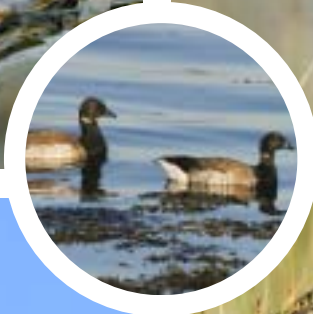


**DISCUSSION PAPER**

**GLOBAL AND FLYWAY-SCALE MONITORING  
AND CONSERVATION PROGRAMS FOR  
MIGRATORY WATERBIRDS OF THE ARCTIC**

**A COOPERATION STRATEGY BETWEEN  
CAFF AND WETLANDS INTERNATIONAL**

SUPPORTING PUBLICATION TO THE  
CIRCUMPOLAR BIODIVERSITY MONITORING PROGRAM  
FRAMEWORK DOCUMENT



## **CAFF Designated Agencies:**

Canadian Wildlife Service, Yellowknife, Canada  
Finnish Ministry of the Environment, Helsinki, Finland  
Greenland Home Rule, Ministry of the Environment, Nuuk, Greenland  
Icelandic Institute of Natural History, Reykjavik, Iceland  
Directorate for Nature Management, Trondheim, Norway  
Russian Federation Ministry of Natural Resources, Moscow, Russia  
Swedish Environmental Protection Agency, Stockholm, Sweden  
United States Fish and Wildlife Service, Anchorage, Alaska

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**DISCUSSION PAPER**

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**Supporting publication to the  
Circumpolar Biodiversity Monitoring Program  
Framework Document**

Prepared by

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on behalf of

**Wetlands International**

**CAFF CBMP Report No. 7**

**November 2004**



## Abstract

The Conservation of Arctic Flora and Fauna Working Group of the Arctic Council (CAFF) and Wetlands International (WI) share a common purpose to promote the conservation and sustainable use of (wetland) biodiversity in the Arctic. At the request of the CAFF International Secretariat, this discussion paper was developed to highlight the potential for cooperative actions between CAFF and Wetlands International, with a focus on inclusion of Wetlands International's global and flyway initiatives in the Circumpolar Biodiversity Monitoring Program (CBMP). This paper was also presented and discussed at the CAFF X Biennial Meeting in Anchorage, 14-16 September 2004.

To achieve this, the discussion paper reviews:

- Wetlands International's approach to conservation of wetland biodiversity
- The scope of wetland monitoring, research and conservation programs of WI around the world, with special emphasis on strategic overlap with the goals and objectives of CAFF, and
- Proposed activities to support the implementation of the CBMP

It is envisaged that the paper and subsequent discussions will provide the basis for a stronger and long-term interaction between CAFF and WI in promoting conservation and sustainable management of Arctic wetland and waterbird biodiversity across their ranges.

## Introduction

In response to the increasing pressures on Arctic biodiversity, in 2002 the Arctic Ministers endorsed the direction of the CAFF Working Group to develop a *Circumpolar Biodiversity Monitoring Program* (CBMP), instructing CAFF to cooperate with AMAP in coordinating the two respective monitoring programmes.

The CBMP was devised to provide the necessary biodiversity information to underpin development and adoption of conservation policies and strategies. These should be directed at Indigenous Peoples, other residents of the Arctic and all other stakeholders in relation to the sustainable utilisation of the Arctic's natural resources.

When CAFF commissioned the technical report "Global overview of the conservation of migratory Arctic breeding birds outside the Arctic" (Scott 1998), flyway programs implementing research and conservation effort outside the Arctic were becoming well developed. However, migratory waterbirds, as an important component of Arctic biodiversity, are still under threat. The characteristic biological diversity of the region, its vulnerability and threats to it are documented in the *Arctic Flora and Fauna: Status and Conservation* (CAFF, 2001).

Although incomplete, the available information about the threat status of migratory waterbirds shows that the urgency for conservation action remains high. This requires:

- 1) Better information and access to information on the trends and threats to migratory Arctic waterbird populations throughout their ranges,
- 2) A good understanding of the migration routes and key wetland sites for populations that breed in the Arctic, and
- 3) Strategic allocation of resources to address the priority conservation threats across flyway routes.

