DEDICATED TO THE STUDY AND CONSERVATION OF PACIFIC SEABIRDS AND THEIR ENVIRONMENT

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August 24, 2010

Ambassador Don MacKay
Chair, CCAMLR
P.O. Box 213
North Hobart 7002
Tasmania, Australia

Re: Designation of Marine Protected Areas in the Southern Ocean

Dear Ambassador MacKay:

On behalf of the Pacific Seabird Group (PSG), we are providing comments upon the designation of marine protected areas (MPAs) in the Southern Ocean by the Commission of the Convention for the Conservation of Antarctic Marine Living Resources (CCAMLR). PSG generally supports the concept of designating MPAs in the Southern Ocean, and the use of sound science in making such decisions. We wish to support specifically the consideration of the Ross Sea, including its shelf and slope, as part of an MPA network. PSG is an international, non-profit organization that was founded in 1972 to promote the knowledge, study, and conservation of Pacific seabirds. It has a membership drawn from the entire Pacific basin, including Canada, Mexico, Russia, Japan, China, Australia, New Zealand, and the USA. Among PSG's members are biologists and scientists who have research interests in Pacific seabirds, government officials who manage seabird refuges and populations, and individuals who are interested in marine conservation. PSG is a member of the Ornithological Council, American Bird Conservancy and IUCN.

Article IX 2(g) of CCAMLR provides for "the designation of the opening and closing of areas, regions or sub-regions for purposes of scientific study or conservation, including special areas for protection and scientific study." PSG applauds CCAMLR's recent efforts, termed "bioregionalisation" to identify and designate a network of MPAs, using spatial conservation

planning, thereby to ensure the preservation of biodiversity throughout the Southern Ocean.[1] We note that CCAMLR's efforts in this regard have been endorsed by the Antarctic Treaty Consultative Powers as consistent with the Antarctic Environmental Protocol.[2]

CCAMLR's efforts thus far have identified the Ross Sea as one of 11 areas deserving additional close scrutiny in the MPA designation process. It is encouraging, but not surprising, that the Ross Sea is under consideration, given the results from decades of Southern Ocean marine research.[3] PSG requests that in addition to your efforts to protect vulnerable marine ecosystem components such as benthic communities,[4] that you also effectively address the assemblage of upper trophic-level mobile organisms such as large predatory fish, seabirds, pinnipeds and cetaceans that occupy overlying waters. The loss of such apex and mesopredators have had profound, rippling effects on benthic communities elsewhere in the world's oceans, thus emphasizing the importance of all its member components to the diversity and functioning of a marine ecosystem.[5] MPAs are a well proven tool in marine conservation and biotic management, if designated using a scientific basis.[6]

While it is recognized that no part of the world's oceans has escaped the effects of anthropogenic influence,[7] the Ross Sea may be the least affected stretch of ocean remaining on Earth with

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[1] Workshop on Bioregionalisation of the Southern Ocean. SC-CAMLR-XXVI/11. Brussels, 13-17 August 2007.

[2] Working paper 055, Report of the Joint CEP/SC-CAMLR Workshop. April 2009, Baltimore.

[3] Summarized in Smith, W.O., Jr. et al. (2007) Marine ecosystems: the Ross Sea. Phil. Trans. R. Soc. B 362: 95–111; Smith W.O., Jr. et al. (2010) The Ross Sea continental shelf: regional biogeochemical cycles, trophic interactions, and potential future changes. In Antarctica: An extreme environment in a changing world. J. Wiley and Sons, London, in press.

[4] CCAMLR Conservation Measure 22-08; http://www.ccamlr.org/pu/e/e_pubs/cm/09-10/22-08.pdf.

[5] For example: Dulvy N.K., et al.. (2004) Coral reef cascades and the indirect effects of predator removal by exploitation. Ecol Lett 7:410-416; Frank K.T. et al. (2005) Trophic cascades in a formerly cod-dominated ecosystem. Science 308:1621-1623; Mumby P.J. et al. (2006) Fishing, trophic cascades, and the process of grazing on coral reefs. Science 311: 98-101; Mumby P.J. et al. (2007) Trophic cascade facilitates coral recruitment in a marine reserve. Proc Natl Acad Sci USA 104:8362-8367; Myers R.A. et al. (2007) Cascading effects of the loss of apex predatory sharks from a coastal ocean. Science 315:1846-1850; Osterblom H. et al. (2007) Human-induced trophic cascades and ecological regimeshifts in the Baltic Sea. Ecosystems 10: 877-889; Stevens J.D. et al. (2000) The effects of fishing on sharks, rays, and chimaeras (chondrichthyans), and the implications for marine ecosystems. ICES J Mar Sci 57:476-494.

[6] Lubchenco J. et al. (2003). Plugging a hole in the ocean: the emerging science of marine reserves. Ecol Appl 13:S3-S7.

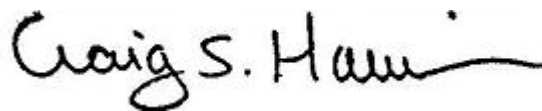[7] Ocean Ecology: Understanding and Vision for Research (1998) Workshop Report, National Science Foundation, Washington DC; ttp://joss.ucar.edu/project/oce_workshop/oeuvre/

regard to direct human influences.[8] The Ross Sea is one of the centers of climate change research,[9] and, as such, provides an increasingly rare opportunity for scientists to learn about ecosystem function in the face of climate change without the extenuating factors at play elsewhere. For this reason, and given the Antarctic Treaty responsibility for preserving the Antarctic for peace and science, the Ross Sea should be protected.

Elsewhere, human society is attempting to preserve Earth's remaining biodiversity before it is further reduced, and CCAMLR's current efforts to designate a network of MPAs is consistent with those aims. A recent analysis by the Antarctic and Southern Ocean Coalition viewed the Ross Sea under criteria used to designate Ecologically Significant Areas under the Convention for Biological Diversity, World Heritage Sites under the U.N. Environmental Program, and Antarctic Specially Protected Areas under the Antarctic Treaty.[10] The Ross Sea is viewed as "high seas," and is thus covered under neither the Convention for Biological Diversity nor the World Heritage Site conventions. However, its characteristics easily qualify it for protection under all of those agreements.

Despite the Ross Sea being just 2% of the Southern Ocean south of the Antarctic Polar Front, globally significant populations of Adélie penguins (38%), emperor penguins (26%), Antarctic petrels (~30%) and snow petrels reside for all or much of the year in waters of the Ross Sea shelf and slope. Other seabird species, such as Sooty Shearwaters, can be found near or on waters overlying the Ross Sea slope. As PSG's website notes, "Protection and conservation of the great variety of fascinating seabirds of the Pacific Ocean is a challenge that will require the contributions, research, concern and dedication of many people from many countries if the diversity and numbers of seabirds are to be preserved." It is clear to PSG that the weight of scientific evidence would support CCAMLR including the Ross Sea continental shelf and slope within its network of MPAs designated across the Southern Ocean. There are few such relatively untouched places remaining in the oceans of Earth.

Sincerely,

Craig S. Harrison
Vice Chair for Conservation

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[8] Halpern B.S. et al. (2008) A global map of human impact on marine ecosystems. Science 319: 948-951.

[9] ASOC (2009) A Ross Sea MPA: preservation for science. ATCM XXXII, Information Paper IP XX.

[10] ASOC (2010) The case for inclusion of the Ross Sea continental shelf and slope in a Southern Ocean Network of Marine Reserves. ATCM XXXIII, Information Paper IPYY.