

WORKSHOP REPORT  
CAFF Proceedings series report Nr 2.

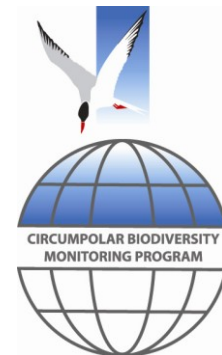
# THE DEVELOPMENT OF A PAN-ARCTIC MONITORING PLAN FOR POLAR BEARS

Matrix Hotel, Edmonton, Alberta, Canada  
19-21 February, 2011

*sponsored by*  
*U.S. Marine Mammal Commission*

*through*  
*CAFF Working Group of the Arctic Council,*  
*Circumpolar Biodiversity Monitoring Program*

*convened by*  
*Dag Vongraven, Norwegian Polar Institute*



Twenty-two scientists, managers and community experts from the five Arctic polar bear nations, met in Edmonton, Alberta, Canada, to help develop a pan-Arctic monitoring plan for polar bears as part of the Circumpolar Biodiversity Monitoring Program of the Conservation of Arctic Flora and Fauna (CAFF).

Invitations were extended to individuals who participated on the basis of their expertise on polar bears or their role in monitoring. The workshop was funded by the US Marine Mammal Commission.

### **Opening Business**

The workshop was called to order by Dag Vongraven, Convenor, at the Matrix Hotel, Edmonton. Dag Vongraven and Øystein Wiig were elected as Co-Chairs of the meeting. Nick Lunn and Lily Peacock accepted the role of workshop rapporteurs.

The participants agreed to Mike Gill and Dag Vongraven drafting a press release from the meeting and, following approval from the group, that it was appropriate for the press release to be handled through CAFF. The press release would address broad points discussed rather than specifics.

The Group agreed that it was not necessary for formal minutes to be recorded but that the output of the workshop would be a brief record of the discussion and decisions together with a draft monitoring plan.

Dag Vongraven and Lily Peacock were formally recognized for writing the background paper "Development of a pan-Arctic monitoring plan for polar bears. CAFF Monitoring Series Report No.1" that was published January 2011.

### **Background**

Since the 2009 Tromsø Meeting of the Parties to the 1973 Agreement on the Conservation of Polar Bears, both national and international action plans are being developed. In particular, the Range States are working towards the development of a circumpolar action plan for polar bears. This approach relied, in part, on input from the IUCN/SSC Polar Bear Specialist Group and is focussed first on the development of national action plans. Russia has completed its national plan whereas Canada, Greenland, Norway, and the United States are still working on theirs.

The CAFF pan-Arctic polar bear monitoring plan is independent of the Range States initiatives, although it will be made available to them. The CAFF initiative is intended to be circumpolar with an international perspective rather than focussing on any particular country or region. The intent is that it will include both science-based and community-based monitoring elements.

From a CAFF perspective, the challenge of monitoring Arctic biodiversity is to how to better harness knowledge and capacity to help make informed and effective decisions in the face of rapid and accelerating change. The current lack of coordinated monitoring practices has resulted in incomplete and irregular coverage, limited ability to detect and understand change, and limited ability to make coordinated management decisions. The CAFF approach includes building capacity through groups of experts, integrated pan-Arctic monitoring, coordinated data access with scenario and decision support tools, and coordinated reporting and assessment.

The objectives of the polar bear monitoring plan workshop are to identify:

- a circumpolar monitoring framework;
- standardized metrics;
- optimal sampling schemes;
- methods;
- suite of polar bear indicators and tools; and,
- networks, individuals, and existing information to support eventual implementation of the plan.

### **Pan-Arctic Monitoring Plan**

The Parties to the Agreement agreed at their meeting in Tromsø in 2009 that climate warming was the primary threat to polar bears. The Group agreed that the following are also serious threats to polar bears: pollutants, unsustainable harvest, and industrial activities. Some threats are emerging and others are current, which will influence plan development and how to address. Drivers and threats were discussed in some detail. Climate would be considered a driver whereas climate change a threat. It was recognized that threats help identify metrics but that we should not develop a plan that only monitors threatened subpopulations. The Group agreed that there was tremendous value in establishing baseline data for some subpopulations that are currently not of concern. High Arctic Archipelago subpopulations were noted as important to monitor to gather baseline data. It was noted that we are only able to establish links between threats and their impact on polar bears through long-term studies of some subpopulations. Because we are unable to monitor all 19 subpopulations, we developed a plan based on intensive monitoring of several subpopulations that represent larger eco-regions supplemented by less intensive monitoring in other subpopulations.

The Group discussed Designatable Units and reviewed several examples including ecological based units in the Canadian Arctic, four eco-regions, and CAFF's eight arctic marine areas that generally match polar bear eco-regions/designatable units. It was generally agreed that a circumpolar monitoring plan would probably include varying intensities of monitoring; i.e. at a pan-Arctic level, regional/eco-region level, and at the subpopulation level. Different metrics would be applied at these different levels. There was general agreement that the four eco-region approach (seasonal ice, archipelago, divergent, and convergent ice zones) is a good starting point for defining the regional level monitoring.

The Group went through several iterations of identifying key information needs/questions, key drivers (or factors), and approaches to development of a monitoring plan. The Group discussed and finalised a table that listed the key factors, and the associated impacts on polar bears agreed to by the Group.

