IUCN/Species Survival Commission
Polar Bear Specialist Group

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Priorities for Multi-Lateral Actions – Advice to the Range States

On behalf of the Membership of the IUCN/Species Survival Commission Polar Bear Specialist Group (PBSG), we are providing the Group's advice with respect to priorities for multi-lateral actions that the Range States could take over the next 2-10 years to best address conservation and research needs for polar bears. Although the PBSG has not met face-to-face since the request from the Range States Heads of Delegation was received last month, the members discussed priorities via e-mail. The members identified 25 worthy areas of further action for consideration by the Range States, which the Co-Chairs then reviewed and synthesized into this response.

In February 2011, 22 international participants 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). This plan was intended to be circumpolar with an international perspective rather than focussing on any particular country or region and included both science-based and community-based monitoring elements. Although the comprehensive plan was not adopted by CAFF, the concepts and strategies of that framework are still valid and would provide valuable guidance today. The plan not only identified many of the priorities that were recently discussed as part of the current advice to the Range States, but also identified strategies for accomplishing these. The PBSG considers this document an important monitoring framework and recommends that the Range States review it as part of its discussions of priorities for polar bears. This plan was published and the full citation is:

> Vongraven, D., Aars, J., Amstrup, S., Atkinson, S.N., Belikov, S., Born, E.W., DeBruyn, T.D., Derocher, A.E., Durner, G., Gill, M., Lunn, N.J., Obbard, M.E., Omelak, J., Ovsyanikov, N., Peacock, E., Richardson, E., Sahanatien, V., Stirling, I. and Wiig, Ø. 2012. A circumpolar monitoring framework for polar bears. *Ursus Monograph Series* **5**: 1–66.

It was not easy to select 3-5 priorities from among 25 suggested by the PBSG, thus, the Range States should not consider the following as the only priorities but rather a reflection of those areas considered to be of higher importance. In no particular order:

1. Update Subpopulation Abundance Estimates – Although it is recognized that several subpopulations will be difficult to monitor on a regular basis, it is important that data-deficient subpopulations be assessed at least once in the near future. As a number are currently data-deficient, updated information on abundance is invaluable in establishing global trends.

2. Subpopulation Delineation – Re-evaluation of subpopulation boundaries across the circumpolar range of polar bears using the best available spatial and genetic data. Identification of those subpopulations most likely to shift, merge, or split according to spatial and genetic structure.

3. Long-term Monitoring in High Arctic Subpopulations – The Canadian Archipelago and northern Greenland are areas projected to be the last refugia for polar bears if climate warming continues unabated. However, there are currently few data that allow us to realistically project how effective or important these areas may or may not be. Earlier surveys have indicated very low densities of both polar bears and ice-breeding seals (in part possibly because of the prevalence of multiyear ice), the continental shelf is narrow in these areas, and the water flowing south from the Polar Basin is cold, stratified, and fairly sterile, which taken together, may not suggest that the proposed last refugia will be as biologically productive and effective as is sometimes projected. Establishing baseline data will be important for conservation planning.

4. Sea Ice Habitat Use/Selection – Characterize sea ice used by polar bears across their circumpolar range to improve understanding of habitat-demographic relationships. This could be an update of the earlier work of Durner et al. 2009 (Ecological Monographs 79: 25–58) using telemetry data from all jurisdictions and updated sea ice/climate model output and should include both marine and terrestrial habitat assessments.

In addition to the above four priorities that received the most support, the following four areas were close behind and, therefore, worthy of consideration by the Range States:

1. Establishment of Circumpolar Disease/Parasite Monitoring – Many parasites and pathogens are, or are expected to, expand their ranges northwards. Novel diseases in polar bears need to be detected early and prepared for. Effects of health on population dynamics is poorly understood. Some standardization of surveillance would allow for comparisons between subpopulations or regions. Further, polar bears can function as sentinels for changes in the composition of pathogen and parasite communities.

2. Circumpolar Analyses of Sex and Age Structure using Harvest Data from all Jurisdictions – Although large harvest data sets exist, for the most part, few analyses have been completed so that their importance or lack thereof for management/research purposes has not been evaluated. To date, there have been limited analyses to evaluate their value to determining sustainable harvest levels and monitoring harvests, reproductive success, and population size and trends. In those subpopulations for which some analyses have been done, they are largely outdated so their value to assessing changes, or the lack of them, is limited. Harvest data continue to be collected with no view to how or if analyses of such data might be developed or used in the future.

3. Improve Research of and Planning for Human-Bear Conflicts – Bears are spending more time on land and with increased human activities comes increased probability of human-bear interactions, displacement from resting habitats, and disturbances to denned bears. A better understanding of how increased human activities are likely to affect land-based bear behavior, energetics, reproductive success, and human-bear interactions is necessary. Provision of appropriate tools and training to mitigate threats to both northern communities and polar bears are also required.

4. Maintain Long-Term Monitoring of Demographics in Areas where these Data Already Exist – Our ability to recognize and anticipate the ecological significance of changes now occurring in lesser studied subpopulations is possible only because of existing long-term data bases for a few well monitored subpopulations. These existing, long-term monitoring studies provide the baseline

against which to interpret and project changes expected over time in areas without similar long-term studies and baseline data.

Again, we direct the Range States to the monitoring plan published by Vongraven et al. (2012) – it identified many of the same priorities listed above and identified strategies for accomplishing these.

We hope that the above advice from the PBSG is useful to the Range States in its planning of multi-lateral actions that could be taken over the next 2-10 years that would address important conservation and research needs for polar bears. If you have any questions or require clarification of any of the above please do not hesitate to contact us by email (dag.vongraven@npolar.no; nick.lunn@canada.ca).

Yours sincerely,

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