



*AGREEMENT ON THE CONSERVATION OF
AFRICAN-EURASIAN MIGRATORY WATERBIRDS*

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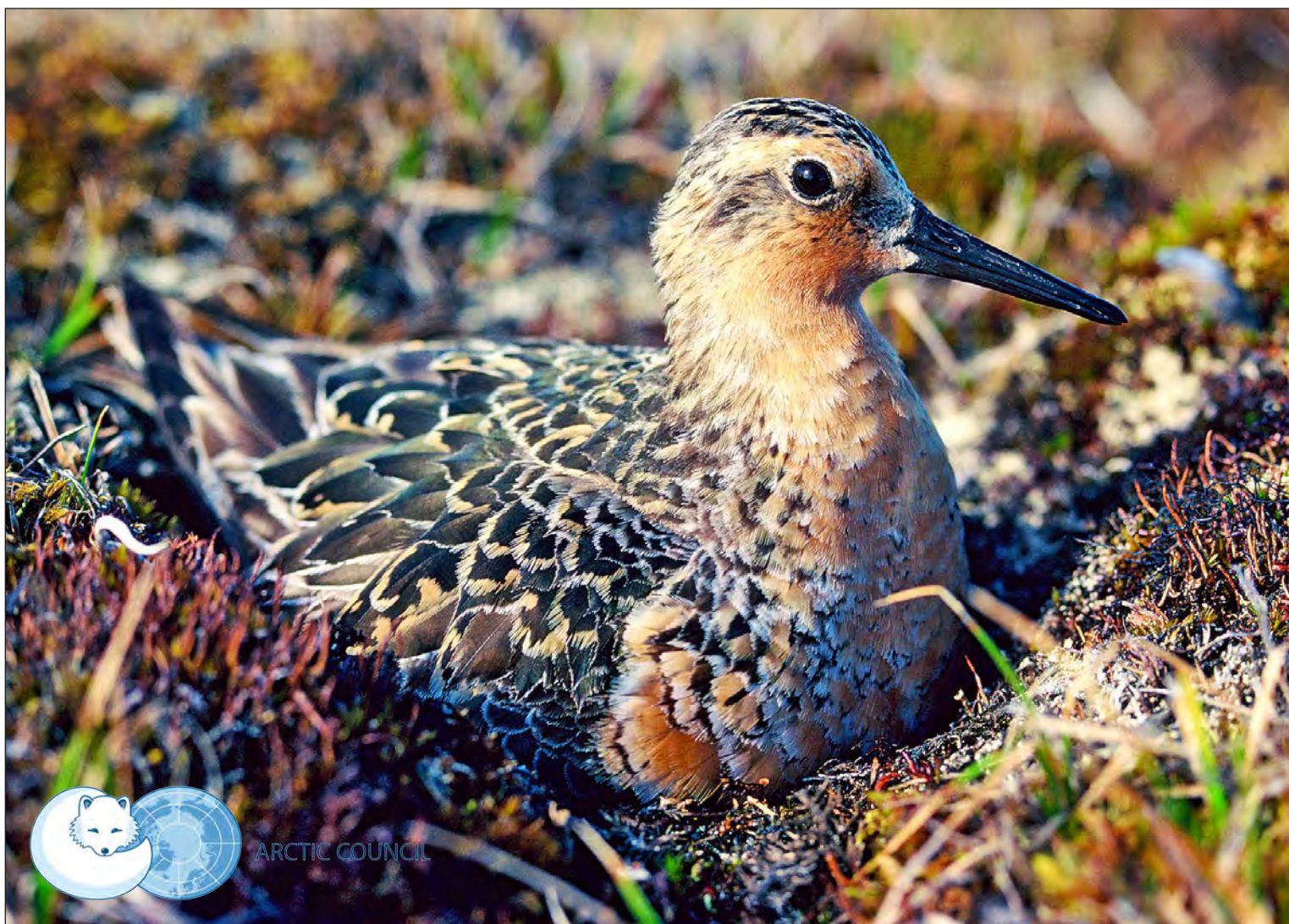
“Making flyway conservation happen”

Arctic Migratory Birds Initiative (AMBI) Workplan 2015 - 2019

The Arctic Migratory Birds Initiative

CAFF Strategy Series Report No. 6
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Workplan 2015-2019



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- Norwegian Environment Agency, Trondheim, Norway
- Environment Canada, Ottawa, Canada
- Faroese Museum of Natural History, Tórshavn, Faroe Islands (Kingdom of Denmark)
- Finnish Ministry of the Environment, Helsinki, Finland
- Icelandic Institute of Natural History, Reykjavik, Iceland
- Ministry of Foreign Affairs, Greenland
- Russian Federation Ministry of Natural Resources, Moscow, Russia
- Swedish Environmental Protection Agency, Stockholm, Sweden
- United States Department of the Interior, Fish and Wildlife Service, Anchorage, Alaska

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- Arctic Athabaskan Council (AAC)
- Gwich'in Council International (GCI)
- Inuit Circumpolar Council (ICC) – Greenland, Alaska and Canada
- Russian Indigenous Peoples of the North (RAIPON)
- Saami Council

