Co-operative Strategy for the Conservation of Biological Diversity in the Arctic Region

PROGRAM FOR THE CONSERVATION OF ARCTIC FLORA AND FAUNA

CAFF
Conservation of Arctic Flora and Fauna
ABOUT CAFF

The Program for the Conservation of Arctic Flora and Fauna (CAFF) was established to address the special needs of arctic species and their habitats in the rapidly developing arctic region. It forms one of four programs of The Arctic Environmental Protection Strategy (AEPS) which was adopted by Canada, Denmark / Greenland, Finland, Iceland, Norway, Russia, Sweden and the United States through Ministerial Declaration at Rovaniemi, Finland in 1991. The other programs of the AEPS include the Arctic Monitoring and Assessment Program (AMAP) and the programs for Emergency Prevention, Preparedness and Response (EPPR), Sustainable Development and Utilization (SDU) and Protection of the Arctic Marine Environment (PAME).

Since its inaugural meeting in Ottawa, Canada in 1992, the CAFF program has provided scientists, conservation managers and groups, and indigenous peoples of the north with a distinct forum in which to tackle a wide range of arctic conservation issues at the circumpolar level.

CAFF’s main goals, which are achieved in keeping with the concepts of sustainable development and utilization, are:

- to conserve arctic flora and fauna, their diversity and their habitats;
- to protect the arctic ecosystems from threats;
- to improve conservation management laws, regulations and practices for the Arctic;
- to integrate arctic interests into global conservation fora.

CAFF operates through a system of Designated Agencies and National Representatives responsible for CAFF in their respective countries. CAFF also has an International Working Group which meets at least annually to assess progress and to develop CAFF Work Plans. It is headed up by a chair and vice-chair which rotate among the Arctic countries and it is supported by an International Secretariat. When needed, CAFF also sets up Specialist and Experts Groups to handle program areas.

The majority of CAFF’s Work Plan activities are directed at species and habitat conservation and at integrating indigenous peoples and their knowledge into CAFF. Some examples are: work on rare, vulnerable and endangered plants and animals of the Arctic; developing circumpolar conservation strategies for certain species; work on arctic vegetation, analysing and making recommendations on threats to arctic species and habitat; an arctic strategy on biological diversity conservation; an indigenous peoples mapping project. Most of CAFF’s work is carried out through a system of Lead Countries as a means of sharing the workload. Some projects are also assigned to the CAFF Secretariat. Whenever possible, CAFF works in cooperation with other international organizations and associations to achieve common conservation goals in the Arctic.
Cover photograph: Johanna Ilkävalko
An euglenid from arctic sea ice

Drawings: Zdravko Kolev
1 Arctic butterfly (Geneis sp.)
2 Arctic poppy (Papaver sp.)
3 Arctic char (Salvelinus alpinus)
4 Bracket fungus (Phellinus viticola)
5 Narwhal (Monodon monoceros)
6 Sea anemone
7 Arctic fox and arctic lemming (Alopex lagopus and Dicrostonyx torquatus)
8 Brown algae (Laminaria sp. and Fucus sp.)
9 Bird colony on an arctic island

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Preface

The Program for the Conservation of Arctic Flora and Fauna (CAFF) is a program of the Arctic Environmental Protection Strategy (AEPS) adopted by the governments of Canada, Denmark/Greenland, Finland, Iceland, Norway, Russia, Sweden and the United States in 1991.

CAFF was established to address the special needs of Arctic species and their habitats as human settlement and resource development activities rapidly increase in the Arctic region. Its main goals, which are achieved in keeping with the concepts of sustainable development and utilisation, are to conserve Arctic flora and fauna, their diversity and their habitats and to protect the Arctic ecosystems from human caused threats.

In June 1992, at the United Nations Conference on the Environment and Development (UNCED) held in Rio de Janeiro, the Convention on Biological Diversity (CBD) was signed by more than 150 countries and came into force on December 29, 1993. All eight Arctic countries have signed the Convention and Canada, Finland, Greenland, Iceland, Norway, Russia and Sweden have also ratified it. The Convention has three objectives, which are: the conservation of biological diversity; the sustainable use of biological resources; and the fair and equitable sharing of the benefits arising from the utilisation of genetic resources.