Wetlands International recognizes that in its mission to conserve and promote the sustainable use of wetlands and their resources, the Arctic is of paramount importance. Not only do wetlands comprise a very substantial area of habitat in the Arctic, the Arctic region is also a convergence of flyways of migratory waterbirds. Wetlands International is very interested in exploring the options for cooperating with and contributing to the work of CAFF to enhance opportunities for synergy and integration with other conservation initiatives, governments and communities. The development of the Circumpolar Biodiversity Monitoring Program in particular, offers a good opportunity for this.

Wetland species conservation is one of the core areas of work of Wetlands International, with a special emphasis on waterbirds (and a growing emphasis on freshwater fish). With the International Waterbird Census (IWC), arguably the most developed global biodiversity monitoring programme currently existing, and which has been running since the 1960's, we have a very powerful tool at hand for the conservation of waterbirds.

It is widely accepted nowadays that a 'range-wide' (flyway) approach is required for effective conservation of migratory Arctic breeding waterbirds. The Global Flyways Conference, organised by Wetlands International in April 2004 was a very clear expression of this principle and has resulted in the Edinburgh Declaration (see [www.wetlands.org](http://www.wetlands.org)), which clearly sets the future direction for waterbird conservation and monitoring. At the same time, this is fully in line with and supportive of the global biodiversity conservation agendas as set by the WSSD, CBD, Ramsar Convention and CMS.

The above initiatives fully recognise the paramount importance of the Arctic for migratory waterbirds and the responsibility the Arctic has in relation to the rest of the range of these species and vice versa. It will therefore be of importance and benefit to CAFF to seek closer collaboration with these global biodiversity initiatives and with the flyways initiatives that support them. Wetlands International is closely involved in this flyway work worldwide and can provide valuable cooperation and support to CAFF.

As recognised by its partner organisations and as laid down in its strategy, Wetlands International has an important role to play in the conservation of waterbirds and other wetland biodiversity worldwide. WI adopts the flyway approach to waterbird conservation, working with flyway initiatives all over the world. The flyway approach evolves around species and habitat (site) conservation for the benefit of biodiversity and people. Waterbirds are the enigmatic flagship species around which this approach is built, with the ecological networks of internationally important sites forming the basis for networks of governments, communities, researchers, volunteers and conservationists.

As one of its conservation tools, WI organizes the International Waterbird Census (IWC) - the global monitoring programme for waterbirds. Traditionally this programme has focussed on monitoring in the non-breeding season. The IWC offers a framework for many censuses and monitoring programmes worldwide and many organisations collaborate in it. Recognising the importance of the Arctic for all flyways ('source of all flyways') and the importance of all flyways for the Arctic, Wetlands International supports a close(r) and strong(er) cooperation with CAFF as a strategic step for the immediate future.

This discussion paper:

1. Summarizes the scope of waterbird research and conservation programs of WI around the world,
2. Puts CAFF in a central position within the flyway approach and
3. Proposes a number of activities and institutional linkages that will advance the strategic response to CAFF needs regarding the monitoring and conservation of migratory Arctic breeding waterbirds.

#### 1. Scope of waterbird research and conservation programs of WI

Under the *species conservation programme* of its current (2002-2005) strategic plan, WI has emphasised the development and implementation of, and support to a family of regional flyway initiatives. Within this flyway work it has given high priority to providing global leadership to waterbird monitoring through the International Waterbird Census and associated knowledge bases and to the development of partnerships for monitoring, assessment and conservation of selected non-waterbird taxa.

This strategic positioning is being addressed through activities implemented under six objectives, namely:

- Develop and maintain knowledge of the status of all global waterbird populations.

- Develop and maintain global waterbird population benchmarks.
- Disseminate effectively data on waterbird populations, status, threats and trends.
- Enhance the conservation and management of waterbirds through the development and implementation of action plans.
- Promote further development and implementation of flyway agreements, strategies and site networks.
- Develop wise use tools for waterbirds and other taxa.

