

Guest editorial—the ballyhoo over polar bears

doi:10.1111/j.1751-8369.2009.00137.x

Critics have said that there's little or no justification for the focus that polar bears (*Ursus maritimus*) have received as a threatened species. Recent studies project dramatic reductions in polar bear numbers in just a few decades, in concert with the equally dramatic reduction in critical sea-ice habitat, yet there are undoubtedly ecologically more "important" species in tropical and temperate latitudes that are facing equal or more urgent problems at present.

However, there is hardly any other species that has the potential to capture people's attention more effectively than the "king of the Arctic". This is a large part of the picture when trying to get a grip on the ruckus that has been going on in some Arctic countries after the turn of the millennium, and especially since 2005. Here, I draw upon insights gained in my capacity as senior adviser to the Norwegian Ministry of the Environment in Arctic matters, and as a member of the Polar Bear Specialist Group (PBSG), to reflect on recent important events in the international conservation of polar bears.

Polar bears, as reviewed by the International Union for Conservation of Nature (IUCN) Species Survival Commission (SSC) PBSG, are divided into 19 populations inhabiting various parts of the circumpolar Arctic (Aars et al. 2006; see also PBSG 2009). Although there are huge knowledge gaps, especially in Russia, eastern Greenland and in the Arctic Basin, the world population of polar bears is estimated to be about 20 000–25 000.

Polar bear populations in this context are not really true populations in the strict biological sense. Polar bears seem to be genetically similar around the Arctic, which means that the animals are mating across the boundaries of the so-called populations at a rate high enough to prevent genetic distinctions from arising between populations. However, decades of data on movement and migration patterns—thanks in very large part to satellite telemetry technology—have given some support to the current delineation of populations, and as these units have been helpful as management units, the population delineations have been kept. Except in Norway and in Russia, where they are totally protected, polar bears are harvested throughout the species' range. The establish-

ment of management units, or "populations", has proven to be helpful when developing and implementing management regimes.

Although there are polar bears in the Arctic Basin, the basin is not regarded as a separate management unit or population. The densities of polar bears there are expected to be low, and as jurisdictional and cost issues are problematic, there is, and will be, little or no knowledge collected about bears in this part of the species' range.

One of the really troublesome facts that causes a lot of bad publicity for polar bear scientists and management authorities around the Arctic is that the bear's status as a threatened species doesn't jibe with the fact that most polar bear populations have appeared to be in good shape for a while. And the problems that have been observed in some populations have essentially been caused by over-harvesting, not climate change, although it's the latter that has been putting polar bears on the front pages of newspapers and magazines lately.

Over-harvesting has been the obvious culprit for almost a century (see "From the institute's Photo Library", at the end of this issue). Concern about harvest levels led to initial talks between the Arctic nations in 1965, which culminated in the signing of the *Agreement on the conservation of polar bears* in 1973. The signatories were Canada, Denmark, Norway, Russia and the USA. All five polar bear nations were on board.

The climate threat that is now making headlines isn't really like any other threat we have dealt with (although polar bears may have experienced marked climate change many thousands of years ago; see Ingólfsson & Wiig 2009 [this issue]). In the past, relatively high thresholds for agreeing on and implementing management actions to mitigate the impacts of threat factors have always allowed the effects of threats to manifest in the populations in question before management has acted upon it. However, the projected scale and speed of climate warming, and the incredibly dramatic consequences that are predicted, force us to act largely before we have seen clear and undisputable effects of climate change manifest in most populations.

Global awareness about climate change exploded at the turn of the new century, based on a long-term scientific modelling and documentation effort, as presented in the third assessment report of the Intergovernmental Panel on Climate Change (Houghton et al. 2001). As the impact global warming would have on the frozen expanses of the North, and consequently on polar bear habitat, began to

Correspondence

Dag Vongraven, Norwegian Polar Institute, Polar Environmental Centre, NO-9296 Tromsø, Norway. E-mail: vongraven@npolar.no



be understood, the fate of polar bears was suddenly brought front and centre.

This rapidly emerging awareness prompted the IUCN to commission an assessment of the projected status of polar bears from their dedicated specialist group, the PBSG. This assessment, first presented at the 14th meeting of the PBSG in Seattle in 2005 (Aars et al. 2006; see also IUCN 2009), concluded that there was a real risk that the world's populations of polar bears could be reduced by 30% or more within three polar bear generations, i.e., within 45 years. It was therefore suggested to "upgrade" *U. maritimus* from the IUCN's Red List of Threatened Species category of Least Concern (LC), which in practice means no additional conservation actions are necessary, to Vulnerable (more precisely, VU A3c), where the need for actions starts to kick in.