In recognition of the fact that the objectives of CAFF and the CBD are complementary to each other and that most of CAFF’s projects directly addressed conservation and sustainable use of biological diversity, the Arctic Ministers at Nuuk (1993) asked CAFF to suggest ways how to facilitate co-operation among the member countries for advancing the goals of the CBD in the Arctic region.

This process was initiated in 1994 by the establishment of a special Biological diversity Task Force, formed by Finland (lead), Greenland, Canada, Inuit Circumpolar Conference, Sami Council and the CAFF Secretariat. Its work resulted in the production of a Draft Co-operative Strategy for the Conservation of Biological diversity in the Arctic Region, which was presented to the AEPS Ministers at their meeting in Iqaluit in 1996. The Ministers directed CAFF to advance its work on the Strategy and present it in a final form at their next meeting.

Subsequent discussions at the Annual CAFF Meeting in Rovaniemi (1996), meetings of the CAFF Analytical Group in Oslo (1996) and Akureyri (1997), and open reviews among the member countries and Permanent Participants of CAFF, led to the final version of the Strategy presented here. In addition to providing strategic directions relating to the goals of the UN CBD, it is seen also as an overall conservation framework for the CAFF Program.

We wish to thank the numerous groups and individuals who have provided inputs to the development of this Strategy. In particular we want to recognise the substantial contribution made by the Finnish Ministry for the Environment and Eeva Furman, the Finnish Environment Institute.

June 1997
Peter Nielsen
CAFF Chair
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EXECUTIVE SUMMARY

Arctic nature is influenced by ecological stressors such as low temperatures and a short growing season. Species are near their limits of distribution and ecosystems are delicately balanced. Arctic ecosystems tend to be relatively simple and low in biological diversity compared with temperate and tropical ecosystems. However, in certain areas both biological diversity and population density are extremely high. Arctic biological diversity is characterised by endemic resident species, species with unique genetic variation and migrating species. Arctic biological diversity is important locally, nationally and globally.

The goals of this strategy are provided to enhance co-operation among arctic countries and relevant agencies, communities and organizations to secure the natural productive capacity of the arctic ecosystems and to secure biological diversity at all levels in the Arctic. The goals of this strategy are as follows:

Goal I:
Support the conservation of arctic biological diversity, including the diversity of ecosystems, species, populations and their habitats, and genetic resources. When arctic biological resources are used, the use should be at levels that are sustainable and meet the needs of local and indigenous people and do not adversely affect other ecosystem components.

Goal II:
Promote the participation of local and indigenous people in the development and implementation of policies and programs relating to the conservation of arctic biological diversity and the sustainable use of biological resources.

Goal III:
Develop and improve public education and awareness programs that promote the conservation of arctic biological diversity and the sustainable use of biological resources.

The main areas of action to reach these goals are:

* Identification of Arctic Biological Diversity
* Monitoring of Arctic Biological Diversity
* Species and Habitat Conservation and Restoration
* Identification of Threats
* Environmental Impact Assessments
* Protected Areas
* Conservation Outside Protected Areas
* Collaborative Research
* Sustainable Use of Biological Resources
* Sectoral and Cross-Sectoral Integration
* Data and Information Sharing
* Harmonization of Legislation
* Indigenous and Other Local People
* Education and Public Awareness

The eventual implementation of all provisions of this strategy would necessitate a major commitment and financial input by the arctic countries. In association with CAFF, work is being done to develop an Action
Plan based on this strategy by taking into account priority and financial considerations as well as the work done within the AEPS and other circumpolar programs. This strategy is not meant to serve only CAFF, but rather partnerships and linkages with other AEPS programs and other arctic or arctic-related programs are essential to fully implement the strategy.
1 INTRODUCTION

1.1 Biological Diversity

This strategy is based on the following definition of biological diversity:

| **Biological Diversity, or biodiversity means the variability and stability among living organisms from all sources including, inter alia, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species, between species and of ecosystems as well as stability within and between populations and species.** |

1.2 Biological Diversity in the Arctic

1.2.1 Arctic Ecosystems

Arctic biological diversity is important locally and nationally providing many essential opportunities and resources for the well-being of humans and their environment. The Arctic is also important on a global level, for example, in sustaining biological resources such as fish, marine mammals and birds that are valued by communities and economies far from the region, and by influencing global climatic patterns. Arctic seas play an important role by functioning as sinks of carbon dioxide (CO₂), the main greenhouse gas. The arctic seas are extremely cold and thus have a high potential for the uptake of atmospheric CO₂. Rich arctic phytoplankton binds dissolved CO₂, removing it from global circulation for several thousands of years.

