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A Circumpolar Protected Areas Network for Conserving Biological Diversity

The Arctic is a vast but fragile region. Characterized by large numbers of relatively few species, Arctic food chains lack the resilience of those in more temperate regions. Native species are highly adapted to the harsh climate as well as extremes of light and darkness. Biological diversity is often concentrated in certain key habitats such as calving areas and the dynamic ice-edge ecosystem. Arctic species and ecosystems can be extremely vulnerable to anthropogenic effects, such as pollution and disturbance caused by human activities. The many migratory species that use the Arctic, whether waterfowl, shorebirds, marine mammals, or caribou, all require large areas of relatively undisturbed habitat.

Although fragile, much of the Arctic is as yet relatively undisturbed and so represents a global treasure. Protected areas are the centerpiece of each of the Arctic countries' strategies for conserving biological diversity and sustaining use of living resources of the Arctic.

Recognizing this intrinsic commonality of approach has led to an agreement among the eight Arctic nations to develop a Circumpolar Protected Areas Network (CPAN) designed to help protect habitats and ecosystems in the region. Developing and implementing CPAN is one of the main activities of the Conservation of Arctic Flora and Fauna (CAFF) initiative, one of the four programs of the Arctic Environmental Protection Strategy (AEPS).

A Declaration on the Protection of the Arctic Environment, signed in June 1991, at Rovaniemi, Finland, by Canada, Denmark (representing Greenland), Finland, Iceland, Norway, Russia, Sweden, and the United States, established the AEPS as a co-operative international forum for addressing Arctic environmental issues of common concern. Along with the eight member countries, the AEPS includes representatives of three organizations representing indigenous people as permanent participants: the Inuit Circumpolar Council (ICC), Saami Council, and Association of Indigenous Peoples of the North, Siberia, and the Far East of the Russian Federation. Non-Arctic governments and non-governmental organizations (NGOs) with an interest in the Arctic