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The

Arctic Migratory

Birds Initiative



Arctic Migratory Birds Initiative



Photo: Morten Ekke

Arctic Migratory Birds Initiative (AMBI): Introduction and Context

The Arctic Migratory Birds Initiative (AMBI), administered by the Conservation of Arctic Flora and Fauna (CAFF) working group, is a priority project of the Canadian Chairmanship of the Arctic Council. AMBI is designed to improve the conservation status and secure the long-term sustainability of declining Arctic breeding migratory bird populations. Through conservation of a shared natural and cultural resource, AMBI will have a positive impact on societies for whom migratory birds are a source of livelihood and spiritual inspiration. AMBI also provides an early implementation of Recommendation #8 of the Arctic Biodiversity Assessment (<http://arcticbiodiversity.is/>) to 'reduce stressors on migratory species range-wide, including habitat degradation and overharvesting on wintering and staging areas and along flyways and other migration routes'.

AMBI has, through a series of workshops, brought together experts in Arctic migratory bird species and conservation issues from across the globe. These experts identified three major conservation issues facing Arctic migratory birds— habitat loss and degradation, especially of intertidal areas; unsustainable harvest; and marine bycatch. The group also identified priority species (see Annex 1).

A steering committee comprising CAFF members Canada, Russia, Norway, and the United States, along with expert advisors from BirdLife International, was formed to guide the development and implementation of AMBI work plans.

Work plans to identify priority actions to address these issues in each of the four main flyways of the world were developed:

- ▶ East Asian-Australasian Flyway;
- ▶ African-Eurasian Flyway;
- ▶ Americas Flyway;
- ▶ A newly-defined Circumpolar Flyway, which addresses species that spend their entire life cycles in or near the Arctic.

Draft plans were developed by the appropriate steering committee member, along with other willing experts who were deemed instrumental to plan development and implementation. A multi-sectoral consultation on the draft plans was held during the Arctic Biodiversity Congress (Norway, December 2-4, 2014). A final workshop was held adjacent to the Congress to complete the workplans.

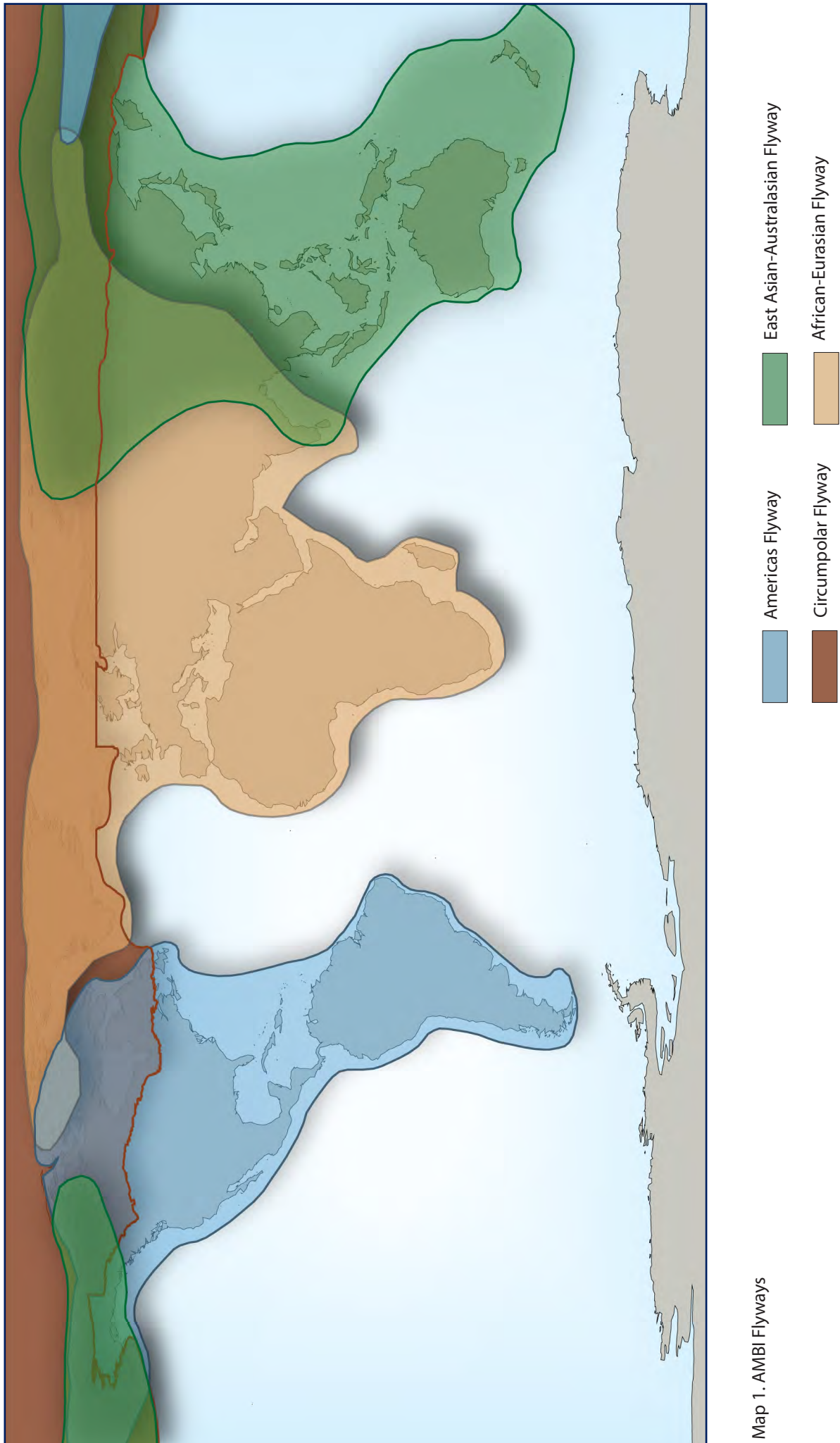
Individual flyway plans are meant to stand alone, so each has a short context-setting section at the front, followed by flyway-specific issues, objectives, and actions.