*The sustainable use of wetlands and their resources* is a guiding principle in the approach of Wetlands International and this implies the involvement of local stakeholders (e.g. indigenous people). There has been a need to further strengthen this aspect of the work in its next strategy.

Wetlands International is currently developing a 10-year (2005-2014) strategic direction for its future work, organising it across four major goals:

1. Conservation and sustainable use of wetlands is demonstrated through integrated water resource management, coastal zone management and poverty alleviation strategies
2. Conservation status of wetland species, habitats and ecological networks is improved
3. The functions and values of wetlands are mainstreamed in sectoral development and policies
4. Stakeholders and decision-makers are well informed about the status and trends of wetlands, their biodiversity and priorities for action

The implementation of the four goals will rely on the development and implementation of cross-cutting work programmes on capacity building, policy/advocacy, and communication, across all offices.

The above-mentioned goals are being worked towards through a wide range of activities that include strong networks of sites, organizations, governments, individuals and interdisciplinary projects. Working with CAFF to achieve conservation and sustainable use of wetlands and wetland species, with involvement of the local people, is of high interest to Wetlands International.

Back to the conservation of waterbirds, the range-wide (flyway) approach is fundamental to the way WI works. The strategic approach within these *flyway conservation programmes* includes the following principles:

1. The objective is to conserve and sustainably use populations of migratory species across their full ranges;

2. Identify and quantify the key species, sites, bottlenecks and threats in the flyway where strategic action is required;
3. Identify the weaknesses, strengths and opportunities for strategic allocation of resources for capacity building; and
4. Explore and foster strategic institutional linkages and networks of people to generate effective and progressive networks for ongoing conservation.
5. Work with governments, conventions and regional bodies to develop and implement flyway/international agreements, frameworks and initiatives to promote international cooperation and conservation action of migratory waterbirds and their habitats.



Wetlands International relies on project and programme funding and on a small income from membership dues for conducting its work. Therefore, in doing its waterbird conservation work, WI is not a funding agency, but seeks funds independently and in partnerships to implement various flyway-scale conservation initiatives around the globe. Wetlands International's approach within flyways is to promote partnerships between communities, volunteers, industries, governments and NGO's, with strong linkages into global (Ramsar, CMS and CBD) and regional (e.g. AEWA) conventions and agreements. WI is closely involved with, or directly responsible for implementing, various flyway conservation initiatives around the globe, including the Asia Pacific Migratory Waterbird Conservation Strategy and the Central Asian Flyway initiative. Additionally, WI is determined to improve sharing between flyways where there are opportunities for leveraging the application of resources, experience and methodologies into new regions of the globe.

To deliver its work on species conservation, WI operates a number of global and regional projects that deal with policy development, monitoring and information collection, collation, analysis and dissemination, capacity building and communication. These include:

- **International flyway agreements and initiatives**

Several conventions, agreements and partnerships are being cooperated with to deliver flyway conservation programs. Wetlands International (Scott 1998) gives an exhaustive overview of existing international initiatives covering the conservation of migratory waterbirds (see Annex I). Many of the international conventions and agreements by themselves do not fully serve the breadth of conservation needs for populations of migratory arctic breeding birds, but support the flyway approach by Wetlands International as a mechanism to deliver their own strategic goals. An exception is AEWA (see below), which is a flyway agreement in itself. WI is involved in the development and provision of technical support and coordination to flyway agreements and cooperative initiatives around the globe.

1. ***African Eurasian Flyways:*** African Eurasian migratory Waterbird Agreement (AEWA) under UNEP/CMS. The African Eurasian flyways cover Arctic territories from Canada in the West to the Russian Lena delta in the East. Technical support was provided in the development of the agreement and ongoing technical support is provided to develop technical documentation, project proposals and a range of developmental and implementation activities, to the extent that WI still is one of the main technical support partners of AEWA. As an example, WI has initiated a large UNEP-GEF funded project on the African Eurasian flyway, strongly supporting the implementation of AEWA and Ramsar in the region. It is foreseen that the five-year project will be start in early 2005. In this project, WI will work together with BirdLife International and UNEP-WCMC.
2. ***Asia-Pacific Flyways:*** Asia-Pacific Migratory Waterbird Conservation Strategy. The Asia Pacific Flyways cover Arctic northeast Russia and

