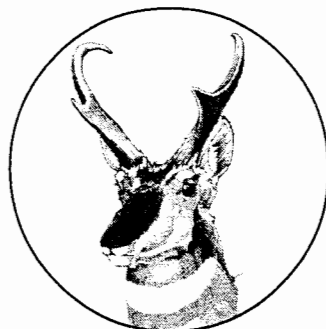


# American Society of Mammalogists

ROBERT M. TIMM, President  
Department of Ecology & Evolutionary Biology  
University of Kansas Natural History Museum  
Dyche Hall, 1345 Jayhawk Blvd  
Lawrence, KS 66045-7561  
(785) 864-4180 FAX: 864-5335  
Email: rtimm@ku.edu

SUZANNE B. McLAREN, President-Elect  
O'Neil Research Center, Carnegie MNH  
5800 Baum Blvd  
Pittsburgh, PA 15206-3706  
(412) 665-2615 FAX: 665-2751  
Email: mclarens@CarnegieMNH.org

MEREDITH J. HAMILTON, Vice-President  
Department of Zoology  
430 Life Sciences West  
Oklahoma State University  
Stillwater, OK 74078  
(405) 744-5555 FAX: 744-7824  
Email: meredith.hamilton@okstate.edu



DEEANN M. REEDER, Recording Secretary  
Department of Biology  
Bucknell University  
Lewisburg, PA 17837  
(570) 577-1208 FAX: 577-3537  
Email: dreeder@bucknell.edu

RONALD A. VAN DEN BUSSCHE, Secretary-Treasurer  
Department of Zoology  
430 Life Sciences West  
Oklahoma State University  
Stillwater, OK 74078  
(405) 744-5555 FAX: 744-7824  
Email: ron.van\_den\_bussche@okstate.edu

EDWARD J. HESKE, Journal Editor  
Illinois Natural History Survey  
1816 South Oak Street  
Champaign, IL 61820  
(217) 244-2713 FAX: 333-4949  
Email: eheske@uiuc.edu

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Supervisor  
U.S. Fish and Wildlife Service  
Marine Mammals Management Office  
1011 East Tudor Road  
Anchorage, Alaska 99503

RE: 12-Month Petition Finding and Proposed Rule To List the Polar Bear  
(*Ursus maritimus*) as Threatened Throughout Its Range 50 CFR Part 17;  
RIN 1018-AV19; Fed Reg 72(5):1064-1099

The American Society of Mammalogists (ASM) is a nonprofit professional scientific and educational society consisting of more than 3,000 members from the United States, including members from Alaska, and 60 other countries worldwide, including all Arctic countries. The American Society of Mammalogists was founded in 1919 and is the world's oldest and largest organization devoted to the study of mammals. We strongly support the conservation and responsible use of wild mammals based on current, sound, and accurate scientific knowledge. The ASM is particularly concerned with the future of mammals worldwide in increasingly threatened habitats.

The American Society of Mammalogists fully supports the proposal by the US Fish and Wildlife Service (USFWS) to list the Polar Bear (*Ursus maritimus*) as Threatened throughout its range and commends the USFWS for proposing this action at this critical time. The USFWS has conducted a thorough review of the biology of and threats to the world's Polar Bears in their 12-month petition finding and proposed rule, and therefore we will only highlight a few key points in this letter. We further encourage USFWS to designate and take steps to protect critical habitat throughout the range of the Polar Bear in the jurisdiction of the United States to ensure that listing the species as Threatened will be effective in halting its rapid decline.

*Ursus maritimus* is listed as threatened/vulnerable by IUCN (Schliebe et al. 2006) due to a suspected population reduction of more than 30% over 45 years resulting from declines in area of occupancy, extent of occurrence, and habitat quality.

There currently are 19 documented populations of *Ursus maritimus* in five Arctic countries (USA, Canada, Russia, Denmark/Greenland, and Norway). Two of these populations inhabit the US, namely the Southern Beaufort Sea (SBS) and Chukchi Sea (CS) populations, which are shared with Canada and Russia, respectively. Just as the US has led the world in endangered species legislation and conservation, we hope that the action of USFWS listing the Polar Bear under the US Endangered Species

Act and taking the requisite positive steps to halt its decline will serve as an impetus to other nations to take similar steps and to increase their ongoing collaborations with us in addressing the problems of this keystone species of the high Arctic.