Links to other initiatives

In 2013, the Arctic environment ministers emphasized that Arctic biodiversity and ecosystems are irreplaceable assets of local regional and global importance and that decisive actions should be taken to help protect biodiversity and sustain valuable ecosystem services. Some migratory birds are rapidly diminishing in numbers and ministers underlined the need for improved cooperation to identify the driving forces for this development and to identify possible joint action.

Implementation of the AMBI workplan will help governments meet these and other commitments under Multilateral Environmental Agreements (MEAs) at global and hemispheric levels. Relevant global agreements are listed below; hemispheric and regional agreements are identified within individual flyway work plans. CAFF has Resolutions of Cooperation with several MEAs and works with the NGOs below, which will make it easier to work collaboratively on AMBI.

AMBI is designed to build on and support existing international, regional and local bird conservation initiatives such as BirdLife International, who have the on-the-ground capacity to make concrete progress for Arctic migratory bird conservation.



Map 1. AMBI Flyways

BirdLife International

BirdLife (<http://www.birdlife.org/worldwide/partnership/about-birdlife>) is widely recognised as a world leader in bird conservation. It is a collection of more than 150 partner organizations from around the globe. Each BirdLife Partner is an independent non-governmental organisation.

The BirdLife partnership has six Regional BirdLife Coordination Offices throughout the world and a Global Office in Cambridge, UK – together known as “The BirdLife International Secretariat”. The Secretariat co-ordinates and facilitates BirdLife International strategies, programmes and policies.

BirdLife’s program objectives are congruent with those of AMBI and include:

- ▶ Prevent extinctions
- ▶ Keep common birds common
- ▶ Identify, conserve, restore and monitor the sites and habitats important for birds and other biodiversity
- ▶ Promote resilient ecological networks
- ▶ Promote policies that support sustainability
- ▶ Promote local conservation action

BirdLife is an active participant in AMBI, particularly in the East Asian-Australasian Flyway and the African-Eurasian Flyway.

Convention on Biological Diversity

The Convention on Biological Diversity (www.cbd.int) is an international treaty with three main goals: conservation of biological diversity (or biodiversity); sustainable use of its components; and fair and equitable sharing of benefits arising from genetic resources. Its objective is to develop national strategies for the conservation and sustainable use of biological diversity. The Convention was opened for signature at the Earth Summit in Rio de Janeiro on 5 June 1992 and entered into force on 29 December 1993.

Of particular relevance to AMBI are the **Aichi Biodiversity Targets 11 and 12** of the **Convention on Biological Diversity’s (CBD) Strategic Plan 2011-2020**, which commit countries to prevent extinction of threatened species and increase the overall area and improve the quality of terrestrial, coastal and marine habitats in protected areas, as well other effective area-based conservation measures, integrated into the wider landscapes and seascapes. The CBD’s lead partner regarding the conservation and sustainable use of migratory species is the Convention on Migratory Species (CMS).

Convention on Migratory Species

The Convention on the Conservation of Migratory Species of Wild Animals (also known as CMS or Bonn Convention; www.cms.int) aims to conserve terrestrial, aquatic and avian migratory species throughout their range. It is an intergovernmental treaty that came into force on 1 November 1983. Migratory species threatened with extinction are listed on Appendix I of the Convention. CMS Parties strive towards strict protection of listed species, conserving or restoring the places where they live, mitigating obstacles to migration and controlling other factors that might endanger them. Besides establishing obligations for each State joining the Convention, CMS promotes conservation action among the Range States of many of these species. Migratory species that need or would significantly benefit from international co-operation are listed in Appendix II of the Convention. For this reason, the Convention encourages the Range States to conclude global or regional Agreements.

The CMS has developed a **Strategic Plan for Migratory Species for 2015-2023**, based on the Aichi Biodiversity Targets, which has five strategic goals that all closely align with AMBI:

- ▶ Goal 1: Address the underlying causes of decline of migratory species by mainstreaming relevant conservation and sustainable use priorities across government and society
- ▶ Goal 2: Reduce the direct pressures on migratory species and their habitats
- ▶ Goal 3: Improve the conservation status of migratory species and the ecological connectivity and resilience of their habitats
- ▶ Goal 4: Enhance the benefits to all from the favorable conservation status of migratory species
- ▶ Goal 5: Enhance implementation through participatory planning, knowledge management and capacity building

To facilitate delivering major parts of this Strategic Plan, at the 11th Conference of the Parties to CMS (Quito, Ecuador, Nov 2014) Parties adopted a **Programme of Work (POW) on Migratory Birds and Flyways 2014-2023**. The POW brings together for the world’s flyways all the major actions required to promote the conservation of migratory birds and their habitats. The POW focuses on the migratory birds rather than on CMS itself, in keeping with the aim of the Strategic Plan for Migratory Species, its goals and targets. The POW also aims to encourage cooperation and streamlining of actions as well to avoid unnecessary duplication with existing thematic work programmes and other ongoing/planned initiatives within and outside of the CMS family.