Alaska. In the Arctic these flyways overlap with the African Eurasian flyways, mostly in the region of the Central Asian Flyway and flyways within the American continents. The APMWC-Strategy is an international cooperative initiative initiated in 1996. WI provides coordination for the Asia-Pacific Migratory Waterbird Conservation Committee (MWCC), the apex body responsible for the development and coordination of the initiative. The MWCC involves two CAFF partners (Alaska/USA and Russia).

The initiative has focussed on:

- East Asian-Australasian Flyway and separate Action Plans for 3 waterbird groups
- Development of activities in the Central Asian Flyway.

More information is available on:

<http://www.wetlands.org/IWC/awc/waterbirdstrategy/default.htm>

### 3. *Flyways in the Americas:*

- a. Western Hemisphere Shorebird Reserve Network (WHSRN) – WI (through Wetlands for the Americas) started in the Americas as the WHSRN in 1991. Today we continue to be active in the consolidation of those existing WHSRN Sites in southern South America working with local authorities, and we are also involved in the identification and designation of new sites. WI is now represented on the newly formed WHSRN Hemispheric Council and it is expected that this will enhance linkages between Flyways that help to develop and strengthen Shorebird Site Networks, education exchange, research activities, transfer of conservation management techniques, etc.

Strong operational ties are being developed between different flyways and flyway programmes, such as between the East Asian-Australasian Shorebird Action Plan and flyway programs in the Americas, particularly through:

- Research and Monitoring (Dunlin population demography, colour flagging, monitoring on breeding vs. non-breeding areas)
- Education (Sister School Programme)
- Landscape management and flyway approaches to conservation and research
- Species Action Plans

Some specific activities facilitated by WI and its partners within flyway initiatives include:

1. Surveys to identify new sites, key sites, threats and impacts;
2. Monitoring population trends and breeding success on a flyway scale (at the non-breeding sites, where birds are often highly congregated and comparatively easy to count);

3. Support for professional and volunteer research and monitoring programs and databases;
4. Studies of migration routes and links between breeding and non-breeding sites for populations, sub-populations;
5. Developing networks of sites and people, based on ecological networks of wetlands that migratory waterbirds depend on through their annual migration cycles;
6. Training in skill in waterbird research and wetland conservation management;
7. Support to develop wetland and waterbird education materials, networks and initiatives;
8. Develop and support communication networks and materials;
9. Strategic species conservation initiatives; and
10. Strategic regional focus initiatives.

- **International Waterbird Census (IWC)**

The IWC is one of the longest running programmes of WI, having commenced in 1967. It covers most of the globe. The aims of the IWC have been defined as:

- To monitor the numerical size of waterbird populations
- To describe changes in numbers and distribution of these populations
- To identify wetlands of international importance for waterbirds at all seasons
- To provide information to assist protection and management of waterbird populations through international conventions, national legislation and other means

Implementing the IWC achieves more than just the collection, analysis and interpretation of data. It also:

- Increases awareness on waterbirds and wetland habitats
- Involves local communities and encourages local ownership and stewardship of wetland resources
- Focuses on capacity building of local and national governments, NGOs and individuals in the collection of information on waterbirds and wetlands.

The actual monitoring fieldwork – counting the birds at sites - is carried out by nationally coordinated networks currently numbering more than 15,000 volunteers and stakeholders, who almost always undertake the work at their own

cost. Many of these stakeholders live at or nearby the sites and depend on them for resources.

The census programme has provided a strong basis for the national monitoring of populations of waterbirds, identifying important wetlands and building active local networks to take actions to conserve wetlands and waterbirds. A large variety of reports and other outputs are available in hard copy and on the web. There is a clear scope for extending the monitoring of waterbirds to better cover the areas with stopover sites during migration and with breeding areas. This latter component is especially important for the Arctic region.

