op members (i.e., virtually all community households). The disbursement of cash varies from community to community, but in each case, more than 90% is disbursed and circulates locally. In 2001, the 74 outfitted hunts in Nunavut were reported to have generated Can\$1.221 million, a figure significantly higher than that derived annually from all other tourist/private visitor activities.⁵¹

Other U.S. Laws, Agreements, and Treaties

Besides ESA, polar bears are protected and managed under other domestic laws and several international agreements. Because the primary habitat of the polar bear is sea ice and this species is evolutionarily adapted to life at sea, it is managed as a marine mammal. In the United States, polar bears are protected under the MMPA, with the Fish and Wildlife Service (FWS) in the Department of the Interior as the federal management agency. Marginal benefits are also provided by the Outer Continental Shelf Lands Act (43 U.S.C. §§ 1331-1356) and the Coastal Zone Management Act (16 U.S.C. §§ 1451-1464). The Alaska Nanuuq Commission, a Native organization representing villages in northern and northwestern Alaska, has a co-management agreement with the FWS to provide input on matters related to the conservation and sustainable use of polar bears.⁵²

Internationally, the multilateral 1973 Agreement on the Conservation of Polar Bears⁵³ 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 Population⁵⁴ provide a basis for cooperation on polar bear management, though over-harvest on the Russian side is thought to have reduced this population. Alaska and Canada exercise joint cross-border management through the Inuvialuit-Inupiat Polar Bear

⁵⁰ In June 2008, Can\$1.00 was equal to US\$1.0021.

⁵¹ This Can\$1.2 million is a minimal figure, as the Wenzel and Bourgouin study focused exclusively on the polar bear hunt; some hunters also hunt for a muskox, caribou, wolf, or grizzly bear, incurring additional costs when extending the stay in the community for these additional hunts.

⁵² See <http://www.nanuuq.info/index.html>.

⁵³ Parties to this agreement are Canada, Denmark, Norway, the Russian Federation, and the United States. See <http://sedac.ciesin.org/entri/texts/polar.bears.1973.html>.

⁵⁴ See <http://alaska.fws.gov/media/pbsigning/agreement.html>.

Management Agreement for the Southern Beaufort Sea.⁵⁵ The International Union for the Conservation of Nature (IUCN) classifies the polar bear as *vulnerable* on the IUCN Red List of Threatened Species. The IUCN classification of *vulnerable* represents a judgment that the species is facing a high risk of extinction in the wild.⁵⁶

In addition, polar bears are listed on Appendix II of the Convention on International Trade in Endangered Species of Fauna and Flora (CITES). Appendix II lists species not necessarily threatened with extinction but requiring controlled trade to prevent population declines, as well as other species whose body parts are difficult to distinguish by visual inspection (the so-called “look-alike” problem, in this case in controlling trade in bear gall bladders).⁵⁷ ESA implements CITES provisions domestically. As such, ESA affords protection to endangered species and wildlife of global concern. To complement CITES, ESA specifically prohibits interstate and foreign commerce in ESA-listed species. FWS agents and inspectors work to control any illegal trade and international movement of ESA-listed species, since some species found in other countries may be brought into the United States by activities that could threaten their long-term survival. International provisions of ESA are applicable to activities within U.S. jurisdiction, as well as activities by U.S. citizens anywhere, including the high seas.

The Listing Decision: Continuing Controversy

On May 14, 2008, in response to a court-ordered deadline, Interior Secretary Kempthorne announced a decision to list polar bears as threatened under the ESA.⁵⁸ The listing decision itself was supported by environmental groups and various scientific societies; others, including the state of Alaska, opposed it, arguing that the science supporting listing was weak. (See discussion below.) In addition, the Secretary announced interim final special rules under Section 4(d) of ESA to address how the agency will handle the consultation that federal agencies must carry out for actions which “may affect” listed species and how the prohibitions on takings under ESA’s Section 9 may be limited.⁵⁹ Here, the situation was reversed: environmental groups decried the rules, saying that they violated the ESA, and did not sufficiently address recovery of the species; opponents of listing felt that the special rules would lessen the economic impact of listing, would help prevent the ESA being used as a lever to force action on global climate change, and might allow northern economic development greater freedom. (See discussion below.) Legal challenges both to the listing and to the special rules were announced shortly after the announcement of the decision.⁶⁰ The actions leading to the listing are described below, followed by an analysis of

⁵⁵ See <http://pubs.aina.ucalgary.ca/arctic/Arctic55-4-362.pdf>.

⁵⁶ This assessment is based on a suspected population decline of more than 30% within three generations (45 years) due to decline in area of occupancy, extent of occurrence, and habitat quality.

⁵⁷ 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.