The **African-Eurasian Migratory Waterbird Agreement (AEWA)** is a regional agreement under the CMS that will be a key implementation vehicle for AMBI. The POW specifically acknowledges the tripartite CAFF/CMS/AEWA joint work plan 2013-2015 to encourage information sharing and cooperation with non-Arctic countries on migratory bird conservation issues. Furthermore, the POW requests that the CMS Secretariat strengthen links with the Secretariat of the Arctic Council's Working Group on the Conservation of Arctic Flora and Fauna (CAFF), in the framework of the existing Resolution of Cooperation, especially to ensure that CAFF's Arctic Migratory Bird Initiative has maximum synergies with the POW to capitalize on the flyway approach in gaining global support for the conservation of the Arctic environment.

Ramsar

The Convention on Wetlands of International Importance Especially as Waterfowl Habitat, known as the Ramsar Convention (www.ramsar.org), is an intergovernmental treaty that provides a framework for national action and international cooperation for the conservation and wise use of wetlands and their resources. The Convention's mission is "the conservation and wise use of all wetlands through local and national actions and international cooperation, as a contribution towards achieving sustainable development throughout the world".

Under the "three pillars" of the Convention, the Contracting Parties commit to:

1. Work towards the wise use of all their wetlands;
2. Designate suitable wetlands for the list of Wetlands of International Importance (the "Ramsar List") and ensure their effective management;
3. Cooperate internationally on transboundary wetlands, shared wetland systems and shared species.

By setting international standards for wetland conservation and providing a forum for discussing global wetland issues, the Convention enables Contracting Parties to share information on wetlands and address issues together. Groups of Contracting Parties with a common geographical focus or goal can also work together as "**Regional Initiatives operating within the framework of the Ramsar Convention**". Ramsar's 15 Regional Initiatives are divided into 11 networks for cooperation and 4 training centres. Regional networks provide a platform for collaboration between governments, technical experts, international NGOs, local communities and private companies. Training centres promote scientific and technical cooperation and exchange of knowledge in the region. Regional Initiatives are driven by Ramsar Administrative Authorities responsible for implementing the Convention in their countries.

At the Ramsar Convention's 10th Conference of the Parties held in 2008, parties adopted Resolution X.22 "Promoting international cooperation for the conservation of waterbird flyways" that "Strongly encourages Contracting Parties and other governments actively to support and participate in relevant international plans and programmes for the conservation of shared migratory waterbirds and their habitats" and "Urges the governing bodies of flyway initiatives to take steps to share knowledge and expertise on best practices in the development and implementation of flyway-scale waterbird conservation policies and practices, including successful means of disseminating critical supporting data and information to stakeholders and others".

World Heritage Convention

The UNESCO Convention Concerning the Protection of the World Cultural and Natural Heritage (the World Heritage Convention; <http://whc.unesco.org/en/convention>) was adopted by the General Conference of UNESCO on 16 November 1972. The Convention recognizes the way in which people interact with nature, and the fundamental need to preserve the balance between the two. Its most significant feature is that it links together in a single document the concepts of nature conservation and the preservation of cultural properties.

The Convention sets out the duties of States Parties in identifying potential World Heritage sites and their role in protecting and preserving them. By signing the Convention, each country pledges to conserve not only the World Heritage sites situated on its territory, but also to protect its national heritage. The States Parties are encouraged to integrate the protection of the cultural and natural heritage into regional planning programmes, set up staff and services at their sites, undertake scientific and technical conservation research and adopt measures which give this heritage a function in the day-to-day life of the community.



Photo: Morten Ekker

AMBI Flyway workplans

Each workplan identifies one or more of the three priority conservation issues identified at the Montreal meeting to address the conservation needs of selected focal species. Actions proposed by AMBI are designed to bring added value to ongoing conservation programs, or to address issues that are currently underrepresented. It is important to note that while the plans address certain issues and focal species, AMBI generally is interested in conservation of all Arctic-breeding migratory bird species, and in future the species and issues foci may change as needed to address new or worsening conservation concerns. Indeed, AMBI may take advantage of unexpected opportunities to advance Arctic bird conservation, should they arise.