The arctic region is home to hundreds of species, of which many are endemic to the Arctic. Resident species of the Arctic have developed characteristics or adaptations making many of them unique in terms of their genetic variation. A large proportion of residents consist of migratory species. Often in the Arctic, great numbers of species are gathered in small areas “hot spots” such as the sea birds along the ice edge systems and terrestrial mammals forming large herds. The diversity of arctic species results from the diversity of the ecosystems, which include tundra, forests, marine and freshwater ecosystems.

Marine hot spots: marginal ice zones, leads and polynyas of arctic oceans are highly productive and species rich. The free contact between water and air support marine mammals and birds as well as enhance heavy phytoplankton blooms.

Tundra areas are a type of arctic ecosystem with extremely variable vegetation patterns. They contain habitats that range from very wet and rich sedge meadows, to dry polar deserts where vegetation is restricted to a few types of lichens. Mountains and alpine areas represent one of the harshest tundra environments. Wind, erosion and very limited vegetation sets the limits for distribution of several species. Tundra areas provide habitats for species such as caribou, reindeer, small mammals and many invertebrates.

Continuous forests are widely distributed in the southern parts of the Arctic. These complex ecosystems provide habitats for a wide range of species. For example, 1000 species of beetles have been inventoried in a 200 km² area near the Arctic Circle in Fennoscandia.

Marine and other aquatic ecosystems support economic and socially important species including seals, murre, guillemot, polar bear, arctic char and many others. Arctic freshwater rivers, ponds and lakes also support a
relatively diverse array of species. Most ponds freeze every winter to the bottom and are thus unable to support fish. In ponds where fish are lacking, large-sized zooplankton can be found. Larger and deeper lakes do not freeze to the bottom and fish can survive. Primary production is, however, very limited.

Arctic ecosystems are unique in the sense that anthropogenic impacts are still at a relatively low level compared with most other parts of the earth where human settlements are more dense and development activities are more intensive. It was the recognition of the uniqueness and importance and the impending threats to the Arctic that led the arctic countries to agree to co-operate in the conservation of arctic flora and fauna, and to establish CAFF as a special program for this purpose.

1.2.2 Fragility of Arctic Ecosystems

The very characteristics which make arctic ecosystems so unique also make them extremely vulnerable to disturbances. Arctic ecosystems are sensitive to changes in the dynamics of their constituent populations and the relationships between species are easily disrupted. Ecological stressors have greater widespread effects on the entire arctic ecosystem than in more complex ecosystems. Arctic ecosystems are relatively simple and low in biological diversity compared with temperate and tropical ecosystems. Ecosystems with lower levels of species diversity generally have less capacity to withstand the fluctuations of external events which can mean decreased stability and increased fragility.
Food chains in the Arctic are relatively short, and as a result effectively accumulate and transport contaminants. Toxic contaminants are of great concern in the Arctic, since natural degradation processes are slowed by colder climatic conditions and reduced ultraviolet solar radiation. Many organisms in the Arctic are good adapters to harsh conditions, but poor competitors and are thus easily overcompeted by introduced species.

Arctic species, populations and their habitats are increasingly being threatened by human activities affecting both the environment and the livelihoods and cultural survival of indigenous and other local people. Population sizes as well as population numbers need to be maintained at sustainable levels to support a viable ecosystem. In the Arctic, co-management among users is necessary because of the scattered human populations and the subsistence lifestyles. The indigenous people’s knowledge plays an important role in the conservation of arctic biological diversity and sustainable use.

The Arctic’s biological diversity faces threats from many sources. Several types of threats to biological diversity in the arctic region are:

1. Species and ecosystem disturbance, degradation and fragmentation resulting from resource use and human development and settlement activities, such as greater use of vehicles and larger numbers of people visiting the Arctic.