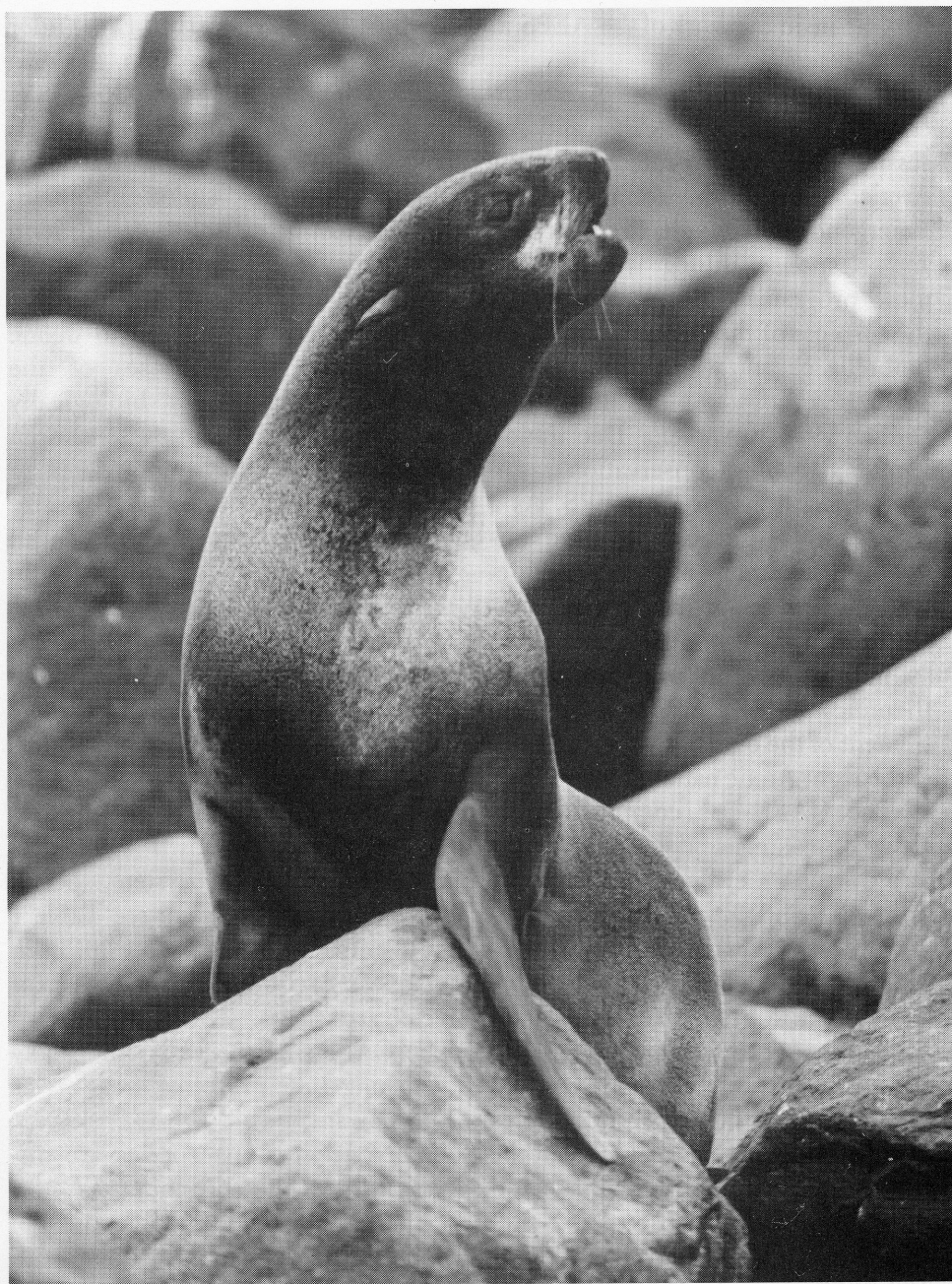


Figure 1. Fur Seal on Bogoslof Island, Aleutian Islands Unit, Alaska Maritime National Wildlife Refuge. *Leslie Kerr photo.*

participate in the work of the AEPS as observers.

Other programs of the AEPS include the Arctic Monitoring and Assessment Program; Protection of the Arctic Marine Environment; and Emergency Prevention, Preparedness and Response. Along with CAFF, these programs now operate under the auspices of the Arctic Council, an umbrella organization established in 1996.

The 1991 Rovaniemi Declaration identified habitat conservation as an area of emphasis for the AEPS. As a result, CAFF participants have undertaken a number of efforts to document the status of habitat conservation in the circumpolar Arctic, with an initial focus on protected areas. Identification of a CPAN is just one element of the overall CAFF program in the eight Arctic nations.

The CAFF has compiled overviews of existing and proposed protected areas, an evaluation of national principles and mechanisms for creating protected areas, proposed principles and guidelines for Arctic protected areas, a preliminary gap analysis to identify areas or habitat types in need of protection, and a strategy and action plan for further work. Copies of these reports are available from the CAFF International Secretariat, Hafnarstraeti 97, P.O. Box 375, 600 Akureyri, Iceland, (telephone: 354-462-3350; e-mail: CAFF@natfs.is; <<http://www.grida.no/caff>>), or from the Alaska Office of the U.S. Fish and

Wildlife Service, 1011 E. Tudor Road, Anchorage, Alaska 99503-6199 (telephone: 907-786-3544).

All of these products cover the area defined as "Arctic" by each of the member countries. Unfortunately, no single scientific or political definition of "Arctic" was acceptable to all the countries. In the United States, the latitudinal tree line is used to define "Arctic" for the purposes of the CAFF program. A biologically meaningful definition was chosen since the CAFF program relates to conservation of Arctic biota. An early CAFF working paper, "Towards an Ecologically Meaningful Definition of the Circumpolar Arctic," characterized the United States definition as "a northern treeless region, in which treelessness is a function of regional climate and not local edaphic conditions."

Each of the eight Arctic countries has established its own system of protected areas for ecosystem, species and habitat conservation; see Table 1 for a summary of the portion of each country's Arctic region that has protected area status.

The CAFF's purposes in informally linking these protected areas are as follows:

- Many Arctic fauna species are migratory. Different countries host major seasonal aggregations of these animals. No one country can ensure habitat protection for critical stages in the entire life cycle.

Table 1. Protected areas in the Arctic, by country (1995; adapted from CAFF Habitat Conservation Report No. 2)

Country	Portion of Arctic land area under protected status
Canada	8.3%
Finland	32.6%
Greenland/Denmark	45.7%
Iceland	11.8%
Norway	25.5%
Russia	3.7%
Sweden	20.7%
USA (Alaska)	56.1%
Total	14.1%

- Certain key areas are critical to maintaining the biodiversity and productivity for the entire Arctic ecosystem. All countries recognize their dependence on protection of these productive areas, which may come under another country's jurisdiction.
- Many of the Arctic countries have indigenous people and local rural populations that depend completely or to a large extent upon consumption of Arctic flora and fauna and maintenance of the integrity of the ecosystem. All Arctic countries share common concerns relating to sustainable uses and the impact of development on biologically productive areas warranting protection.
- Many of the Arctic's outstanding natural areas are safeguarded in some form of protected area. They have scientific, educational, recreational, and spiritual value, and represent a natural heritage of global significance.
- The countries have recognized and embraced the need to protect as fully as possible the wide variety of Arctic ecosystems and successional stages across their natural range of variation, and to maintain viable populations of all Arctic species in natural patterns of abundance and distribution.