⁵⁸ 73 *Fed. Reg.* 28211-28303, May 15, 2008; 50 *C.F.R.* § 17.11(h).

⁵⁹ 73 *Fed. Reg.* 28305-28318, May 15, 2008; 50 *C.F.R.* § 17.40(q). Subsequently, a final special rule was published at 73 *Fed. Reg.* 76249-76269, December 16, 2008; 50 *C.F.R.* § 17.40(q).

⁶⁰ See “Alaska will try to block polar bear listing,” available at <http://www.eenews.net/Greenwire/2008/05/22/3>; “Polar Bear Listing Opens Door to New Lawsuits,” available at <http://www.sciencemag.org>; and “Groups take polar bear listing back to court,” available at <http://www.eenews.net/Greenwire/2008/05/20/1/>.

litigation concerning polar bears, and of controversies concerning the listing itself and the special rule.

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 under ESA throughout its range and that it designate critical habitat for this species.⁶¹ The Natural Resources Defense Council and Greenpeace, Inc., joined as petitioners on July 5, 2005. On December 15, 2005, the petitioners filed a complaint in federal court, challenging FWS's failure to issue a 90-day finding on the petition. 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.⁶² Under ESA, the Secretary of the Interior decides whether to list polar bears based solely on the best available scientific and commercial (i.e., trade) information,⁶³ after an extensive series of procedural steps to ensure public participation and the collection of relevant information.

As in other listing decisions, the polar bear decision was to consider information relating to five factors: habitat destruction, overutilization, disease or predation, inadequacy of other regulatory mechanisms, and other natural or manmade factors.⁶⁴ At this point in the ESA process, the Secretary *may not* consider the economic effects that listing may have. The listing determination is the only place in ESA where economic considerations are expressly forbidden; such considerations may enter in other stages, including critical habitat designation.

Economic factors cannot be taken into account at this stage because Congress directed that ESA listing be fundamentally a scientific question: is the continued existence of the species threatened or endangered? With the listing of a species under ESA, federal agencies are required to ensure that anything the federal government authorizes, funds, or carries out that is likely to affect the species or its habitat will not jeopardize the survival of the species or destroy or adversely modify its designated critical habitat.

In a settlement agreement to the 2005 lawsuit by environmental groups, FWS agreed to submit a 12-month finding on the petition by December 27, 2006. On January 9, 2007, FWS announced its 12-month finding on the petition—concluding that, after a review of scientific and commercial information, listing the polar bear as a threatened species under ESA was warranted—and formally proposed such listing.⁶⁵ This proposed rule did not designate critical habitat for the polar

⁶¹ A species may be designated as either endangered or threatened, depending on the severity of its decline and threats to its continued survival. The prohibitions and penalties of ESA apply to those species listed as endangered. FWS extends the same prohibitions to threatened species as well unless, under § 4(d) of ESA, the Secretary promulgates special regulations to address the plight of species listed as threatened. Protections and recovery measures for a particular threatened species can be tailored to particular situations. 50 *C.F.R.* § 17.31 also affords threatened species for which a special rule has not been promulgated the same protections as endangered species. For additional background on ESA 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 Kristina Alexander.

⁶² 71 *Fed. Reg.* 6745 (February 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).

⁶³ 16 U.S.C. § 1533(b)(1)(A).

⁶⁴ 16 U.S.C. § 1533(a)(1).

⁶⁵ 72 *Fed. Reg.* 1064-1099 (January 9, 2007). The polar bear status assessment document is available at (continued...)

bear. A decision on whether to list polar bears was due from FWS in early January 2008. However, FWS announced on January 7, 2008, that this decision was delayed and would be finalized “within the next month.”⁶⁶ Some suggested that the delay in listing the polar bear allowed the Mineral Management Service’s Chukchi Sea Planning Area Oil & Gas Lease Sale 193 to proceed unimpeded on February 6, 2008.⁶⁷ The Administration said that an ESA listing would have no effect on the lease sale, since polar bears were already considered in the lease sale, due to their protected status under the MMPA.⁶⁸

After additional delays in announcing a listing decision, on March 10, 2008, the Natural Resources Defense Council, Greenpeace, and the Center for Biological Diversity filed a lawsuit in U.S. District Court in San Francisco, seeking to compel FWS to issue a final decision immediately on whether to list polar bears as a threatened species. On April 28, 2008, the court ruled that the final decision on listing must be published in the *Federal Register* no later than May 15, 2008. Secretary Kempthorne issued the decision to list the species on May 14.⁶⁹ Provisions of the decision are discussed below.