Population monitoring doesn't stop with counting individuals at sites during the northern winter season. The monitoring of numbers of waterbirds in the non-breeding grounds is complemented by the monitoring of demographic parameters such as reproductive success and mortality, together delivering integrated population monitoring. Reproductive success can be monitored on the breeding grounds, but also in the 'wintering' season (by recording juvenile/adult ratios) at non-breeding areas. The advantages of monitoring of breeding success on the non-breeding grounds and analysing population trends through coordinated flyway-scale monitoring at non-breeding sites include:

- Populations on non-breeding grounds are aggregated, more accessible and easier to count (versus dispersed and difficult to access and observe over breeding habitats);
- Annual counts can be assessed against annual Arctic conditions and indices of breeding success and population trends;
- Volunteer resources for census work are more available in areas of wintering habitats.

The monitoring programme also provides a strong basis for national/local governments and conservation groups to initiate conservation actions at important waterbird sites. More information is available at <http://www.wetlands.org/IWC/> and Annex II.

- **Specialist Group networks**

Specialist Groups are networks of expert scientists who provide information and advice in support of Wetlands International's programmes and projects in line with its Strategy as approved by its Board of Directors. The network of Specialist Groups is a vital part of Wetlands International, essential for the delivery of wetland and wetland species expertise in support of wetland conservation globally. There are currently 19 Specialist Groups: 14 covering waterbird taxa and 5 thematic groups on wetlands and wetland and waterbird issues. Overall our Specialist Group network involves over 2,000 people. The Waterbird Specialist Groups are operated as a 'Waterbird Network' jointly with IUCN - Species Survival Commission and BirdLife International. More information is available at <http://www.wetlands.org/networks/SGNews.htm> .

- **Waterbird Population Estimates**

WI is charged with the responsibility by the Ramsar Convention and CMS to maintain and provide updated information on the population estimates of all waterbirds around the world. This information is derived from the IWC and from the extensive network of Wetlands International, including the specialist groups.

Ramsar Parties use the information as a basis for identification and designating sites of international importance to the Ramsar List (1% criterion of a population), monitoring trends in populations, highlighting species of special conservation concern (threatened species), etc. CMS Parties rely on the information as a basis for monitoring trends in populations and identification of new species of concern to be added to the Annexes to promote their conservation and cooperative actions. The third edition, produced in 2002, covered a total of 2,271 biogeographic populations of 868 species that are now recognised. The next edition is expected in 2005 and is currently under preparation. More information is available at <http://www.wetlands.org/IWC/WPEnote.htm> .

- **Preparation of atlases/status overviews of populations of arctic species**

WI involves its extensive expert networks, partners and staff in producing synthesis of information to identify flyway boundaries, distributions and important sites for conservation for a range of migratory arctic-breeding species. These include:

- Anatidae for African-Eurasian flyways
- Anatidae for the East Asian flyway
- Waders (shorebirds) in the African-Eurasian flyways
- Shorebirds (waders) in the East Asian-Australasian Flyway
- Cranes in the North East Asian flyway

These publications are made available to a wide audience on the web and in hard copy.

These information sources provide an opportunity to develop stronger partnerships with the UNEP World Conservation Monitoring Centre's (WCMC) interactive wetland mapping programme <http://www.unep-wcfc.org/> - the UNEP information hub and an active partner of WI in relation to CMS, CAFF, AEWA and Ramsar.

- **Species Action Plan development/implementation**

Conservation action plans for groups of species or single species (focus on threatened species) have been produced for a range of different waterbirds, including herons, Anatidae and shorebirds in different parts of the world. These action plans are developed and implemented in partnership with government agencies, conventions, technical experts and NGOs.

Other, related activities include:

- **International Arctic Birds Breeding Conditions Survey (ABBACS)**  
The International Arctic Birds Breeding Conditions Survey is a joint effort of the International Wader Study Group and WI Goose & Swan Specialist Groups, both part of the Wetlands International network of Specialist Groups. The project aims at collating information on environmental conditions on breeding grounds of nesting birds throughout the Arctic and an analysis of data on bird numbers and breeding performance during Arctic summer in relation to climatic, predatory and other relevant factors. Information is available online on bird breeding success, rodent abundance and certain weather characteristics in the Arctic from the northern summers of 1992 to 2003. Information is available for 83 sites in summer of 2002 (Soloviev & Tomkovich 2003). More information is available at [www.arcticbirds.ru](http://www.arcticbirds.ru).