The goal of CPAN is "to facilitate implementation of initiatives to establish, within the context of an overall Arctic habitat conservation strategy, an adequate and well managed network of protected areas that has a high probability of maintaining the dynamic biological diversity of the Arctic region in perpetuity." The re-

sulting network of protected areas (CPAN) is intended to:

- Represent as fully as possible the wide variety of Arctic ecosystems and successional states across their natural range of variation;
- Contribute effectively to maintain viable populations of all Arctic species in natural patterns of abundance and distribution; and
- Serve to maintain ecological and evolutionary processes, such as natural disturbance regimes, hydrological processes, nutrient cycles, and biotic interactions.

To meet this goal, the eight Arctic nations agreed that certain tasks should be undertaken. Each country must assess for itself the degree to which any given task is relevant given its national system of protected areas. This self-assessment is presented in the CPAN implementation plan prepared by each country. The general tasks needed to implement the CPAN are as follows:

- Identify gaps in existing and proposed protected areas;
- Expand and create protected areas to fill the identified gaps;
- Strengthen national mechanisms for creating and managing protected areas;
- Integrate the needs of protected areas into national policies and planning frameworks;
- Expand public and political support for protected areas;
- Improve the legal and institutional

framework;

- Provide adequate funding for protected areas; and
- Monitor the state of protected areas.

Details of each country's proposals for domestic implementation of CPAN can be obtained through the CAFF Secretariat in Iceland. The remainder of this article will give an overview of plans for implementation within the United States.

The United States is a world leader in conservation efforts in the Arctic. The percentage of U.S. Arctic lands in some form of protected status is the largest of the eight countries (Table 1). Management of these protected areas include provisions for access and use by local rural residents. United States law will continue to govern the establishment and management of U.S. protected areas in the Arctic and will guide U.S. participation in CPAN discussions and activities. Decisions on the specifics of U.S. participation are addressed cooperatively by the federal government and the state of Alaska in the Interagency Arctic Policy Group (a group, convened by the Department of State, composed of federal, state, and non-governmental organizations to consider issues of U.S. Arctic policy) and through other collaborative mechanisms.

From the U.S. perspective, CPAN offers several potential benefits. First, international cooperation among scientists provides valuable information

on the role of the Arctic in global environmental processes. This helps us understand the significance of the U.S. Arctic on circumpolar and global levels, and to identify any conservation needs. Second, it allows us to share our expertise as a world leader in environmental conservation. Third, the U.S. is able to learn from the experiences of other countries, including those that have experienced greater impacts from tourism and other human activities. This may help us to reduce or prevent impacts arising from increased use of Alaska's resources and its protected areas. Fourth, it encourages land management agencies at all governmental levels to look at conservation from an ecological perspective rather than being bound by constraints of political boundaries.

The U. S. participation in CPAN is outlined in a "Draft Circumpolar Protected Areas Network (CPAN)—Implementation Plan for the United States," which is still in preparation by the U.S. Fish and Wildlife Service, Alaska Region. This report outlines ongoing activities within the U.S. Arctic area that relate to the numbered sections of the overall CPAN strategy and action plan described earlier. Some of these activities relate specifically to management of protected areas, while others address Arctic species wherever they occur.

The United States already has a superb system of protected areas in the Arctic, but challenges do remain. One of these frontiers in habitat protection is the marine environment. In this, the Year of the Ocean, conservation of the Bering Sea looms large. Shared by the United States and Russia, the Bering Sea is a very productive and diverse ecosystem. Several Bering Sea conservation initiatives are now underway, including proposals for joint Russian-U.S. efforts. There are many approaches to providing protection and preservation of critical habitats in the Bering Sea, and CPAN can provide a forum for discussing these options.

The initial focus of the CPAN has resulted in an improved inventory of resources in the protected areas of all eight Arctic countries, and has provided a focus for efforts to establish additional protected areas; see Table 2. It has also provided a forum for communication and exchange of information, and has served to highlight areas of common concern. Better information and communication is at the heart of better science, and, with better science, better predictions regarding effects of alternative management decisions can be made. More accurate predictions result in more knowledgeable and, it is hoped, better management. In this way, the CPAN will improve the effectiveness of each country's management of its own protected areas.

Table 2. Proposed protected areas in the Arctic (adapted from CAFF Habitat Conservation Report No. 2).

Country	Total proposed areas	Coastal & marine areas (including islands)	Transboundary areas
Canada	21	15	1
Finland	3	Not applicable	0
Greenland	3	3	0
Iceland	11	6	0
Norway	43	32	7
Russia	31	15	7
Sweden	4	Not applicable	1
USA (Alaska)	2	1	1
Total	118	72	17

Notes. (1) Data are missing for one proposed area for Canada; (2) Data are missing for one proposed area for Finland; (3) A large marine area (fjords) is included for Greenland; (4) Data are missing for one proposed area for Norway; (5) Large marine areas are included for Norway; (6) Data are missing for 13 proposed areas for Russia; and (7) For USA, the figure relates to one new area proposed by non-governmental organizations (the other proposal mainly consists of already-existing protected areas).

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