Internationally, in late April 2008, the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) announced a status assessment of the polar bear in Canada as a species of “special concern,” with a more detailed official report scheduled for release in August 2008. After the August COSEWIC report is received, Canada’s Environment Minister, John Baird, will issue a statement outlining how the Government of Canada will proceed toward a decision on polar bear listing under Canada’s Species at Risk Act.⁷⁰ In addition, the multilateral 1973 Agreement on the Conservation of Polar Bears, signed by the United States and the other four circumpolar nations, offered some protection from over-harvest, although the Polar Bear Status assessment noted that over-harvest continues in some areas, and the agreement lacks provisions for the protection of habitats critical to the species.⁷¹

On May 8, 2008, Secretary Kempthorne signed a Memorandum of Understanding (MOU) with Canadian Environment Minister John Baird on the conservation of polar bears. Canada is thought to host about two-thirds of the world population of polar bears. The MOU, which is not binding, reflects the two countries’ agreement on management of the populations whose ranges cross the boundaries of the two countries.

(...continued)

http://alaska.fws.gov/fisheries/mmm/polarbear/pdf/Polar_Bear_%20Status_Assessment.pdf.

⁶⁶ News release at <http://www.fws.gov/news/NewsReleases/showNews.cfm?newsId=54D2A6BD-E928-94E6-6BA905F3F540B8F7>.

⁶⁷ “Bush Administration Set to Offer Chukchi Sea to Oil Industry,” *AlaskaWild Update*, no. 272 (January 10, 2008) at <http://www.alaskawild.org/alaskawild-update-272-january-10-2008/#more-472>.

⁶⁸ “Bush admin seeks 10 more weeks for polar bear decision,” by Allison Winter. *Greenwire*, April 14, 2008. Available at <http://www.eenews.net/Greenwire/print/2008/04/18/4>.

⁶⁹ *Center for Biological Diversity v. Kempthorne*, No. C-08-1339, 2008 Westlaw 1902703 (N.D. Cal. April 28, 2008).

⁷⁰ See <http://www.ec.gc.ca/default.asp?lang=En&n=714D9AAE-1&news=A4C9B4A9-BB66-423E-94A7-CDC313368213>.

⁷¹ FWS polar bear status assessment report, pp. 131-132. The polar bear status assessment document is available at http://alaska.fws.gov/fisheries/mmm/polarbear/pdf/Polar_Bear_%20Status_Assessment.pdf.

Special Rules for a Threatened Species

Under the ESA, an endangered species is entitled to a well-defined set of protections spelled out in Section 4 and Section 9 of the act. For threatened species, such as the polar bear, Section 4(d) allows FWS to write special rules tailored very specifically to a species; these rules are generally less restrictive than those applying to endangered species. The polar bear is the 64th threatened species with such rules.⁷²

For polar bears, many fear—or hope—that a threatened status will enhance efforts to address global climate change, or to restrict oil and gas development in the Arctic, since the effects of climate change or energy development could be argued to affect this species. Before the listing, some groups voiced their intention to file lawsuits to effect limits on greenhouse gases (GHGs) or Arctic energy development.⁷³ The groups supporting such suits argued that a cited purpose of the ESA was to “provide a means whereby the ecosystems on which endangered species and threatened species depend may be conserved” (16 U.S.C. § 1531(b)) and therefore such an effort was an appropriate means of conserving this species—as well as others that may be listed in the future due to climate change. Opponents of listing, or at least of using polar bear protection as a means of addressing the larger questions of climate change and Arctic energy development, held that the ESA constitutes essentially a blunt and unwieldy instrument for policies best set through existing or new legislation.⁷⁴

A focus on protecting polar bears from the effects of global climate change in some of the lawsuits already announced is ESA’s requirement under Section 7 that federal agencies, carrying out actions which “may affect” a listed species, must consult with FWS on the actions.⁷⁵ FWS then issues a *biological opinion* (BiOp) that analyzes the action, and assesses whether it might jeopardize the species or adversely modify designated critical habitat. If jeopardy or adverse modification would occur, FWS offers reasonable and prudent alternatives within the authority of the action agency, that would permit the action to go forward without jeopardy or adverse modification.⁷⁶ Key questions in the FWS consultation process are the severity of the effects of the proposed action, and the number of polar bears that would be affected. These requirements are in the statute, and adoption of a special rule under Section 4(d) cannot modify them. Critics of the special rule argue that polar bear conservation cannot be addressed without addressing climate change, since loss of Arctic sea ice is acknowledged as one of the chief threats to the species. Opponents of addressing climate change in efforts to recover the polar bear hold that the ESA was not intended to serve as a lever for addressing climate change, and that in any case, FWS is not equipped to handle the myriad consultations that would result. As noted above, the Omnibus

⁷² Listing: 73 *Fed. Reg.* 28211-28303, May 15, 2008; 50 *C.F.R.* § 17.11(h). Interim final special rule: 73 *Fed. Reg.* 28305-28318, May 15, 2008; 50 *C.F.R.* § 17.40(q). Final special rule: 73 *Fed. Reg.* 76249-76269, December 16, 2008; 50 *C.F.R.* § 17.40(q).