2. Long-range pollution transported by air and water currents, including pollution of SO₂, NOₓ, CO₂, ozone, heavy metals, pesticides, fertilizers, freones, oil, mining wastes and radioactive emissions, as well as site contamination from hazardous materials such as pollution associated with offshore oil and gas development and land-based pollution sources.

3. Over-exploitation of biological resources and unwise harvesting practices that lead to habitat destruction, impacts on non-target species and reduced fitness.


5. Climate change.

6. Increased amounts of UV-B radiation leading to thinning of the ozone layer.

7. Increased exploitation of non-renewable resources and increased risk of accidents from exploitation activities.

8. Cumulative effects of all the above.

1.3 Purpose of the Strategy

1.3.1 Advantages and limitations of using the Convention on Biological Diversity (CBD) as a framework for Arctic conservation

The CAFF program has clear, distinct objectives: to promote conservation of arctic flora and fauna, their diversity and their habitats; to protect arctic ecosystems from threats; to improve conservation management laws, regulations and practices for the Arctic; and to integrate arctic interests into global fora. Therefore, strict adherence to specific, individual provisions or selected provisions of any particular convention, such as CBD, might restrict or, in some cases, exceed CAFF’s mandate. Additionally, being guided by the CBD might pose difficulties for countries that have not accepted all its contents and thus not ratified it.
However, it was felt that a biological diversity strategy loosely based on the CBD, and which includes some articles that are important to the Arctic and which highlights special arctic characteristics and challenges, might be useful. Moreover, a previous analysis had shown that most, if not all, of CAFF's current activities can be linked with the various articles of the CBD. In this form, the strategy could serve as a framework when countries that have ratified the CBD begin to implement additional measures to meet their obligations under the Convention. It could also function as a tool when linking AEPS/AC objectives to other international conservation instruments, both governmental and non-governmental, which have taken CBD into their programs.

1.3.2 Linkages and partnerships

The goals, objectives and principles contained within this Strategy are provided as guidance to countries in the formulation and implementation of future co-operative regional agreements, policies, plans and actions for the conservation and sustainable use of arctic biological diversity, as called for in the AEPS.

The governments of the arctic countries should promote partnerships wherever possible. Conservation of arctic biological diversity and sustainable use of biological resources requires the formation of partnerships to finance projects, to share expertise, experience and technology and to coordinate existing efforts.

This Strategy might serve not only CAFF, but also other AEPS programs. This will require a close cooperation within the AEPS. Because of this, and because of the wide reaching objectives contained within the Strategy, the eventual implementation of action plans will be the subject of priority considerations and work plan development within CAFF and other AEPS/AC programs. A commitment by the arctic countries to the goals, objectives and principles of this strategy would continue to demonstrate the value of the international co-operation that is required to maintain the ecological integrity of the Arctic and to achieve the conservation and sustainable use of its biological diversity when the arctic resources are used.

There are many potential partners in arctic biological diversity conservation besides the AEPS programs, international science councils, committees, commissions and foundations, non-government conservation groups such as World Wild Fund for Nature (WWF), international funding agencies such as the World Bank, private sector enterprises, universities and other research institutions such as museums and aquariums, indigenous and local peoples organizations and other landowners. Various international initiatives such as Ramsar, CITES and the 1973 International Agreement on the Conservation of Polar Bears support Arctic biological diversity conservation not only by their protection measures in the Arctic region, but also outside the Arctic, for example, by protecting wintering habitats of arctic species.
1.4 Principles of the Strategy

The Strategy is based on the following principles:

• Actions to prevent and/or avoid long- and short-term adverse impacts of activities on biological diversity should not be postponed because the causal link between activities and impacts has not been fully proven. (The Precautionary Approach)

• Decisions regarding biological diversity in the Arctic should be made by obtaining and sharing the best scientific information available and by developing and using improved techniques for dealing with risk and uncertainty.

• Conservation and sustainable use of arctic biological diversity should be based on an ecosystem approach.

• Opportunities for public participation in developing and implementing biological diversity conservation and sustainable use policies and programs should be provided for.

• Local and indigenous knowledge should be respected, recognized and used with the involvement of the holders of such knowledge.

• Activities should be integrated and interrelated to provide a consistent response to arctic conservation and sustainable use.

