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Agenda Item 17.3.3

**RECOMMENDATION ON A FUTURE LISTING  
OF THE POLAR BEAR UNDER CMS**

*(Submitted by the Migratory Wildlife Network)*



# RECOMMENDING THE DEVELOPMENT OF POLAR BEAR CMS APPENDIX I AND APPENDIX II PROPOSALS FOR FORMAL REVIEW BY CMS SCC18

Submitted by the Migratory Wildlife Network

## PROPOSED CMS APPENDICES LISTING CONSIDERATION

It is proposed that polar bear, *Ursus maritimus*, be considered for listing on CMS Appendix II during CMS CoP11, in recognition that the range of threats they face requires conservation participation of Range States and Countries involved in activities impacting the high seas migratory range of the species. The conservation of remaining polar bear habitat and the removal of impediments to migration are urgent.

It is also proposed, that the polar bear, *Ursus maritimus*, populations of the divergent ice ecoregion of the Chukchi, Laptev, Kara and Barents Seas be considered for listing on CMS Appendix I during CMS CoP11, in recognition of their extreme vulnerability to habitat loss as a result of climate change.

## SUMMARY OF POLAR BEAR CONSERVATION STATUS

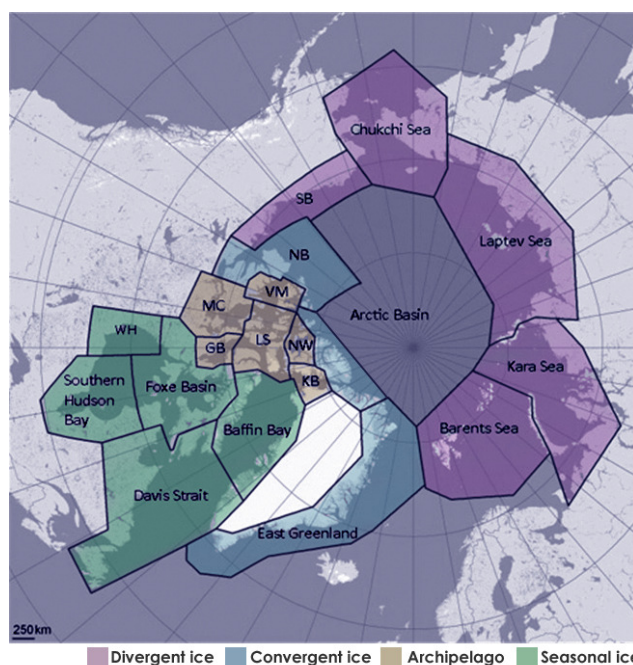
Polar bears, *Ursus maritimus*, are unevenly distributed throughout the ice-covered waters of the circumpolar Arctic in 19 subpopulations. There is an uncertainty about the discreteness of the less studied subpopulations, particularly in the Russian Arctic and neighboring areas due to limited research data. Considerable overlap between these populations occurs and genetic differences among them are small. The total number of polar bears worldwide is estimated by the IUCN SSC Polar Bear Specialist Group to be between 20,000 - 25,000 individuals (Schliebe et al, 2008; IUCN/SSC Polar Bear Specialist Group, 2010; Vongraven, 2010).

Polar bear range is limited by the southern extent of, as well as the total amount, composition, and type of, sea ice (or the lack thereof). Fragmentation and loss of sea ice habitat, as a consequence of climate change, is the single most critical conservation concern for polar bears today (Amstrup et al, 2007; Lunn et al, 2010; Molnár et al, 2011; Peacock et al, 2011), influencing both spatial and seasonal movement patterns.

Although some populations occur in the permanent multi-year pack ice of the central Arctic basin, polar bears are most common in the annual ice over the continental shelf and inter-island archipelagos that surround the polar basin (Stirling et al, 1993; Arthur et al, 1996; Ferguson et al, 1997; Ferguson et al, 2000; Mauritzen et al, 2001; Durner et al, 2006; Stirling et al, 2011). Polar bears show fidelity to geographic regions (Amstrup et al, 2000) and polar bear populations may be defined by the movements of individuals (Bethke et al, 1996; Taylor et al, 2001; Mauritzen et al, 2002; Amstrup et al, 2004).