Workplan action items anticipate that the following types of activities will be required by some or all CAFF countries, the CAFF management board, or the CAFF secretariat in order to achieve some of the plan's objectives;

- ▶ **Profile raising** through diplomatic and other state-level interventions by the Arctic Councils' Senior Arctic Officials. As a multi-nation body with Observer countries along the flyways, the Council is in a position to advance AMBI's objectives within countries' Foreign Affairs departments as well as their Environment departments and in some cases Development Aid departments.
- ▶ **Fund-raising** to enable on-the-ground conservation organizations to undertake actions in cooperation with relevant countries. The work plans will be used as fund-raising tools to enable on-the-ground conservation and education work to occur.
- ▶ **Capacity-building** through exchanges of experience and knowledge. There are nations within and outside of the Arctic Council that have experience in bird conservation that can be shared with others along the flyways.
- ▶ **Conservation action** within Arctic Council member countries. The workplans can direct work in the Arctic itself where member countries have jurisdiction.

Implementation, monitoring and evaluation

The workplans are the final outputs of AMBI at the end of the Canadian Chairmanship of both CAFF and the Arctic Council (April 2015).

By summer 2015, action items will be further developed to a greater level of detail, with task identification, resource requirements, timelines, and detailed evaluation measures described.

Another important task to be completed by the fall of 2015 will be to have a robust evaluation methodology in place for AMBI, to be used at the end of current workplan timeline (year 4).

Implementation will be phased over the next four years (2015-2019), depending on the action. A midpoint review of implementation of each workplan will be undertaken at the end of 2017, which coincides with the end of Norway's chairmanship of CAFF, and the end of the United States' chairmanship of the Arctic Council. Adjustments made to enable a) completion of certain actions by the end of year 4; or b) to recognize that certain actions will not be achieved within the timeline. A final evaluation of both individual flyway plans and the overall AMBI project will be undertaken in 2019. This timing also prepares countries to report on progress to achieving Aichi targets, as accomplished through the AMBI, in 2020.

At both the mid-point (2017) and end (2019) of this AMBI workplan, reports will also go to the Arctic Council Ministerial meetings, as part of CAFF's biennial reporting on implementation of the Arctic Biodiversity Assessment recommendations.



Annex 1. Priority species for AMBI conservation efforts

Priority species for AMBI conservation efforts, as identified at the inaugural AMBI meeting of experts in Montreal, February 2013. Note that species were further prioritized at later meetings; therefore, not all species in this table are addressed in flyway action plans.

*notes species that are priorities for this work plan.

Flyway	Species	IUCN ¹	CMS ²	AEWA Action Plan ³
East Asian-Australasian	Bar-tailed godwit* (<i>Limosa lapponica baueri</i> and <i>mensbeiri</i>)	LC	App II	n/a
	Dunlin* (<i>Calidris alpina arctica</i>)	LC	App II	n/a
	Great Knot* (<i>Calidris tenuirostris</i>)	VU	App I	n/a
	Red Knot* (<i>Calidris canutus rogersi</i> and <i>piersmai</i>)	LC	App II	n/a
	Spoon-billed Sandpiper* (<i>Eurynorhynchus pygmeus</i>)	CR	App I	n/a
	Lesser White-fronted Goose* (<i>Anser erythropus</i>)	VU	App I	A 1a 1b 1c, 2
Americas (Pacific, Mississippi, Central and Atlantic flyways)	Buff-breasted Sandpiper (<i>Calidris subruficollis</i>)	NT	App I	n/a
	Red Knot* (<i>Calidris canutus rufa</i>)	LC	App I	n/a
	Red Knot (<i>Calidris canutus roselaari</i>)	LC	App II	n/a
	Semipalmated Sandpiper* (<i>Calidris pusilla</i>)	NT	App I	n/a
	Hudsonian Godwit (<i>Limosa haemastica</i>)	LC	App II	n/a
Central Pacific	Bristle-thighed Curlew (<i>Numenius tahitensis</i>)	VU	App I	n/a
African-Eurasian (East Atlantic, Mediterranean/Black Sea flyways)	Black-tailed Godwit* (<i>Limosa limosa islandica</i>)	NT	App II	A 4
	Bar-tailed Godwit* (<i>Limosa lapponica taymyrensis</i>)	LC	App II	B 2a 2c
	Broad-billed Sandpiper (<i>Limicola falcinellus</i>)	LC	App II	A 3c
	Dunlin* (<i>Calidris alpina arctica</i> and <i>schinzii</i>)	LC	App II	A 1c, 2, 3a
	Red Knot* (<i>Calidris canutus canutus</i> and <i>islandica</i>)	LC	App II	B 2a 2c
	Ruff (<i>Philomachus pugnax</i>)	LC	App II	B 2c
	Lesser White-fronted Goose* (<i>Anser erythropus</i>)	VU	App I	A1a 1b 1c, 2
Circumpolar (east-west migration within circumpolar Arctic)	Ivory Gull* (<i>Pagophila eburnea</i>)	NT		n/a
	Kittlitz's Murrelet (<i>Brachyramphus brevirostris</i>)	NT		n/a
	Thick-billed Murre* (<i>Uria lomvia</i>)	LC		B 2c
	Velvet Scoter (<i>Melanitta fusca</i>)	EN	App II	A 2a 2c
	Black Scoter (<i>Melanitta nigra</i>)	NT	App II	B 2a 2c
	Steller's Eider* (<i>Polysticta stelleri</i>)	EN	App I	A 1a 1b 2
	Common Eider* (<i>Somateria mollissima</i>)	LC	App II	B 1 2d
	Long-tailed Duck* (<i>Clangula hyemalis</i>)	VU	App II	B 2c
	Yellow-billed Loon (<i>Gavia Adamsii</i>) (except Iceland and Greenland)	NT	App II	A 1c
	Snowy Owl* (<i>Nyctea scandiaca</i>)	LC		n/a

¹ IUCN Red List Category: CR Critically Endangered, EN Endangered, VU Vulnerable, NT Near Threatened, LC Least Concern

² Convention on Migratory Species Appendices. Appendix I lists species for which Parties should endeavour to provide immediate protection; Appendix II lists species for which Parties should endeavour to conclude Agreements covering the conservation and management.