This information source provides an opportunity to develop stronger direct partnerships with the CBMP.

- **Organisation of technical/policy meetings/workshops**
  - Organising conferences of experts and policy makers on issues related to flyway conservation at a global or flyway level (e.g. Global Flyways Conference, Edinburgh, 2004, Asia-Pacific Waterbird Conservation Conference, Okinawa, 2000).
  - Organisation of meetings and side-events at global or regional meetings (such as at Ramsar COPs, CMS COPs and INTECOL).
  - Organisation, for CAFF, of the Songli workshop in 2000, on the conservation of migratory arctic breeding species
  - Organisation, together with AEWA, ONCFS and OMPO of a workshop on sustainable hunting, Senegal in October 2004
  - Specialist Group meetings with often authoritative outcomes like the Cadiz conclusions on the declines in wader species.
- **Dissemination of information**  
WI produces and commissions a number of publications and outputs in various languages for a range of global, national and local audiences on issues related to waterbirds and wetland conservation. It maintains an up to date website with a large variety of publication that can be accessed and downloaded for use.

***WI Staff Capacity to deliver on waterbird conservation work***

The global network of waterbird monitoring consists of coordinators based in Wageningen, Kuala Lumpur, Dakar and Buenos Aires. They coordinate regional and flyway networks of (often voluntary) national coordinators, who in turn work with extensive networks of local observers. Thousands of local community observers take part in this programme and community-based monitoring is actively promoted. This global network covers the most important ‘wintering’ areas for

waterbirds around the world and covers all of the major flyways in the Americas, Africa-Eurasia, Asia-Pacific and Oceania, and as such is very well suited for the purpose of population monitoring (also for Arctic-breeding species). Extension of the coverage towards staging and breeding sites is progressing. The Arctic is an important additional area to be covered in relation to monitoring of breeding success to extend the work of the ABBCS.

Databases are kept at the regional level, in a globally standardised database format, allowing combination of data into one (virtual) global dataset for analysis. This dataset can be one (but an important one) of many dispersed datasets, contributing to monitoring of Arctic biodiversity. Together with WCMC and BirdLife International, a model for sharing data from such dispersed datasets will be tested in the framework of the UNEP-GEF funded flyway project in the AEW region.

All of the above activities and networks can be organised to contribute to the work and objectives of CAFF and the CBMP within the Arctic region. Wetlands International is also well positioned in its global and flyway programmes to widely promote and assist Arctic biodiversity and conservation issues within the global conventions, agreements and networks across non-Arctic countries and communities. Some of the tangible activities that could be developed in the short term are given below.

2. Opportunities for activities and institutional linkages that will help CAFF advancing towards its objectives, especially in relation to migratory Arctic breeding waterbirds.

WI has historically adopted a flyway approach to migratory waterbird studies and conservation, with several initiatives around the globe that directly and indirectly relate to species that breed in the Arctic. WI aims to promote greater partnership and cooperation with like-minded regional bodies, to achieve an even better coverage of the total range of the flyways.

Using the rangewide (flyway) approach, Wetlands International proposes activities that will help to meet CAFF needs and priorities in the following ways:

- 1) Assist understanding of the population trends and conservation needs of migratory Arctic waterbirds across their non-breeding ranges;
- 2) Promote Arctic conservation priorities throughout the non-breeding areas of waterbird flyways;
- 3) Optimize integration and synergy between Arctic projects and programs with those in the non-breeding ranges, for research, monitoring, conservation, education and awareness;
- 4) Sensitize policy-makers and managers in Arctic countries to the conservation issues, challenges and priorities in the non-breeding ranges of arctic breeding species; and

- 5) Assist global and inter-flyway approaches to research and conservation of migratory Arctic breeding waterbirds.