⁷³ For example, see Katie Howell, “Enviro groups seek to further climate, oil and gas agendas with polar bear listing,” *Energy and Environment Daily*, May 15, 2008. Available at <http://www.eenews.net/EEDaily/print/2008/05/15/1>.

⁷⁴ “The Threatened Polar Bear,” editorial, *Washington Post*, May 15, 2008, p. A14. Available at <http://www.washingtonpost.com/wp-dyn/content/article/2008/05/14/AR2008051403241.html>.

⁷⁵ “Polar Bear Listing Opens Door to New Lawsuits,” available at <http://www.sciencemag.org>; and “Groups take polar bear listing back to court,” available at <http://www.eenews.net/Greenwire/2008/05/20/1/>.

⁷⁶ In the very rare case that no reasonable and prudent alternative within the authority of the action agency can be found, the action agency has three options: to abandon the action, to seek a formal exemption under Section 7 of the ESA, or to proceed and risk a citizen suit under the broad provisions of Section 11(g).

Appropriations Act of 2009 (H.R. 1105) contains a provision that would allow a withdrawal of this rule by the Secretary. Alternative special rules might be promulgated later.

The discussion of the special rule for polar bears addresses a variety of other issues, as well as consultation under Section 7 and takings under Section 9.⁷⁷ These issues include subsistence handicrafts, international imports and exports, imports of sport-hunted trophies, takes in self-defense, incidental takes during fishing and other legitimate activities, and interaction with military activities. The discussion below focuses on takings and consultation, which have received the widest attention since issuance of the special rule.

What Is a Take?

The term “take” under the ESA means “to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct.”⁷⁸ (Harassment and harm are further defined by regulation at 50 C.F.R. § 17.3.) Taking is prohibited under 16 U.S.C. § 1538. There has been controversy over the extent to which the prohibition on taking may include habitat modification. A 1995 Supreme Court decision⁷⁹ held that the inclusion of significant habitat modification was a reasonable interpretation of the term “harm” in the law.

Under the final special rule (50 C.F.R. § 17.40(q)(2)) issued by Secretary Kempthorne on December 10, the take prohibitions that would normally apply to a threatened species do not

... apply to any activity that is authorized or exempted under the Marine Mammal Protection Act (MMPA), 16 U.S.C. 1361 et seq., the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), or both, provided that the person carrying out the activity has complied with all terms and conditions that apply to that activity under the provisions of the MMPA and CITES and their implementing regulations.

The Secretary stated at the press conference announcing the decision that “polar bears are already protected under the Marine Mammal Protection Act, which has more stringent protections for polar bears than the Endangered Species Act does.... If an activity is permissible under the stricter standards imposed by the [MMPA], it is also permissible under the [ESA] with respect to the polar bear.”⁸⁰

Under Section 9(a)(1)(G) of ESA, takings of threatened species which “violate any regulation pertaining to ... any threatened species” are illegal. Some environmental groups filed notice of an intent to sue, claiming that limiting ESA’s protections against takings to no more than those available under the MMPA was illegal and that “take” under ESA offers more habitat protection than MMPA.⁸¹

⁷⁷ 73 *Fed. Reg.* 76249-76269, December 16, 2008..

⁷⁸ 16 U.S.C. § 1532.

⁷⁹ *Babbitt v. Sweet Home Chapter of Communities for a Great Oregon*, 515 U.S. 687 (1995) (“Sweet Home”). See CRS Report 95-778, *Habitat Modification and the Endangered Species Act: The Sweet Home Decision*, by Pamela Baldwin.

⁸⁰ Secretary Kempthorne’s remarks at press conference of May 14, 2008. Available at <http://www.fws.gov/home/feature/2008/polarbear012308/pdf/press-conference-remarks.pdf>.

⁸¹ See “Environmental Groups Seek Full Protection for Polar Bear,” available at http://www.biologicaldiversity.org/news/press_releases/2008/polar-bear-05-20-2008.html.

Consultation Under Section 7

In a consultation, FWS must determine whether the agency's actions would jeopardize the continued existence of the species, or adversely modify habitat that has been designated as critical. An agency *action* is defined in 50 *C.F.R.* § 402.02 as "all activities and programs of any kind authorized, funded, or carried out, in whole or in part, by Federal agencies in the United States or upon the high seas." The same provision includes, as examples of such actions, "the promulgation of regulations," the "granting of leases, easements, and rights-of-way," and "actions directly or indirectly causing modifications to the land, water, or air." Under Section 7, as the final special rule notes,

... the determination of whether consultation is triggered is based on the discrete effect of the proposed agency action.... [The] Federal agency evaluates whether consultation is necessary by analyzing what will happen to listed species 'with and without' the proposed action.