³ Listing from the Agreement on the Conservation of African-Eurasian Migratory Waterbirds, Table 1. Status of the population of migratory waterbirds in the Action Plan:

A1:

- a. Species, which are included in Appendix I to the Convention on the Conservation of Migratory species of Wild Animals;
- b. Species, which are listed as threatened on the IUCN Red list of Threatened Species, as reported in the most recent summary by BirdLife International; or
- c. Populations, which number less than around 10,000 individuals.

A2: Populations numbering between around 10,000 and around 25,000 individuals.

A3: Populations numbering between around 25,000 and around 100,000 individuals and considered to be at risk as a result of:

- a. Concentration onto a small number of sites at any stage of their annual cycle;
- b. Dependence on a habitat type, which is under severe threat;
- c. Showing significant long-term decline; or
- d. Showing large fluctuations in population size or trend.

A4: Species, which are listed as Near Threatened on the IUCN Red List of threatened species, as reported in the most recent summary by BirdLife International, but do not fulfil the conditions in respect of Category 1, 2 or 3, as described above, and which are pertinent for international action.

B1: Populations numbering between around 25,000 and around 100,000 individuals and which do not fulfil the conditions in respect of A, as described above.

B2: Populations numbering more than around 100,000 individuals and considered to be in need of special attention as a result of:

- a. Concentration onto a small number of sites at any stage of their annual cycle;
- b. Dependence on a habitat type, which is under severe threat;
- c. Showing significant long-term decline; or
- d. Showing large fluctuations in population size or trend.

East Asian Australasian Flyway priority species in this workplan



Bar-tailed Godwit (spp. *baueri* and *mensbeiri*)



Dunlin (spp. *arctica*)



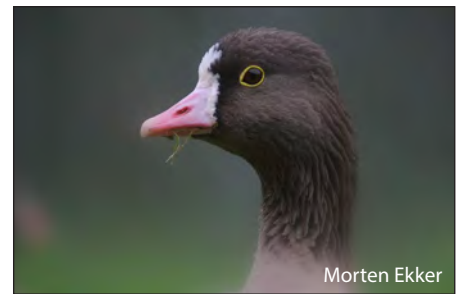
Great Knot



Red Knot (spp. *rogersi* and *piersmai*)

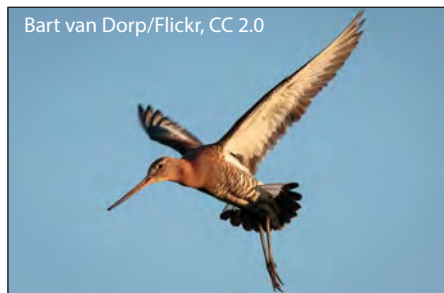


Spoon-billed Sandpiper



Lesser White-fronted Goose

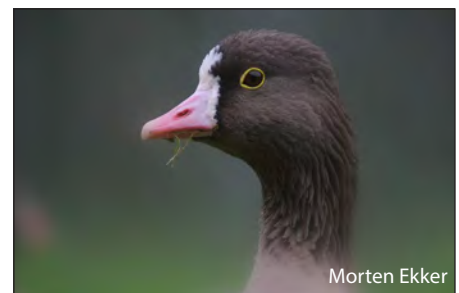
African Eurasian Flyway priority species in this workplan



Black-tailed Godwit



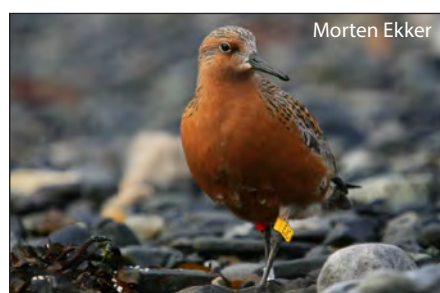
Bar-tailed Godwit (spp. *taymyrensis*)



Lesser White-fronted Goose



Dunlin (spp. *arctica* and *schinzii*)



Red Knot (spp. *canutus* and *islandica*)

Americas Flyway priority species in this workplan



Red Knot (spp. *rufa* and *roselaari*)

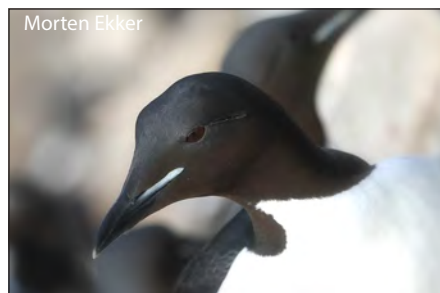


Semipalmated Sandpiper

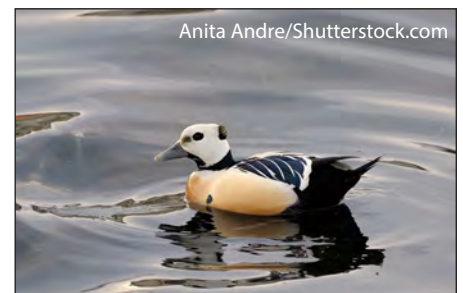
Circumpolar Flyway priority species in this workplan