It is envisaged that these actions would provide the basis for a stronger and long-term interaction between CAFF and WI in promoting the cause of conservation of migratory Arctic breeding waterbirds across their ranges. Such a relationship would mutually beneficial by being formalised through the development of a CAFF-WI MOU supported by a Joint Work Plan that clearly identifies priority actions and resources required.

### 3. Suggestions for Strategic Actions:

- 1) Conduct a detailed analysis of the final CAFF Circumpolar Biodiversity Monitoring Programme (CBMP) Framework Document to identify areas of synergy and complementary elements and how to strategically implement these. Within the current and new (still under development) strategy of Wetlands International and ongoing and proposed WI programmes/projects, to identify complementary and mutually supportive actions (Table 1 provides an overview of actions based on the draft CBMP document).
- 2) Develop and agree on a framework for cooperation between CAFF and WI.
- 3) Develop IWC for inclusion of Spring and Autumn stop-over site counts.



**Table 1: CBMP objectives, complementary programmes of WI, and opportunities for support and cooperation**

<b>Areas of focus of CBMP</b>	<b>Supportive/complementary WI programmes</b>	<b>Opportunities for cooperation</b>
Develop network relevant research institutes, programs, and organisations, covering different aspects of Arctic biodiversity to reduce overlap and optimise logistics costs in Arctic research	WI has a strong network of organisations, institutes, programmes, and individuals in the region (plus experts through the WI Specialist Group network)	<ul style="list-style-type: none"> <li>• Improved communications between researchers from the Arctic and other regions.</li> <li>• Development of joint research activities</li> </ul>
Species and Monitoring Networks	<ul style="list-style-type: none"> <li>• Coordination of the International Waterbird Census, collecting information on distribution of waterbirds in non-breeding period (ease of monitoring of congregations in non-breeding areas versus dispersed populations on breeding grounds)</li> <li>• Waterbird Population Estimates (estimates and trend information)</li> <li>• Success of breeding (such as for shorebirds in Australia)</li> </ul>	<ul style="list-style-type: none"> <li>• Sharing of waterbird monitoring information leading to improved population estimates and trend information</li> <li>• Input from updated information on seabirds to WPE publications</li> </ul>
Sites and Ecosystem networks.	<ul style="list-style-type: none"> <li>• Site networks established under the Asia-Pacific Migratory Waterbird Conservation Strategy (for Anatidae, shorebirds, cranes) provide a basis for implementing monitoring, conservation, and education &amp; awareness programmes</li> <li>• Site networks are being established in the African-Eurasian Flyway</li> </ul>	<ul style="list-style-type: none"> <li>• Strengthening of conservation, monitoring and education &amp; awareness networks for migratory Arctic species across their flyways.</li> <li>• Use networks for capacity building in biodiversity conservation</li> </ul>
Circumpolar Protected Areas Network (CPAN) Strategy and Action Plan	<ul style="list-style-type: none"> <li>• International Arctic Birds Breeding Conditions Survey</li> <li>• Initial surveys to identify internationally important waterbird sites in north and west Kamchatka (Russian Far East)</li> <li>• Flyway Site Networks of internationally important sites</li> <li>• WI Waterbird Harvest Specialist Group activities</li> </ul>	<ul style="list-style-type: none"> <li>• Recognition of internationally important sites in flyway site networks</li> <li>• Sharing of information on harvest of migratory Arctic species, as a basis for developing sustainable harvest strategies</li> </ul>
Community monitoring	<ul style="list-style-type: none"> <li>• Volunteer-based census programmes in non-breeding ranges in Asia, Africa, Australasia, Europe, Neotropics (IWC, AWC, AWSG, etc).</li> </ul>	<ul style="list-style-type: none"> <li>• Building links between communities and volunteer groups across flyways</li> <li>• Sharing in capacity building for community-based monitoring</li> </ul>
Data management and communication	<ul style="list-style-type: none"> <li>• IWC Database for management of information on waterbird census and wetland status</li> <li>• Ramsar Site database (managed for Ramsar Convention) includes</li> </ul>	<ul style="list-style-type: none"> <li>• Enhanced exchange of information on species and trends</li> <li>• Communication of information on breeding</li> </ul>

	information on species <ul style="list-style-type: none"> <li>• Collaborative development of WCMC</li> </ul>	grounds to non-breeding ranges
Monitoring work on contaminants by AMAP	No ongoing programmes.	Opportunity for linkage through Specialist Group activities?