All the polar bear countries are members of the IUCN, and thus they are obliged to "support and facilitate the objectives, activities and governance of the IUCN" (IUCN 2008). Russia has its own Red List classification, unchanged for many years, but polar bears have been protected in Russian territories since 1956. Norway acknowledged the polar bear's new IUCN Red List status in its updated national Red List published in 2006; in 2007, so did Denmark/Greenland. That left only the USA and Canada.

In the USA, a petition to list the polar bear as a threatened species under the Endangered Species Act (ESA) was submitted in February 2005, giving the management authorities—the US Department of the Interior and its environmental directorate, the US Fish and Wildlife Service (FWS)—a period of up to two years to finally decide whether polar bears should be listed. After being sued for slow progress in December 2005, the FWS stated that protection of polar bears "may be warranted", and a full status review was initiated. The FWS proposed listing the species as threatened in January 2007, leaving them until January 2008 to make a final decision. As part of this full status review, a set of reports was commissioned from the US Geological Survey. One of the general conclusions of these reports was that "Projected changes in future sea ice conditions, if realized, will result in loss of approximately 2/3 of the world's current polar bear population by the mid 21st century" (USGS 2008: 2; see also Amstrup et al. 2007).

Still not meeting their deadline, which was January 2008, the US government was sued again, before a final decision was made on 15 May 2008 to classify the polar bear as a threatened species.

Canada has still not met its obligations as an IUCN member. The "Red List instrument" in Canada is the Committee on the Status of Endangered Wildlife in Canada (COSEWIC). Thirteen of the 19 globally recog-



Polar bear and seagull. (Photo by Morten Ekker.)



Polar bear tracks, Barents Sea. (Photo by Sebastian Gerland; courtesy of the Norwegian Polar Institute Photo Library.)

nized populations of polar bear are partly or fully under Canadian jurisdiction, and they comprise about two-thirds of the world's number of polar bears. All Canadian populations are harvested, and subsistence hunting in local Inuit communities is a strong incentive to maintaining the status quo. This may also have encouraged the Canadian government to give the most eager climate-sceptic among experienced polar bear scientists the task of assessing the status of polar bears for COSEWIC in 2008. Not surprisingly, the assessment concluded that the polar bear in Canada—all 13 populations were treated as one—was to be considered as a species of "Special Concern". This is the same status polar bears have had in Canada since 1991. In practice, it means that the species might become threatened in the future, but for now we can go on with business as usual. In Canada, species of special concern should be reassessed within 10 years, but 10 years is a long time, especially in a country where pressure from harvesting is quite high and out of control in some areas, as is the case with the populations shared

between Canada and Greenland. Has Canada replaced the USA as the “bad guy”?

The USA process was watched closely throughout the circumpolar Arctic. It was obvious that this was a big issue in the USA, with many real and perceived consequences. The FWS didn't find it easy either, and in spring 2007 the agency sent an e-mail to high-ranking environmental officials in the Norwegian government exploring the possibility of arranging a meeting in Shepherdstown, West Virginia, in June 2007. The FWS was in need of some help and advice from the other polar bear nations on what to do. The FWS was very careful to call it a meeting of the “polar bear range states” or a “technical meeting”, as opposed to a meeting of the parties of the 1973 agreement: the US agency had no interest in opening discussions on the whole range of issues covered by the agreement.

Two of the thorniest problems that the FWS grappled with were trophy hunting and recovery plans.

Trophy hunting: until 1994, the US Marine Mammal Protection Act prohibited Americans from importing polar bear trophies into the USA. However, in 1994, as a result of pressure from the hunting lobby, amendments to the law made it possible for Americans to pay for the right to hunt “quota bears” in “approved” Canadian polar bear populations, and to bring the hides back to the USA. Listing polar bears as a threatened species under the ESA would reverse this.

Recovery plans: the ESA requires that plans for the conservation and survival of threatened species are developed and implemented. In the polar bear case, such recovery plans would have to deal with a fast reduction of Arctic sea-ice cover, as a projected reduction in sea-ice habitat was the reason for the petition in the first place. Recovery plans involving sea ice would imply a substantial change in the level of acceptance of climate change by the Bush administration. In short, if the US government classified polar bears as threatened, it would be on the grounds of climate change projections, which the nation's leadership had been refusing.

The Shepherdstown meeting was a success, not least in convincing the other nations that the USA didn't have any hidden agenda. There were no written and signed statements from the meeting in which US authorities could find authoritative support for going on with “business as usual”, as was the fear of some of the attendees.

One of the outcomes of the Shepherdstown meeting was that Norway was asked to host a new meeting of the parties to the 1973 agreement. Representatives of the signatory nations met in Tromsø in March 2009. There was still some reluctance on the part of some delegations to call this a “meeting of the parties”—some kept referring to the meeting as a “range states meeting” or a “technical

meeting on polar bears”. This reluctance was rooted in the USA and Canadian administrations' fear of a full-scale and public discussion of the wide range of political issues relevant to polar bear conservation at the time. This and other controversies, such as the absolute refusal by Greenland and Canada to have an open meeting that would include the press and other media, surfaced the week before the meeting, almost derailing the entire event before it even took place. Norway's intense diplomatic efforts during the last week before the meeting got things back on track. As a compromise, Norway gave in to Greenland's and Canada's insistence on barring the media from parts of the meeting.