Ivory Gull



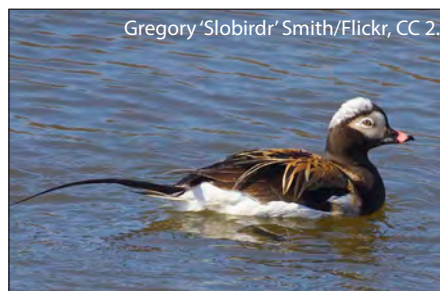
Thick-billed Murre



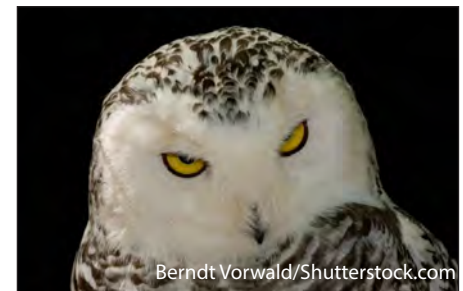
Steller's Eider



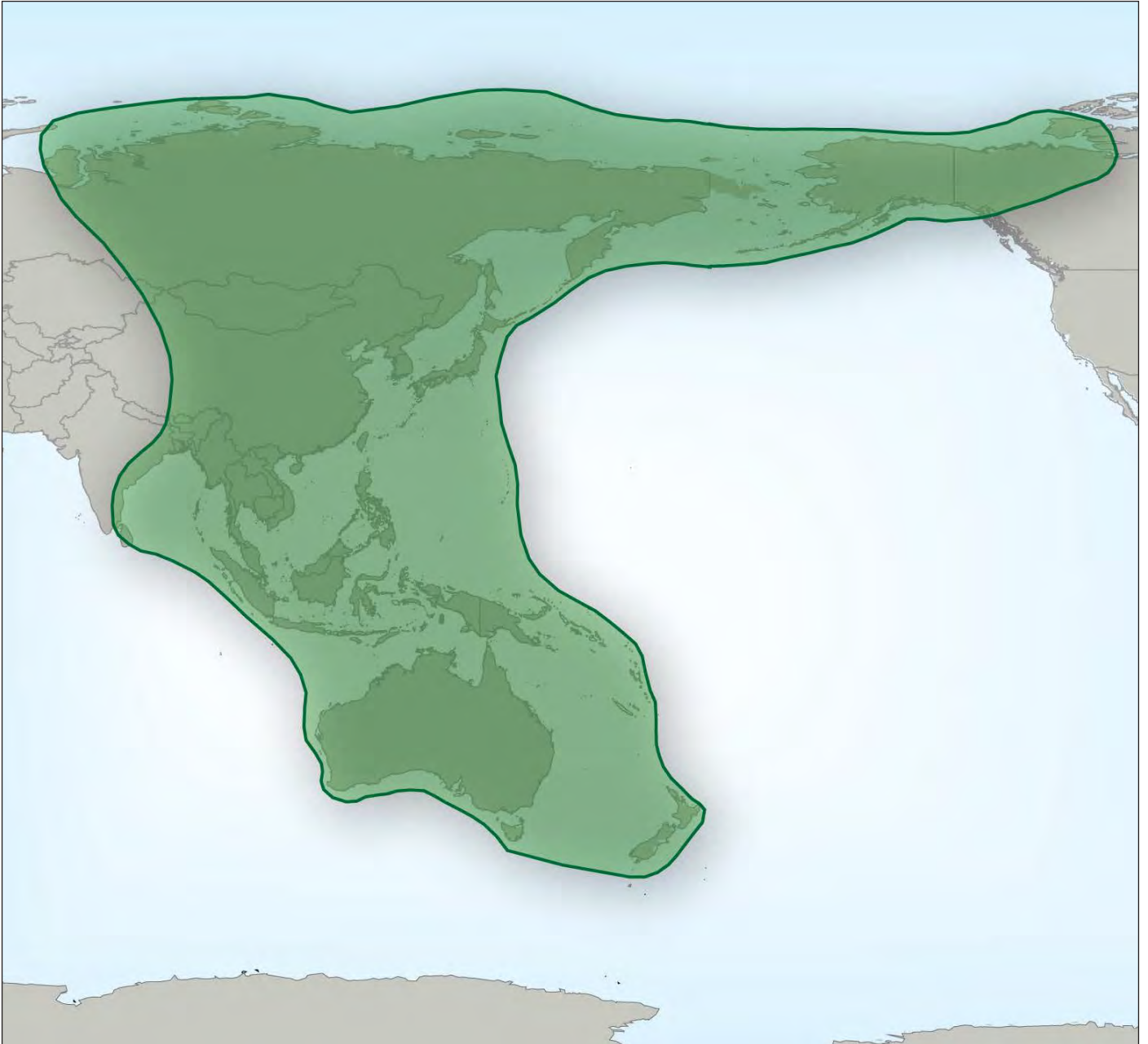
Common Eider



Long-tailed Duck



Snowy Owl



Map 2. East Asian-Australasian Flyway

Arctic Migratory Birds Initiative (AMBI): Workplan for the East Asian-Australasian Flyway

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The authors acknowledge the support and advice of many entities in the development of this plan, including many federal, regional and local representatives from East Asian Australasian Flyway (EAAF) countries; non-governmental organizations, and private individuals. The authors welcome all interested parties to participate in the implementation and additions to this plan in the coming years.