Polar bear movement and distribution are determined by the way they use the sea ice habitat as a platform between feeding, mating, denning, and in some populations, summer retreat areas. They tend to move on drifting ice to remain in productive habitats (Durner et al, 2009), which often implies moving against the direction of drift of the sea ice to remain in the same general location. In the Barents Sea, it has been shown that polar bears continuously walked northwards nine months of the year, though they remained largely in the same area (Mauritzen et al, 2003b). Generally, polar bears inhabiting offshore drift ice have much larger home ranges than bears inhabiting consolidated ice (Born et al, 1997; Ferguson et al, 2001). Some bear populations are more closely associated with pack ice than others, with individuals spending the majority of the year on the ice and with only a small proportion of individuals spending any amount of time on land (Schliebe et al, 2006). In other populations, such as those in the seasonal ice habitats of the eastern Canadian Arctic, the vast majority of individuals in the population come to land for an extended period in the late summer and early fall (Vongraven & Peacock, 2011).

With their habitat literally melting away, the best scientific estimates show polar bear populations within the convergent and divergent ice ecoregions going extinct within 45 years and a greater than 40% probability of extinction in the archipelago within 100 years (Amstrup et al, 2007). Projected changes in polar bear habitat extent will likely be strongly seasonal, with dramatic losses in spring and summer and modest to negligible losses in winter. The last years have exhibited the lowest average sea ice extents in the summer month of September since



Adapted from IUCN/SSC Polar Bear Specialist Group and Amstrup et al, 2007

measurements began in 1979. The observed changes from 1985 through 1995 and 1996 through 2006 showed pronounced losses of polar bear habitat during the spring and summer in the Southern Beaufort, Chukchi, Barents, and East Greenland seas, and forward projections indicate pronounced losses in the nearshore regions of the Laptev and Kara seas as well. By the end of the 21st century the Canadian archipelago and Greenland may be the only remaining regions sustaining viable, albeit smaller, polar bear populations. As the impacts of climate change take hold, polar bears inhabiting the Chukchi, Laptev, Kara and Barents Seas will be forced to either migrate long distances to remain on the ice or spend summers stranded on land. Either scenario presents energetic challenges that could jeopardize these polar bear subpopulations (Durner et al, 2009). The tightly constrained diets of some individuals, particularly adult females and subadults, may make them especially sensitive to future climate change impacts (Thiemann et al, 2011).

Polar bear reproductive rates are among the lowest in all mammals. They typically have small litter sizes, long dependency periods, and high cub mortality. Recent research has demonstrated polar bears can exhibit a distinct kin structure during the mating season (Zeyl et al, 2009). Their low reproductive rates mean that population recovery rates are also slow (IUCN/SSC Polar Bear Specialist Group, 2010; Durner et al, 2011; Molnár et al, 2011).

In addition to the well documented impacts of legal and illegal hunting, trade and climate change, polar bears are also increasingly impacted by pollution including organochlorines, dieldrin, DDT, toxaphene, chlordanes, and more recently brominated flame retardants. Mineral and petroleum exploration and extraction in the Arctic poses a wide range of threats to polar bears, ranging from oil spills to noise disturbance and increasing traffic and human activity. Tourism activities have the potential to increase the risk of polar bear habituation and the severity of human-polar bear conflicts (Schliebe et al, 2008; IUCN/SSC Polar Bear Specialist Group, 2010; Dietz et al, 2011; Vongraven & Peacock, 2011).

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#### EXISTING INTERNATIONAL LEGAL CONTEXT

The circumpolar Agreement on the Conservation of Polar Bears (ACPB) was signed in 1973 between the Governments of Canada, Denmark, Norway, the Union of Soviet Socialist Republics and the United States of America, recognizing that the polar bear is a significant resource of the Arctic Region which requires additional protection. It prohibits the taking of polar bears except as provided in Article III which includes the exercise of traditional rights in accordance with the laws of each Signatory Government (ACPB, 1973).

In 2000, a bilateral Inuvialuit - Inupiat Polar Bear Management Agreement in the Southern Beaufort Sea was signed between the Inuvialuit of Canada and the Inupiat of the United States. A second bilateral Agreement between the Government of the United States of America and the Government of the Russian Federation on the conservation and management of the Alaska-Chukotka polar bear population was also signed in that same year (Inuvialuit - Inupiat Polar Bear Management Agreement, 2000; Agreement on the Conservation and Management of the Alaska-Chukotka Polar Bear Population, 2000). A third trilateral agreement for polar bear conservation and management was signed in 2009 between the Governments of Canada, Nunavut and Greenland (Memorandum of Understanding between the Government of Canada, Governments of Nunavut and Government of Greenland for the conservation and management of the polar bear populations, 2009).

Polar bears are also listed on Appendix II of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES).

The majority of policy and legislative effort to date has understandably focused on the regulation of harvest and trade and the development of conservation management plans. The ACPB restricts membership to the Arctic ring States. CITES appropriately addresses issues related to international trade.