Polar Bears rely on sea ice for most of their foraging and seasonal long-distance movements. Extent and thickness of Arctic sea ice have shown a significant decline over the past 30 years (Lindsay and Zhang 2005), and spring breakup has occurred earlier over time. Sea ice is predicted to decline by 10–50% by 2100, and summer sea ice is predicted to decrease by 50–100% over that time (Hassol 2004). Of the many direct and indirect (ecosystem-mediated) effects this change likely will have on Polar Bears, chief among them are loss of foraging habitat and reduced access to their seal prey. Food shortages are expected to cause deteriorating body composition and declining reproductive success in female Polar Bears (Atkinson and Ramsay 1995). Further, increased mortality from increased energy expenditure and drowning resulting from longer swims has been documented (Monn and Gleason 2006).

In one of the best-studied populations of the species, the western Hudson Bay population, decreasing extent of sea ice and earlier ice break-up are correlated to shifts in seal distribution and abundance and to declines in Polar Bear population density and physiologic condition (Parks et al. 2006). Particularly troubling are the steady declines in body mass of pregnant females and survival rates of cubs. Females weighing less than 190 kg in autumn have been found not to produce cubs the following spring in this population, and the trend of declining body mass in females suggests this threshold may be reached by the population average within as little as a decade (Stirling and Parkinson 2006).

If Polar Bears spend more time on land as a result of a longer ice-free season (which has recently been documented for the SBS population; Schiebe et al. 2006), they can be expected to encounter increasing conflict with humans, which is likely to increase mortality from problem-animal control measures (Stirling and Parkinson 2006). Also, Polar Bears foraging on land have been found to prefer whale carcasses at native harvest and stranding sites (Hansen 2005). Sled dogs in Greenland that had been fed blubber from Minke Whales inhabiting contaminated areas showed impairment of the nonspecific and specific cellular immune system caused by bioaccumulation of persistent organic compounds (POCs) and heavy metals (Sonne et al. 2006). Recent examination of Alaskan Polar Bears of the SBS population showed a relatively high prevalence of serum antibodies to four morbilliviral species, especially canine distemper (CDV), which is of probable terrestrial origin (Kirk et al. 2005).

In addition to the likely continuing decline of Arctic sea ice and its many negative effects on Polar Bear survival and reproduction, climate change may also affect denning habitat if snowfall patterns change or if spring rains increase (Stirling and Derocher 1993). Additionally, some SBS bears den in the pack ice itself (Amstrup and Gardner 1994); thus, they are reliant on a rapidly diminishing resource. Ongoing development in denning habitat, particularly the anticipated oil and gas development in Arctic Alaska, also may be expected to have increasingly deleterious effects on reproduction due to disturbance of denning females (Durner et al. 2006).

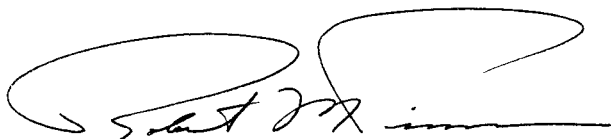
Since 1972, the US Marine Mammal Protection Act (MMPA) has prohibited hunting except by Alaska Native subsistence hunters; however, there were no quotas placed on the subsistence harvest, and currently the only safeguards against overharvest are voluntary agreements between native and local governments of the countries involved (including United States–Canada, with regard to the SBS population; Brower et al. 2002). A Threatened designation under the ESA, and the accompanying designation of depleted under the MMPA, would focus increased federal attention and resources for studying the question of sustainable harvest levels and place enforcement under a firmer legal mandate. It would also send an important message to the federal government and provincial governments of Canada (a country that hosts 60% of the world's Polar Bears), which still allow non-native harvest, as encouragement to re-examine harvest quotas and overall management plans, and perhaps to consider, with increased urgency, the listing of *Ursus maritimus* as a Species of Special Concern under Canadian national legislation (Accord for the Protection of Species at Risk, 1998; Bourdages and Labelle 2002). Recently, some harvest quotas in Canada were increased after anecdotal

observation of increased foraging by bears near human settlements was mistaken for evidence of an increasing population, whereas these were fasting bears wandering on land in search of food, from a population that is likely declining (Stirling and Parkinson 2006).