• Co-operation and linkages with other organizations and initiatives should be promoted.

• Use of arctic biological resources should be based upon sustainable use practices.
2 GOALS AND STRATEGIC DIRECTIONS

The following section outlines the main areas for action and relates them to the goals and the objectives of the Strategy. Areas of action are:

* Identification of Arctic Biological Diversity
* Monitoring of Arctic biological diversity
* Identification of Threats
* Environmental Impact Assessments
* Species and Habitat Conservation and Restoration
* Protected Areas
* Conservation Outside Protected Areas
* Collaborative Research
* Sustainable Use of Biological Resources
* Sectoral and Cross-Sectoral Integration
* Data and Information Sharing
* Harmonization of Legislation
* Indigenous and Other Local People
* Education and Public Awareness
GOAL 1

Support the conservation of arctic biological diversity, including the diversity of ecosystems, species, populations and their habitats, and genetic resources. Where arctic biological resources are used, the use should be at levels that are sustainable and meet the needs of local and indigenous people and do not adversely affect other ecosystem components.

2.1 Identification of Arctic Biological Diversity

It is a widely recognized problem that arctic biological diversity has been poorly studied. Since 1992, work in conjunction with the CAFF program has contributed in various ways to improving this situation by, for example, the development of circumpolar vegetation and animal habitat maps, and the compilation of lists of rare, endemic vascular plant species and threatened or vulnerable animal species that would benefit from concerted conservation actions by the arctic countries. However, much is still to be done, especially in terms of identifying biological diversity in remote arctic biomes and habitats and in improving the taxonomy for various groups of organisms such as invertebrates, fungi and microbes. Improved identification of the Arctic’s biological diversity is necessary to develop sound conservation and sustainable use approaches, to enhance monitoring, to support development of bio-indicators and new economic uses of biological resources. In order to determine which arctic species are most at risk and to set sustainable use harvesting levels requires a better knowledge of arctic biological diversity.

Objective 1

Enhance efforts to identify arctic biological diversity, paying particular attention to species, populations, habitats and ecosystems which are of greatest ecological, cultural, social, economic or scientific value and those which are vulnerable and require urgent conservation measures.

2.2 Monitoring of Arctic Biological Diversity

Effective long-term, bio-indicator monitoring programs are necessary to detect significant changes in Arctic biological diversity and to help determine the impacts of developments and the success or failure of management activities. Regional collaboration will be cost effective in monitoring many environmental, social and economic parameters.

All the arctic countries are engaged in various biological monitoring activities within their own jurisdictions. In 1995, in conjunction with the CAFF program, a preliminary overview of these activities was compiled. A further overview, also taking into account monitoring activities of international agencies and fora, is under way. The traditional emphasis of biological diversity monitoring in the arctic countries has been on vertebrate species rather than on invertebrates, vegetation or ecosystems. The preliminary analysis identified the need for increased monitoring efforts for various components that contribute to arctic biological diversity, especially on a circumpolar level. In connection with this analysis, the feasibility of establishing a pan-arctic biological diversity monitoring network is being investigated. Such a network would need to be developed in close collaboration among the groups working with circumpolar programs, such as the AMAP (Arctic Monitoring and Assessment Program), and each party would need to have clear areas of responsibility.

Objective 2

Enhance efforts to monitor arctic biological diversity, paying particular attention to species, populations, habitats and ecosystems which are of greatest ecological, cultural, social, economic or scientific value and those which are vulnerable and require urgent conservation measures.
2.3 Identification of Threats

The following main threats to arctic biological diversity have been identified through work in association with the CAFF program:

- Climate Change
- Mineral and Petroleum Exploration and Development
- Road Infrastructure and Motorized Vehicles
- Habitat Fragmentation
- Chemical Disturbance
- Unsustainable Fisheries Practices and Bycatch
- Over-exploitation of Species
- Invasion of Species
- Unsustainable Pasturage, Aquaculture and Husbandry
- Expansion of Tourism

It has been recognised that certain threats could be better addressed by certain AEPS programs, because the differing interests of the groups. These threats include ocean dumping, air- and waterborne contaminants, forestry activities as well as nuclear and toxic waste. There is need for a close co-operation among groups working in association with the AEPS and other arctic programs, to ensure that the full scope of threats to arctic biological diversity are adequately analysed and addressed by developing collaborative regional and arctic strategies and measures to combat threats and restore affected areas.