There is need at the international level for focused attention on habitat protection and ensuring that polar bear seasonal migrations are as un-impeded as possible, including through the restriction of activities that may involve non-Arctic ring States such as petroleum exploration, petroleum extraction and shipping. It seems appropriate that CMS responds to that need.

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#### RANGE STATES

Canada (Manitoba, Newfoundland, Labrador, Nunavut, Northwest Territories, Quebec, Yukon Territory, Ontario), Greenland/Denmark, NORWAY (including Svalbard), Russian Federation (North European Russia, Siberia, Chukotka, Sakha (Yakutia), Krasnoyarsk), United States of America (Alaska). Vagrants occasionally reach Iceland.

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#### POLAR BEAR POPULATIONS ACROSS THE ARCTIC

As the Arctic climate continues to change, polar bear populations in a number of regions will decline and eventually go extinct. Management and conservation practices for polar bears in relation to both aboriginal harvesting and offshore industrial activity will need to adapt. Discussions to take place during CMS CoP10 on *Critical Sites and Ecological Networks for Migratory Species* and *Migratory Species Conservation in the Light of Climate Change* are particularly pertinent to this proposal (UNEP/CMS/Conf.10.40, UNEP/CMS/Res.10.19, UNEP/CMS/Conf.10.39, UNEP/CMS/Res.10.19, 2011)

The IUCN/SSC Polar Bear Specialist Group has published a summary of polar bear population status through 2010. While the IUCN Red List designates *Ursus maritimus* as 'vulnerable', the Red List also comments that the global population trend is declining (Schliebe et al, 2008). This information is combined with the ecoregion projections from Amstrup et al, 2007 in the table below.

**Table: Polar bear populations across the Arctic ecoregions**

					Table colour legend	
				Divergent ice	Seasonal ice	
				Convergent ice	Archipelago	
Population	Aerial survey / Mark-recapture analysis number (+ year of estimate)  [±2 SE or 95% CI]	Additional / Alt Analysis number (+ year of estimate)  [ ±2 SE or min-max range]	Potential maximum hunting related annual removals  [5 yr mean of annual removals]	Current status + Current trend: ● Stable ▼ Declining ▲ Increasing ■ Data deficient	Amstrup 2007 extinction projections	
Arctic basin	Unknown		0 [N/A]	Data deficient ■		
Chukchi Sea	Unknown		No quotas [37 + unknown but substantial in Russia 100-200]	Reduced ▼	<b>Extinct 80.33% 45 years</b>	
Laptev Sea	800-1200 (1993)		0 [N/A]	Data deficient ■		
Kara Sea	Unknown		0 [N/A]	Data deficient ■		
Barents Sea	2650 (2004) [1900-3600]		0 [1]	Data deficient ■		
East Greenland	Unknown		54 [58]	Data deficient ■	<b>Extinct 35.06% 45 years</b>	
Northern Beaufort Sea	1202 (2006) [686-1718]		65 [29]	Not reduced ●	<b>Extinct 77.30% 100 years</b>	
Gulf of Boothia	1592 (2000) [870-2314]		74 [60]	Not reduced ●	<b>Smaller population 10.56% 45 years</b>	
Kane Basin	164 (1998) [94-234]		15 [11]	Reduced ▼		
Lancaster Sound	2541 (1998) [1759-3323]		85 [83]	Data deficient ▼		
M'Clintock Channel	284 (2000) [166-402]		3 [2]	Reduced ▲		
Norwegian Bay	190 (1998) [102-278]		4 [4]	Data deficient ▼		
Southern Beaufort Sea	1526 (2006) [1210-1842]		80 [44]	Reduced ▼		
Viscount Melville Sound	161 (1992) [121-201]	215 (1996) [99-331]	7 [5]	Data deficient ■		
Baffin Bay	2074 (1997) [1544-2604]	1546 (2004) [690-2402]	176 [212]	Data deficient ▼	<b>Extinct 77.19% 45 years</b>	
Davis Strait	2142 (2007) [1811-2534]		66 [60]	Not reduced ▼		
Foxe Basin	2197 (1994) [1677-2717]	2300 (2004) [1780-2820]	108 [101]	Data deficient ■		
Southern Hudson Bay	900-1000 (2005) [396-950 (ON) 70- 100 (James Bay)]		61 [35]	Not reduced ●		
Western Hudson Bay	935 (2004) [791-1079]		16 [44]	Reduced ▼		<b>Extinct 88.15% 100 years</b>

(Adaptation from IUCN/SSC Polar Bear Specialist Group, 2010; Amstrup et al, 2007: p20 + Table 8)

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