For some actions (e.g., plants that would be inundated in a new reservoir, or nests that would be removed in a timber sale), the affected area is obvious. In other cases, including effects on a species or its habitat some distance away, FWS must consider the effects caused by the action under consultation that are "reasonably certain to occur" (50 *C.F.R.* § 402.02).

Some argue that all power plant emissions should be considered when dealing with the impacts of climate change on polar ice. In discussing the breadth of the consultation requirement vis-a-vis emission of GHGs, the final special rule states that the need for a causal connection between the federal action and an effect on polar bears "narrows section 7 consultation requirements to listed species in the 'action area' rather than to all listed species." This interpretation, according to the special rule, avoids the possibility that every agency action that would produce greenhouse gases would result in consultation.

While this provision in the final special rule could limit the number of consultations regarding polar bears, it is less clear that it would limit their breadth. For example, if an agency were issuing permits relating to emissions of GHG at a specific site, the rule's discussion states

There is currently no way to determine how the emissions from a specific action both influence climate change and then subsequently affect specific listed species, including polar bears. As we now understand them, the best scientific data currently available do not draw a causal connection between GHG emissions resulting from a specific Federal action and effects on listed species or critical habitat by climate change.

The rule suggests that the action agency need not consult on the permit on the grounds that the causal link between the agency's action and an effect on polar bears is too weak. However, if the agency were developing regulations that applied to emissions for *all* such sites or emitters, one might argue that implementation of the regulations "may affect" polar bears and their habitat. Consultation would appear to be necessary in that case, since the causal link between regulations for all of the permitted GHG emissions and effects on polar bears might be stronger.

In addition, while the causal connection between emissions of a single GHG source and polar bear habitat loss is currently tenuous or *de minimis*, according to "the best scientific data currently available," what might happen if scientific analysis and improved data were to make that causal chain stronger? If that link were forged in the future, then consultation might be needed, even if the special rule is unchanged.

Litigation and the Polar Bear

The lawsuit by the Center for Biological Diversity (CBD) that forced the listing of the polar bear under the ESA was neither the first nor the last lawsuit pertaining to the bear. This section discusses different legal actions brought under several different laws that affect the polar bear: ESA, MMPA, the National Environmental Policy Act (NEPA; 42 U.S.C. § 4321 et seq.), and the Administrative Procedure Act (5 U.S.C. § 551 et seq.).

The polar bear was listed under the ESA as a result of a petition filed by the Center for Biological Diversity (CBD). The petition was filed in February 2005, and when the 90-day finding deadline came and went without response by FWS, CBD filed suit to force compliance with the statute.⁸² The 90-day finding was published February 9, 2006, and pursuant to an agreement reached by CBD and FWS, the 12-month finding was published January 9, 2007. Another lawsuit was filed in January 2008 when the one-year deadline for a final listing determination passed. The District Court for the Northern District of California directed FWS to issue a final listing determination on or before May 15, 2008, and to make that determination effective immediately, instead of allowing 30 days for the decision to become effective.⁸³ On May 15, 2008, the polar bear listing was published.

The ESA allows “any person” to bring suit against the United States, with some restrictions.⁸⁴ One restriction is that potential plaintiffs must file a notice with the offending agency 60 days before filing suit. The 60-day notice requirement is to allow the agency to correct any omission prior to going to court or to show that it is already diligently prosecuting the violation. The citizen suit provision allows any person to seek an injunction against a person or the United States to stop a violation of the act, and allows suits against FWS or NMFS specifically for those actions that are non-discretionary, such as missed deadlines.⁸⁵ Suits based on the ESA but not falling into those categories are not subject to citizen suit under this provision, but might be raised under the Administrative Procedure Act (APA).⁸⁶

However, ESA is not the only law on which lawsuits regarding the polar bear are based. Challenges have also been made under the MMPA and NEPA, using the APA as a vehicle to gain access to the courts, as neither of those laws permits citizen suits. Suits filed under these statutes do not need 60 days’ notice.

Many lawsuits were filed, the details of which are described below. One suit was brought in the District Court for the Northern District of California. The remaining lawsuits were filed in the District Court for the District of Columbia. Dozens of parties moved to intervene as either plaintiff or defendant in these lawsuits. Intervenors in each district moved to consolidate the litigation. The special tribunal known as the Judicial Panel of Multidistrict Litigation ruled that the actions should be consolidated before one D.C. judge.⁸⁷

⁸² *Center for Biological Diversity v. Kempthorne*, No. 05-5191 JSW (N.D. Cal. filed December 15, 2005).