Contrary to many of the sceptics' predictions, the outcome of the meeting was perceived as being positive. In the final statement, climate change was stated as being the most important threat to polar bear conservation. The work carried out by the PBSG in taking care of the agreement during the years after 1981 was also formally recognized, and the PBSG was consequently asked to serve as a scientific adviser to future regular meetings of the parties. Specifically, the PBSG was asked to give input to a circumpolar action plan for the conservation of polar bears. Even the PBSG delegates themselves were content with the meeting outcome, surprised as they were.

When the PBSG met for its 15th meeting in Copenhagen a few months ago, in the summer of 2009, the backdrop was quite different than for most meetings since the beginning of the 1980s. For the first time since 1981 the parties to the 1973 agreement had met, revitalizing international cooperation on polar bear management. Although matters pertaining to the agreement have been diligently looked after by the PBSG in the meantime, most people involved believe it is a good thing that the parties become more engaged in polar bear conservation. This will probably introduce more politics into polar bear management, but it is hoped that, on balance, greater involvement by the polar bear nations will benefit polar bears.

Although media coverage about a supposed “banning” of a climate-sceptic and previous long-time member of the PBSG, now without affiliation to any jurisdiction, made some noise at the meeting, the meeting was productive in responding to the nations as an authoritative and scientifically independent group.

The new review of the 19 populations currently recognized shows that of the 12 populations on which there are sufficient data, one population is increasing, three are stable and eight are decreasing in size. The previous review, made in 2005, was that of these same 12 populations: two were increasing, five were stable and five were decreasing. There has been a change for the worse. Even though over-harvesting is still the main

culprit, there are more and more indications that climate warming is starting to have consequences for the condition and well-being of polar bears, and that climate change is the single greatest challenge to the species in the near future. Another notable threat, especially pronounced in some areas, is the effects of ecotoxins that are transported to the Arctic by air and sea currents, and that build up in the food chain, in which the polar bear is at the top (see, for example, Horton et al. 2009 [this issue]).

In spite of the steps forward taken this year, the future of polar bears is still looking grim. Even so, there is a sentiment among the majority of the members of the polar bear scientific community that however dark things might look there is still time to reverse the situation, or at least to ameliorate it. Mitigations to reduce emissions of greenhouse gases will still work to the benefit of polar bears. Scientific work being carried out now shows this beyond doubt.

References

Aars J., Lunn N.J. & Derocher A.E. (eds.) 2006. *Polar bears. Proceedings of the 14th Working Meeting of the IUCN/SSC Polar Bear Specialist Group, 20–24 June 2005, Seattle, Washington, USA. Occasional Paper of the IUCN Species Survival Commission 32*. Gland: International Union for Conservation of Nature and Natural Resources.

Amstrup S.C., Marcot B.G. & Douglas D.C. 2007. *Forecasting the range-wide status of polar bears at selected times in the 21st*

century. Administrative report. Reston, VA: US Department of the Interior and US Geological Survey.

Horton T.W., Blum J.D., Xie Z., Hren M. & Chamberlain C.P. 2009. Stable isotope food-web analysis and mercury biomagnification in polar bears (*Ursus maritimus*). *Polar Research* 28, 443–454.

Houghton J.T., Ding Y., Griggs D.J., Noguer M., van der Linden P.J., Dai X., Maskell K. & Johnson C.A. (eds.) 2001. *Climate change 2001: the scientific basis. Contribution of Working Group I to the third assessment report of the Intergovernmental Panel on Climate Change*. Cambridge: Cambridge University Press.

Ingólfsson Ó. & Wiig Ø. 2009. Late Pleistocene fossil find in Svalbard: the oldest remains of a polar bear (*Ursus maritimus* Phipps, 1744) ever discovered. *Polar Research* 28, 455–462.

IUCN (International Union for the Conservation of Nature) 2008. *Statutes, including rules of procedure of the World Conservation Congress, and regulations*. Gland: International Union for Conservation of Nature and Natural Resources.

IUCN (International Union for the Conservation of Nature) 2009. IUCN Red List of threatened species. Version 2009.1. Accessed on the internet at <http://www.iucnredlist.org> on 25 September 2009.

PBSG (Polar Bear Specialist Group) 2009. Population status reviews. Accessed on the internet at <http://pbsg.npolar.no> on 25 September 2009.

USGS (US Geological Survey) 2008. USGS science to inform US Fish and Wildlife Service decision making on polar bears. Executive summary. Accessed on the internet at http://www.usgs.gov/newsroom/special/polar_bears/ on 25 September 2009.