**References**

CAFF 2004. *Circumpolar Biodiversity Monitoring Program – Framework Document*. CAFF CBMP Report No. 1, CAFF International Secretariat, Akureyri, Iceland.

Scott, D. 1998. *Global Overview of the Conservation of Migratory Arctic Breeding Birds outside the Arctic*. CAFF Technical Report No. 4. CAFF, Iceland. 133 pp.

**Annex I: Principal recommendations of the CAFF Technical Report No 4 (Scott 1998), relating migratory waterbirds:**

1. Closer involvement of CAFF countries in conventions & agreements, and promotion of better collaboration between these instruments
2. Greater CAFF participation in, and promotion of, the Bonn Convention (CMS) and AEWA
3. Increased adherence to the Convention on Biodiversity
4. Increased support for implementation of the Asia Pacific Migratory Waterbird Conservation Strategy
5. Promote the Ramsar Convention and designate further sites to the List
6. Promote the Bern Convention in Eastern Europe
7. Increase collaboration between bilateral agreements for the protection of migratory birds in the Asia Pacific region, and possible amalgamation of these into a multilateral agreement for the entire Asian-Australasian region
8. Development of multilateral agreements for the conservation of migratory raptors, especially in the Americas and Western Eurasia/Africa
9. Greater emphasis on conservation of migratory species at the population-level
10. Research on migratory birds that are inadequately protected throughout large parts of their non-breeding ranges
11. Further research on seabirds wintering along the edge of the pack ice
12. Assess the impacts of climate change on Arctic migratory birds
13. Assess pressures on Arctic migratory birds outside the Arctic
14. Establish an Expert Group on Migratory Species within the CAFF Program

## **ANNEX II: Additional information on the International Waterbird Census (IWC)**

The IWC launched in 1967 is the longest running, most extensive and harmonised (waterbird) monitoring programme in the world. Its development, at that time was regionally restricted and not global, reflecting growing concern about the ongoing loss of wetlands and waterbird populations. There was a lack of knowledge about breeding populations in breeding areas are largely situated in the arctic, sub-arctic and boreal areas of the former USSR because of the political situation. The large amount of data collected by Russian ornithologists was in most cases not accessible because of language problems, restricted distribution of Russian publication and few contacts with Russian scientists. The IWRB (one of the founding institutions of WI) facilitated in the best way possible and opened up much exchange of information, improved existing contacts and established new contacts.

Censusing the main wintering areas was considered to be the best way of collecting population data, measuring population level fluctuations and analysing trends as long as these were organised at regular intervals and over the long term.

While the IWC originally covered mainly Europe, Middle East/Southwest Asia and northern Africa, it has since expanded to most of Asia, Africa and the Neotropics. The census should operate at a global level, but is, at present, divided into four separate regional surveys without full global coverage. The census effectively covers the major non-breeding ranges of arctic breeding waterbirds.

- The Wetlands International office in Wageningen compiles the counts of the Western Palearctic and Southwest Asia.
- The African Waterbird Census is co-ordinated from a sub-regional office in Dakar, Senegal, which began operating in 1998.
- The Asian Waterbird Census which began in 1987 and which includes Australasia, is co-ordinated from the office in Kuala Lumpur, Malaysia.
- In the Americas, the Neotropical Waterbird Census is co-ordinated from the Americas office of Wetlands International in Buenos Aires, Argentina.

Waterbird Censuses in North America are well co-ordinated by the USFWS and CWS as well as within the framework of the North American Waterfowl Management Plan. Improved links between these frameworks and the extensive North American waterbird surveys will encourage greater information exchange.

The results of the IWC are stored in databases, managed and maintained by staff in Wageningen, Kuala Lumpur, Dakar, and Buenos Aires. These databases are being centralized into a single global system which will be linked to the Ramsar Site Database operated by WI on behalf of the Ramsar Convention.