Objective 3
Identify processes and activities that threaten arctic biological diversity and restore when feasible.

2.4 Environmental Impact Assessment

Environmental Impact Assessments (EIA) are an essential aspect of environmental protection in the Arctic. Collaboration among arctic countries is especially needed for environmental assessments of projects that have the potential to affect the environment beyond the countries of origin. In addition, sharing experiences and methodologies is advisable to improve EIAs across the arctic region.

All arctic countries have signed the Espoo Convention on EIA and although the Convention is not yet in force, several countries already have co-operated with impact assessments.

Under the AEPS, development of Arctic EIA Guidelines fell under the provisions of the SDU (Working Group of Sustainable Development and Use). The CAFF program has been associated with this work through the provision of supportive inputs when needed. As a minimum, the CAFF program can be used to ensure that arctic EIA technologies and methodologies adequately address biological diversity conservation and the sustainable use of biological resources, especially when dealing with cumulative and indirect effects. In addition, the CAFF program can be applied in collaboration with the SDU and the AMAP for these issues.

Objective 4
Enhance the use of Environmental Impact Assessments, and emergency preparedness and response measures, in order to conserve arctic biological diversity.
2.5 Species and Habitat Conservation and Restoration

Management approaches must address the sustainable use of resources so that use of biological resources does not affect the long-term viability of species and populations, or affect their genetic variation or reproductive fitness. In some cases, this must be interpreted as no use of the resource. Collaborative approaches are required to manage shared resources, or if appropriate, implement recovery programs for shared threatened and endangered species. Furthermore, it may be important to develop measures of ex-situ biological diversity conservation.

Under the auspices of CAFF, the arctic nations have already agreed on the implementation of a far-reaching International Murre Conservation Strategy and Action Plan based on the sustainable use principle, and a similar strategy is under way for four species of eider ducks. The present overall biological diversity strategy can serve as a framework for further conservation strategies and action plans dealing with, for example, specific arctic habitats, and species or species groups of common conservation concern within the arctic countries.

Objective 5

Support and implement measures for the conservation of arctic genetic resources, species and their habitats.

2.6 Protected Areas

Protected areas are effective means of conserving arctic biological diversity and which uphold the sustainable use of biological resources. The CBD defines a protected area as “a geographically defined area which is designated or regulated and managed to achieve specific conservation objectives”.

Protected areas provide several valuable functions, including:

1 Conservation of species, genetic and ecosystem diversity
2 Preservation of wilderness
3 Maintenance of ecological processes and ecological integrity
4 Protection of indigenous and non-indigenous cultural features; and
5 Opportunities for scientific research, environmental education, outdoor recreation and ecotourism

Under the provisions of the World Conservation Union (IUCN) an international system of classifying protected areas was developed. According to the IUCN, a protected area is: "An area of land and/or sea especially dedicated to the protection and maintenance of biological diversity, and of natural and associated cultural resources, and managed through legal or other effective means”. As of 1996, there were 285 protected areas in the Arctic using the IUCN protected area classification system, covering roughly two million square kilometres. However, approximately half of this total is made up by the Northeast Greenland National Park. Additional protected areas or altered boundaries of existing protected areas are required to completely represent the variety of arctic ecosystems and to conserve unique or critical wildlife habitat.

Since 1993, one major project under the CAFF program has been the creation of Circumpolar Protected Areas Network (CPAN). In the initial phase, studies were undertaken to describe the state of existing protected areas in the Arctic region, to list proposed new protected areas and analyse gaps in habitat and ecosys-
term coverage, to analyse national mechanisms and principles, and to propose collaborative guidelines for their creation. A protected area in CPAN is defined in accordance with the IUCN. This initial descriptive phase of CPAN culminated in 1996 with the Ministerial endorsement of the CPAN Strategy and Action Plan, which listed several tasks that the arctic countries must embark on to fulfil the goal of CPAN.

The CPAN Strategy and Action Plan is a major achievement and one of the tangible proofs that arctic cooperation does work. Ahead lies the long-term process of implementing the strategy and thus ensuring the creation of 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. Sites designated in CPAN will be classified primarily using the IUCN management categories with particular attention given to the traditional rights and uses of indigenous peoples when protected areas are to be designated.