⁸³ *Center for Biological Diversity v. Kempthorne*, No. C 08-1339 CW (N.D. Cal. April 28, 2008).

⁸⁴ 16 U.S.C. § 1540(g).

⁸⁵ 16 U.S.C. § 1540(g)(1)(A)-(C).

⁸⁶ *Bennett v. Spear*, 520 U.S. 154 (1997).

⁸⁷ *In re Polar Bear Endangered Species Act Listing and § 4(d) Rule Litigation*, 588 F. Supp. 2d 1376 (J.P.M.L. Dec. 3, 2008).

Center for Biological Diversity

CBD has amended its existing suit regarding listing the polar bear to introduce claims that FWS violated NEPA and the APA. CBD's argument is that the polar bear special rules were issued pursuant to a rulemaking and should have been issued with a notice and comment period under the APA. Also, CBD claims that, as a major federal action, the special rules should have undergone a NEPA review. There is little case law on this issue. The CBD lost an argument for a NEPA review of Section 4(d) rules in the same district court for a different animal in 2005.⁸⁸ Also worth noting, however, is that the National Marine Fisheries Service (NMFS) generally prepares NEPA reviews for its Section 4(d) rules, even though FWS does not.

CBD amend the suit, arguing that the polar bear should have been listed as endangered, rather than threatened, and claiming that critical habitat should have been designated. FWS had indicated in its 90-day finding that any critical habitat determination would be made in a rule subsequent to the listing determination.⁸⁹ The issue of critical habitat was resolved by settlement, when FWS agreed to designate critical habitat by June 30, 2010.⁹⁰

On June 9, 2008, CBD filed a separate 60-day notice of suit with FWS and the Minerals Management Service (MMS) arguing that the oil and gas industry activities in the Beaufort and Chukchi Seas violated the ESA. CBD argued that ESA required MMS to consult with FWS prior to taking certain actions regarding oil and gas leases in the areas. CBD also argued that FWS should be required to consult under the ESA before issuing incidental take regulations under the MMPA.

The CBD lost a different lawsuit against FWS for issuing incidental take regulations for marine mammals under the MMPA in the Beaufort Sea.⁹¹ CBD had argued that the oil and gas industry actions would have more than the negligible impact allowed by the MMPA on Beaufort Sea polar bears. CBD also argued that the incidental take regulations were intended to allow only "specified activities," not all activities of the oil industry—exploration, development, and production—as had been approved by FWS. The court found for defendants.

CBD had filed another suit under the MMPA against FWS claiming the agency did not conduct required stock assessments under the act.⁹² The parties reached a settlement in May 2008, wherein FWS agreed to prepare draft stock assessment reports for the Bering/Chukchi Sea stock of the polar bear, the Beaufort Sea stock of the polar bear, and the Pacific walrus stock by January 2009.⁹³

Other Suits Filed Based on Listing

Other plaintiffs have sued FWS based on the polar bear listing. Safari Club International brought suit based on the § 4(d) rules that accompanied the listing. Its suit was filed under the MMPA and

⁸⁸ *Center for Biological Diversity v. Kempthorne*, No. C04-04324 WHA, 2005 WL 2000928 (N.D. Cal. 2005).

⁸⁹ 71 *Fed. Reg.* 6745, 6746 (January 9, 2006).

⁹⁰ *Center for Biological Diversity v. Kempthorne*, No. C 08-1339 CW (N.D. Cal. filed Oct. 6, 2008).

⁹¹ *Center for Biological Diversity v. Kempthorne*, No. 3:07-cv-0141-RRB (D. Alaska).

⁹² MMPA § 117, 16 U.S.C. § 1386.

⁹³ *Center for Biological Diversity v. Kempthorne*, C 07-5109 PJH (N.D. Cal. May 19, 2008).

the APA. Safari Club objected to the decision that said permits to import sport-hunted polar bear trophies from Canada were nullified by the listing. The plaintiff claimed that the specific language in the MMPA allowing the import permits superseded the more general language that declared imports were prohibited if a species became listed as threatened or endangered. Also, Safari Club argued that at least 11 of its members had permits in the approval process for bears killed in early 2008 that would no longer be allowed for import.⁹⁴

Safari Club International also sued FWS under ESA, arguing that listing the polar bear as a threatened species was erroneous. The suit disputes that 45 years is the correct amount of time for the “foreseeable future,” and argues that FWS should have established distinct population segments (DPS) and made separate listing decisions for each DPS. Safari Club is also filing an amicus brief in the CBD suit.⁹⁵