After finalizing a table of drivers/factors and impacts, the Group began developing a more detailed table of the metrics associated with essential monitoring elements. There was considerable discussion regarding how such a table should be structured and how to capture differences between indices and trends. For example, abundance was agreed to be a measure of population size and that a trend in abundance would have to be based on projected or measured changes in population size. There may also be indices that reflect population status, which require validation. There was a discussion of the importance of community-based monitoring, Traditional Ecological Knowledge and Local Ecological Knowledge, but that it was also important that observations and specimens collected be documented

systematically. There was agreement that the process of conducting polar bear research should also be monitored.

In developing a more detailed table of metrics, there was a continued discussion of three scales of monitoring – intensive subpopulation, eco-region, and circumpolar. This led to a discussion of identifying a reference subpopulation for each of the eco-regions. Lancaster Sound was judged to be the most appropriate subpopulation to represent the Arctic Archipelago.

The Group referred to Vongraven's and Peacock's background paper, especially Tables 2-4, to help fill in the various methods by which to monitor essential elements identified in by the Group.

There was a discussion about specifically including intervals for monitoring the various elements in Table 2. The Group decided that intervals would be better described in the short text that will accompany the table where the reasons can be better explained. The Group also decided that it would be important to analyze existing data to provide insight into the optimal sampling approach (sampling intensity and frequency) for various metrics (i.e., what is lost/gained?).

The criteria for placing each subpopulation into High, Medium, or Low categories for monitoring were clarified.

The Group agreed that it was important to examine questions of appropriate design of monitoring plans (e.g., how many bears are needed for abundance estimate, what is an appropriate coefficient of variation, power analysis). The Group further recognized while this discussion focused on abundance estimates that it also applied to other metrics.

An essential part of completing the Monitoring Plan is the writing of the text for each of the various monitoring elements. The expectation is for 1-2 pages of referenced text for each that provides the detailed background. Members of the Group volunteered to write these with an expectation of this being done within the next two weeks.

The finalised tables will be a part of the final monitoring plan.

### **Community-Based Monitoring**

Jack Omelak spoke about community-based monitoring in Alaska. He noted that it is often much harder to identify what to monitor than it is to identify how to monitor it. The success of community-based monitoring often comes down to relationships between people, groups of people, and agencies. In addition, each community is different with different leadership. Thus different approaches to monitoring would be required. Long-term relationships with communities and good listening skills are critical. Communities often see people come and go without any long-term continuity, it takes time to build relationships that lead to successful monitoring.

**APPENDIX 1.** Participants at the 2011 CAFF Polar Bear Monitoring Plan Workshop, 19-21 February, Edmonton, Alberta, Canada.

Individuals from Nunavut Wildlife Management Board; Department of Fisheries, Hunting , and Agriculture, Government of Greenland; and the Chukotka Branch of the Pacific Research Fisheries Center, Anadyr, Russia, were invited, but were unable to attend.

<b>Name</b>	<b>Affiliation</b>	<b>Email</b>
Aars, Jon	Norwegian Polar Institute, Norway	jon.aars@npolar.no
Amstrup, Steve	Polar Bears International, USA	samstrup@pbears.org
Atkinson, Stephen	Nunavut Department of Environment, Canada	sveveone@mts.net
Belikov, Stanislav	All-Russian Research Institute for Nature Protection, Russia	sbelik40@mail.ru
Born, Erik	Greenland Institute of Natural Resources, Nuuk, Greenland	ewb@ghsdk.dk
Branigan, Marsha	Department of Environment and Natural Resources, Northwest Territories, Canada	marsha_branigan@gov.nt.ca
DeBruyn, Terry	US Fish & Wildlife Service, Anchorage, USA	terry_debruyn@fws.gov
Derocher, Andy	University of Alberta, Edmonton, Canada	derocher@ualberta.ca
Durner, George	US Geological Survey, Anchorage, USA	george_durner@usgs.gov
Gilbert, Gregor	Makivik Corporation, Quebec, Canada	ggilbert@makivik.org
Gill, Mike	CAFF/CBMP, Whitehorse, Canada	mike.gill@ec.gc.ca
Hanbidge, Bruce	Wildlife Management Advisory Council, Inuvik, Northwest Territories, Canada	wmacnwt@jointsec.nt.ca
Lunn, Nick	Environment Canada, Edmonton, Canada	nick.lunn@ec.gc.ca
Obbard, Marty	Ontario Ministry of Natural Resources, Peterborough, Canada	martyn.obbard@ontario.ca
Omelak, Jack	Alaska Nanuuq Commission, USA	jo_aknanuuq@gci.net
Ovsyanikov, Nikita	Wrangel Island State Nature Reserve, Russia	nikita_ov@mail.ru
Peacock, Elizabeth	US Geological Survey, Anchorage, USA	lpeacock@usgs.gov
Pokiak, Frank	Wildlife Management Advisory Council, Inuvik, Northwest Territories, Canada	igc-js@jointsec.nt.ca
Richardson, Evan	Environment Canada, Edmonton, Canada	evan.richardson@ec.gc.ca
Stirling, Ian	Environment Canada, Edmonton, Canada	ian.stirling@ec.gc.ca
Vongraven, Dag	Norwegian Polar Institute, Norway	vongraven@npolar.no
Wiig, Øystein	University of Oslo, Norway	oystein.wiig@nhm.uio.no