**Objective 6**

*Establish protected areas in the arctic region where they contribute to the conservation of ecosystems, habitats and species.*

**2.7 Conservation Outside Protected Areas**

Populations of species living in protected areas are viable only if they are able to safely interact with populations elsewhere. Moreover, many species have their main distribution outside the protected areas. Protected areas contribute to the conservation of biological diversity, but they must be supplemented by species protection mechanisms and by sound stewardship of nature across the entire arctic region. In association with CAFF, work is being done to map vegetation and ice edge ecosystems in order to support conservation measures outside protected areas. Databases and lists of threatened species or species considered to be of circumpolar conservation concern also serve this aim.

**Objective 7**

*Manage activities outside protected areas in order to maintain the ecological integrity of protected areas and to ensure the conservation of biological diversity.*

**2.8 Collaborative Research**

Collaborative research has long been recognized as essential in increasing understanding of arctic ecosystems. Arctic research is conducted within hundreds of different institutions; however, too often without wider collaboration. Collaborative research has many benefits, including maximizing the use of scarce financial resources and sharing of expertise, methodologies and technologies. Most of the projects under CAFF involve researchers from several or all arctic countries. Good examples are: projects conducted under the auspices of the Circumpolar Seabird Working Group (CSWG), categorization of common threats to arctic biological diversity and identification of species of common conservation concern within the arctic region.

**Objective 8**

*Promote co-operative research related to biological diversity.*
2.9 Sustainable Use of Biological Resources

Arctic nature is influenced by ecological stressors such as low temperatures and a short growing season. Many species are near their limits of distribution and ecosystems are delicately balanced. Thus many arctic species have low tolerance thresholds to any additional stress, including heavy harvesting pressure or excessive grazing. The 1973 International Agreement on the Conservation of Polar Bears stands as a good example of a successful international conservation agreement. The agreement recognizes sustainable use of polar bears. The CAFF Circumpolar Seabird Working Group is currently studying the effects of harvest of birds, incidental mortality in fishing nets and human disturbances on seabirds. The International Murre Conservation Strategy and Action Plan is a model for strategies and action plans for additional species of common conservation concern in the Arctic. The Arctic Council has chosen sustainable development, including sustainable use, as one of its main themes in its efforts to steer the future of the arctic area.

Objective 9

Advocate that the use of arctic biological diversity, when it occurs, should be sustainable.
2.10 Sectoral and Cross-Sectoral Integration

The need for sectoral and cross-sectoral integration of policy and programs, that is, the integration of biological diversity conservation and sustainable use goals with economic and social goals, was recognized during the negotiations of the CBD and resulted in integration being a fundamental requirement of the Convention. Sectoral and cross-sectoral integration is especially necessary to prevent or reduce conflicts among resource users.

Integrated decision-making should occur at both the policy and project development and implementation phases. Moreover, effective communication channels should be established to provide opportunities for all stakeholders to become involved in policy and planning processes.

Since the sectoral and cross-sectoral integration approach is fairly new in conservation, it is important that arctic countries share examples, developmental standards and guidelines to reach successful integration of biological diversity conservation and sustainable use goals with economic, cultural and social goals.

Objective 10
Enhance integration of biological diversity conservation and sustainable use objectives into sectoral and cross-sectoral plans and policies.

2.11 Data and Information Sharing

Research results and other information on arctic biological diversity collected within independent research programs are often not available to, among others, other researchers, planners and managers for a variety of reasons. For example, concerned parties may not be aware of particular research programs, or even if the parties are aware of other programs, the parties cannot access the data and information for technical reasons, including non-compatibility of data.

Under the provisions of CAFF, data and information are shared via the CAFF International Secretariat and its Internet homepage, and through correspondence between national representatives and researchers. The annual meetings of the CAFF International Working Group is a fruitful forum for information sharing. Several databases are under preparation, such as the Indigenous Knowledge Data Directory. The GIS (Geographic Information System) databases on circumpolar maps will be available on CD-ROM. A more systematic data and information network, or a clearinghouse system, would help to ensure that the results of research and traditional knowledge are available to those that need this information. It would also be helpful to compile a list of existing databases on arctic biological diversity and to promote the publication of unpublished scientific results in languages used by the international scientific community.