The State of Alaska filed suit under the ESA, claiming that the best science available was not used because the number of polar bears has been increasing; therefore the population could not be threatened.⁹⁶ Alaska also argued that existing protections for the bear were enough, which is one of the five factors FWS was required to consider when listing a species.⁹⁷ FWS discussed this issue in the listing notice. After stating that loss of habitat was the reason for listing the species, FWS discussed the existing regulatory mechanisms: “While we note that efforts are being made to address climate change, we are unaware of any programs currently being shown to effectively reduce loss of polar bear ice habitat at a local, regional, or Arctic-wide scale.”⁹⁸

On October 2, 2008, the Pacific Legal Foundation filed a lawsuit disputing the science behind the listing decision, with the California Cattlemen’s Association as the lead plaintiff.⁹⁹

Other Suits Filed Based on Oil and Gas Activities’ Impact on Polar Bears and Other Marine Mammals

Other lawsuits addressed polar bear protection by challenging the oil and gas permits in the polar bear’s U.S. habitat: the Chukchi and Beaufort Seas. One of the earliest suits seeking judicial relief was that brought by subsistence hunters against MMS for issuing oil and gas leases in the Beaufort Sea that the plaintiffs claimed would harm whales and polar bears. Their suit was brought under NEPA, arguing that MMS should have prepared a supplemental environmental impact statement for the 2007 leases. Instead, MMS prepared an environmental assessment. The court found in favor of MMS.¹⁰⁰

Two lawsuits were filed in 2008 against the Department of the Interior with the Native Village of Point Hope as the named plaintiff. The first was filed in January 2008.¹⁰¹ In addition to the named

⁹⁴ *Safari Club International v. Kempthorne*, No. 1:08-cv-00881-EGS (D.D.C. filed May 23, 2008).

⁹⁵ *Center for Biological Diversity v. Kempthorne*, No. 4:08-cv-01339-CW (N.D. Cal. May 13, 2008) (order allowing Safari Club International to file an amicus brief).

⁹⁶ *State of Alaska v. Kempthorne*, No. 1:08-cv-01352-EGS (D.D.C. August 4, 2008).

⁹⁷ ESA § 4(a)(1), 16 U.S.C. § 1533(a)(1).

⁹⁸ 73 *Fed. Reg.* 28247 (May 15, 2008).

⁹⁹ *California Cattlemen’s Ass’n v. Kempthorne*, No. 1:08-cv-01689 (D.D.C. filed Oct. 2, 2008).

¹⁰⁰ *North Slope Borough v. MMS*, No. 3:07-cv-0045-RRB, 2008 WL 110889 (D. Alaska January 8, 2008).

¹⁰¹ *Native Village of Point Hope v. Kempthorne*, case number unknown (D. Alaska filed January 31, 2008).

plaintiff, 11 other parties, mostly environmental groups, are plaintiffs.¹⁰² The suit challenges the MMS decision to offer 29.4 million acres of outer continental shelf public land in the Chukchi Sea for oil and gas leasing. It alleges NEPA, APA, and ESA violations pertaining to the polar bear, and to endangered bowhead, humpback, fin, and right whales, and threatened Steller's and spectacled eiders.

The second lawsuit headed by the Native Village of Point Hope seeks to enjoin the MMS decision to issue permits for seismic surveys in Chukchi and Beaufort Seas.¹⁰³ Five other plaintiffs joined to claim these permits violate NEPA, MMPA, and the APA.¹⁰⁴ MMS is preparing a programmatic EIS to determine effects of low-frequency, high-intensity noise from seismic testing on the environment. The draft was issued in 2007, but the final statement is not completed.¹⁰⁵ In the meantime, MMS will continue to issue permits based on EAs. The EA for the Beaufort Sea included all activities associated with oil and gas operations over the entire Beaufort Sea and lands within 25 miles of the coast (excepting the Arctic National Wildlife Refuge). In the same suit, the plaintiffs named NMFS as defendant for issuing incidental harassment authorization for taking seals and whales. The applicant for the authorization had estimated that the seismic surveys would take by harassment 1,460 beluga whales, 2,167 bowhead whales, and 34,832 ringed seals, the primary food source of polar bears.