Finally, we have much concern regarding the inadequate protection being afforded Polar Bears and other marine mammals by the USFWS during the permitting process for oil and gas development activities. Specifically, the USFWS does not consider the cumulative impacts of global climate change together with the direct impacts that oil and gas development may be having on Polar Bears and other marine mammals. The USFWS has itself identified global climate change as the principal threat to Polar Bear survival; thus, we call on the USFWS to take this clearly documented threat into full account during any and all decision-making regarding the issuance of permits for oil and gas development activities occurring in Polar Bear and other marine mammal habitat. Toward this end, we believe there is a real urgency for USFWS to work closely with National Marine Fisheries Service, US Geological Survey, and Minerals Management Service in developing regulations and conservation plans as mandated by the Endangered Species Act

In summary there is emerging scientific consensus that the Arctic environment is undergoing substantial deleterious effects of anthropogenic climate change, particularly in the amount, duration, and quality of sea ice. There is already evidence of significant negative trends in important demographic, reproductive, and physiologic indicators within the better-studied populations of Polar Bears that correlate with the decline in sea ice. That, plus the numerous cascading effects of climate change, marine pollution, Arctic development, and human harvest on the already globally declining Polar Bear population, makes it imperative, in our opinion, that *Ursus maritimus* be given immediate strong legal protection and enhanced management and scientific scrutiny that ESA listing can provide. We would be happy to provide additional information if that would prove useful.

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'Robert M. Timm', with a large, stylized flourish at the end.

Robert M. Timm, Ph.D., President,  
American Society of Mammalogists

Encl.

Literature Cited

- Amstrup, S.C., and C. Gardner. 1994. Polar bear maternity denning in the Beaufort Sea. *Journal of Wildlife Management* 58:1-10.
- Atkinson, S.N., and M.A. Ramsay. 1995. The effects of prolonged fasting on the body composition and reproductive success of female polar bears (*Ursus maritimus*). *Functional Ecology* 9:559-567.
- Bourdages, J., and C. Labelle. 2000. Protecting wild species at risk in Canada. PRB 00-19, Parliamentary Research Branch, Library of Parliament, Ottawa.
- Brower, C.D., et al. 2002. The polar bear management agreement for the Southern Beaufort Sea: An evaluation of the first ten years of a unique conservation agreement. *Arctic* 55:362-372.
- Durner, G.M., S.C. Amstrup, and K.J. Ambrosius. 2006. Polar bear maternal den habitat in the Arctic National Wildlife Refuge, Alaska. *Arctic* 59:31-36.
- Hansen, D.J. 2005. Observations of habitat use by polar bears, *Ursus maritimus*, in the Alaskan Beaufort, Chukchi, and Northern Bering Seas. *Canadian Field-Naturalist* 118:395-399.
- Hassol, S.J., 2004. Impacts of a warming arctic: Arctic climate impact assessment. Cambridge University Press, Cambridge, United Kingdom.
- Lindsay, R.W., and J. Zhang. 2005. The thinning of the Arctic sea ice, 1988-2003: have we passed a tipping point? *Journal of Climate* 18:4879-4894.
- Kirk, C., et al. 2005. Recent efforts to assess Beaufort Sea polar bear (*Ursus maritimus*) health: Focus on morbillivirus exposure status. In: *Is the North that Different? Consequences of Arctic and Sub-Arctic Environmental Variation*. Conference Program. [np].
- Monn, C., and J.S. Gleason. 2006. Observations of mortality associated with extended open-water swimming by polar bears in the Alaskan Beaufort Sea. *Polar Biology* 29:681-687.
- Parks, E.K., A.E. Derocher, and N.J. Lunn. 2006. Seasonal and annual movement patterns of polar bears on the sea ice of Hudson Bay. *Canadian Journal of Zoology* 84:1281-1294.
- Schliebe, S., Ø. Wiig, A.E. Derocher, and N.J. Lunn. 2006. *Ursus maritimus*. In: IUCN 2006. *2006 IUCN Red List of Threatened Species*.
- Sonne, C., et al. 2006. Impairment of cellular immunity in West Greenland sledge dogs (*Canis familiaris*) dietary exposed to polluted minke whale (*Balaenoptera acutorostrata*) blubber. *Environmental Science and Technology* 40:2056-2062.
- Stirling, I., and A.E. Derocher. 1993. Possible impacts of climatic warming on polar bears. *Arctic* 46:240-245.
- Stirling I., and C.L. Parkinson. 2006. Possible effects of climate warming on selected populations of polar bears (*Ursus maritimus*) in the Canadian Arctic. *Arctic* 59:261-275.