Objective 11
Establish and maintain mechanisms to enhance sharing of data and information.
2.12 Harmonization of Legislation

Ecosystems, species and populations do not recognize national borders. A migrating species may rely on habitats in several countries, and individual populations of the same species may be found in different countries. The non-harmonized conservation policies of various countries and the different actions taken by these countries affect biological diversity and hinder conservation efforts. Conflicting legislation may be detrimental to the protection of biological diversity, especially in cases of different management strategies.

Evaluating the progress made by the countries that are parties to the CAFF program on the implementation of CPAN will be a step towards harmonization of legislation for protected areas. The Environmental Impact Assessment guidelines prepared in connection with the SDU, the guidelines for offshore petroleum activities prepared in connection with the PAME, as well as this Strategy, all serve as starting points towards circumpolar harmonization of conservation policies.

Objective 12

Promote harmonization of legislation, guidelines and other policy instruments where it will contribute to the conservation and sustainable use of arctic biological diversity.
GOAL II

Promote the participation of local and indigenous people in the development and implementation of policies and programs relating to the conservation of arctic biological diversity and the sustainable use of biological resources.

2.13 Indigenous and Other Local People

Indigenous people have lived in the northernmost regions of the Arctic throughout their history. They have developed ways to survive in the harsh climate and to use biological resources in a sustainable manner. Preserving and using the traditional knowledge, which was acquired through the centuries, has resulted from this long-term interaction with nature. This has been extremely important for the conservation and sustainable use of arctic biological diversity, and traditional knowledge should continue to be valued.

One of the main objectives in the CAFF program is the integration of indigenous people and their knowledge into the conservation and sustainable use of arctic flora and fauna. In association with CAFF and the Inuit Circumpolar Conference (ICC), work is being done to develop an Indigenous Knowledge Data Directory and to gather information on the Beluga whale based on indigenous knowledge. Indigenous people are also directly involved with other CAFF activities, such as the ice edge ecosystem mapping project, and they provide input to other projects. Representatives from indigenous people's organizations (Permanent Participants as well as others) are regularly invited to attend CAFF National Representatives meetings and to comment on draft papers written in connection to CAFF.

However, a fuller integration of indigenous people would be desirable, especially in establishing and managing protected areas and during the planning and implementation of conservation and management strategies and action plans outside protected areas.

Objective 13

Promote the involvement of indigenous and other local communities in the development and implementation of biological diversity policies and programs.
2.14 Education and Public Awareness

Public understanding of biological diversity issues, and improved understanding of the value of biological diversity and the effects of human activities are fundamental to achieving the conservation and sustainable use of arctic biological diversity.

WWF’s Arctic Bulletin is a good example of successful information sharing and is a public education source for arctic conservation. The CSWG writes the Circumpolar Seabird Bulletin and the results of other CAFF projects are published in a series of CAFF reports. General information on the CAFF program and project activities is also spread via the CAFF Internet home page and the CAFF newsletter. However, the dissemination of CAFF-related information is still confined to a relatively narrow circle of scientists and conservation managers and is not reaching the general public.

Many institutions in the Arctic have produced educational material concerning arctic conservation. While such material must meet local needs, education approaches and material developed in one location can be adopted for use in other locations, often at a lower cost than preparing completely new material. This material could be shared by supporting translations of it into other languages; thus, expanding public awareness of arctic conservation.

Objective 14

Enhance sharing of existing public education materials and where appropriate, collaborate to develop new material.
3 IMPLEMENTATION OF THE STRATEGY

The eventual implementation of all provisions of this strategy would necessitate a major commitment and financial input by the arctic countries as well as from other financial bodies. Thus, as an initial step, in conjunction with CAFF, efforts are being made to develop an Action Plan based on this strategy by taking into account priority and financial considerations as well as work done within the AEPS and other circumpolar programs. The Action Plan will contain provisions to avoid unnecessary overlap and duplication of work. This Action Plan will then serve as a framework for the CAFF annual work plans. Other AEPS and circumpolar programs are encouraged to build their own Implementation Plans for this strategy.