Controversies

Supporters of increased protection for polar bears argue that polar bears are the most iconic Arctic species, representing the Arctic as lions represent Africa. They further assert that it would be irresponsible to let the polar bear become extinct as a result of human action, and would be a terrible blow to the psyche of humankind. However, some critics suggest that listing polar bears as threatened is premature, with this species being used as a "poster child" for the evils of climate change by the popular press in recognition of polar bears' charismatic appeal. Some believe that other species, such as the less-glamorous walrus, could be facing similar or greater immediate risk.¹⁰⁶

Some scientists also point out that, since polar bears have survived at least two major warming periods over the last 10,000 years, including the intense warming event that ended the Last Glacial Maximum about 8,000 to 9,000 years ago (when temperatures were believed to have been much warmer than now), polar bears and other Arctic mammals could be capable of adjusting, adapting, and coping with the current climatic change. At the end of the last Ice Age, the Northern Hemisphere entered an extended period of rapid warming, with temperatures in Arctic regions eventually reaching levels several degrees warmer than today. At that time, the sea ice above

¹⁰² City of Point Hope, Inupiat Community of the Arctic Slope, Alaska Wilderness League, CBD, NRDC, National Audubon Society, Northern Alaska Environmental Center, Oceana, Pacific Environment, Resisting Environmental Destruction on Indigenous Lands (REDOIL), Sierra Club, and the Wilderness Society.

¹⁰³ *Native Village of Point Hope v. MMS*, case number unknown (D. Alaska filed May 5, 2008).

¹⁰⁴ Resisting Environmental Destruction on Indigenous Lands (REDOIL), Pacific Environment, NRDC, CBD, and Alaska Wilderness League.

¹⁰⁵ See 72 *Fed. Reg.* 17117 (April 8, 2007), announcing draft programmatic EIS for seismic surveys in the Beaufort and Chukchi Seas.

¹⁰⁶ Natalie Angier, "Ice Dwellers Are Finding Less Ice to Dwell On," *New York Times*, May 20, 2008, available at http://www.nytimes.com/2008/05/20/science/20count.html?_r=1&ref=science&oref=slogin.

North America is known to have retreated substantially, allowing Arctic species such as bowhead whales and walrus to move northward into areas of the Canadian Arctic that they cannot reach today. The Mid-Holocene Warm Period peaked about 11,000-9,000 years ago near Alaska and about 8,000-5,000 years ago near Greenland and Northern Europe. In both areas, temperatures rose rapidly 10°-15° Celsius (18°-27°F) to a point significantly warmer than present (about 2.5° Celsius warmer (4.5°F); but less than the temperatures projected by the Intergovernmental Panel on Climate Change for 2100), and about 5°-10° Celsius (9°-18°F) of that warming took place within 30 years or less.¹⁰⁷

Another significant but shorter warm period occurred about 1,000 years ago, when Arctic temperatures were slightly warmer than today. This warming also triggered sea ice reductions in Arctic regions and was accompanied by significant reductions in Greenland glaciers, creating so much arable land that Viking settlers established farms on the west coast of Greenland that were occupied for about 400 years.¹⁰⁸

There is no evidence to suggest that ice in the Arctic Basin disappeared entirely during either of these warm periods, which were of equal or greater warming than predicted by the Intergovernmental Panel on Climate Change's climate-warming models, nor did any ice-dependent species become extinct.¹⁰⁹ Polar bears and their primary prey existed before the last Ice Age, and significant populations of them remain today. The tight association of polar bears and their prey species with moving sea ice may give them a flexibility that land-based carnivores do not have.

Critics, however, counter that polar bears today are not coping with changing climate alone, but also face a host of other human-induced factors—including shipping, oil and gas exploration, contaminants, and reduced prey populations—that compound the threat to their continued existence.¹¹⁰

¹⁰⁷ D. S. Kaufman et al., "Holocene Thermal Maximum in the Western Arctic (0-180 Degrees W)," *Quaternary Science Reviews*, v. 23, nos. 18-19 (October 2004): 2059-2060; Arthur S. Dyke, et al., "The Late Wisconsinan and Holocene Record of Walrus (*Odobenus rosmarus*) from North America: A Review with New Data from Arctic and Atlantic Canada," *Arctic*, v. 52, no. 2 (June 1999): 160-181; Arthur S. Dyke and James M. Savelle, "Holocene History of the Bering Sea Bowhead Whale (*Balaena mysticetus*) in its Beaufort Sea Summer Grounds off Southwestern Victoria Island, Western Canadian Arctic," *Quaternary Research*, v. 55 (2001): 371-379.

¹⁰⁸ Willie Soon and Sallie Baliunas, "Proxy Climatic and Environmental Changes of the Past 1000 Years," *Climate Research*, v. 23 (January 31, 2003): 89-110.

¹⁰⁹ D. B. Botkin et al., "Forecasting the Effects of Global Warming on Biodiversity," *Bioscience*, v. 57 (March 2007): 227-236.

¹¹⁰ A. Shi, A. M. Bell, and J. L. Kerby, "Two Stressors are Far Deadlier Than One," *Trends in Ecology and Evolution*, v. 19 (2004): 274-276.

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