Spoon-billed sandpiper. Photo: feathercollector/shutterstock.com

Introduction

The Arctic Migratory Birds Initiative (AMBI) is a project undertaken by the Arctic Council, through its Conservation of Arctic Flora and Fauna working group. AMBI's work is guided by a steering committee, composed of representatives from Canada, Russia, Norway, United States and BirdLife International.

AMBI's overall objective is to improve the conservation status and secure the long-term sustainability of declining Arctic-breeding migratory bird populations. The Arctic Council recognizes that much of the conservation action needed to meet this objective will occur outside of the Arctic. Therefore AMBI is organized around flyways that Arctic migratory birds traverse throughout their life cycles. These are the Circumpolar, African-Eurasian, Americas and East Asian-Australasian Flyways.

The East Asian-Australasian Flyway (EAAF) is a migratory corridor that stretches from the Russian Far East and Alaska, southwards through East Asia and Southeast Asia, to Australia and New Zealand, encompassing 22 countries and supporting over 50 million migratory birds from over 250 populations, including 33 globally threatened and 30 near-threatened species.

This plan identifies objectives and actions to ensure the conservation of priority migratory bird species within the East Asian-Australasian Flyway, as identified at a global AMBI expert workshop in Montreal, Canada, in February 2014 (<http://www.caff.is/strategies-series/274-the-arctic-migratory-birds-initiative-expert-workshop-report-montreal-canada-feb>), and refined later in 2014 at meetings in Beijing, China in September in Trondheim, Norway, in December and in Kushiro, Japan in January 2015.

Besides the actions listed here, AMBI may take advantage of additional opportunities that arise to undertake strategic conservation actions within the EAAF on Arctic-breeding migratory birds of conservation concern or in areas not currently included in this work plan. Future phases of AMBI may have different focal species, depending on the success of the current plan and the urgency with which other species need to be considered in the future.

Priority Species, Areas and Issues

The underlying objective of all conservation activities related to Arctic migratory birds that use the EAAF is to ensure their recovery and survival in perpetuity. This will require extensive collaboration and cooperation among EAAF partners, including with Russia and the United States providing a leading role, but also with the involvement of other Arctic countries (e.g., Norway and Denmark), EAAF observer countries to the Arctic Council (China, Republic of Korea, Japan, Singapore and India) and other Arctic Council observer countries bordering the Wadden Sea, North Sea, Baltic Sea and Mediterranean Sea (Netherlands, Germany, United Kingdom, Poland, France, Italy and Spain).

AMBI EAAF subcommittee representatives initially identified the following five priority Arctic shorebird species for conservation: Spoon-billed Sandpiper, Great Knot, Red Knot, Bar-tailed Godwit and Dunlin, plus Lesser White-fronted Goose (more information in Annex 1). Numerous co-occurring species, both resident and migratory, will also benefit from the conservation actions proposed for the priority species mentioned above.

Representatives also identified three priority conservation issues:

- ▶ To identify and protect key breeding and staging areas within Arctic Russia and the United States.
- ▶ To protect and sustainably manage intertidal habitats, especially at migration staging sites in the Yellow and East China seas of China and South Republic of Korea, and wintering areas in south-east Asian countries.
- ▶ To prevent the illegal killing and regulate the unsustainable legal harvest of migratory birds along the flyway.

Indigenous knowledge is a fundamental element in successful cooperative management of wildlife. Engagement with co-management structures and communities will be pursued to ensure indigenous knowledge is appropriately used.

Objectives and Actions

Migratory bird issues transcend habitats, countries, and cultures, as do conservation solutions. AMBI recognizes that coordinated action between countries, communities, and individual stakeholders is key to success of the initiative.

Objective 1. Secure important breeding and staging habitats of key AMBI-EAAF migratory bird species in Arctic Russia and Alaska, with a focus on Spoon-billed Sandpiper, Bar-tailed Godwit and Dunlin.

Although the Russian and Alaskan Arctic is relatively pristine compared to most regions of the EAAF, a number of areas of particular importance for breeding or staging of key priority species need to be effectively protected. These important sites need to be identified and recognized through international, national, or regional frameworks. To assist in this, there is a need for sharing of expertise, between Russia (especially in the Beringia breeding areas) and United States and with other CAFF countries, about methodologies for surveying bird distribution, monitoring population size and trends, conducting demographic studies and managing habitats of migratory birds.

Russia

Action 1 Improve conservation work on Spoon-billed Sandpiper in the breeding grounds.

- a. Identify and protect known Spoon-billed Sandpiper breeding habitat, including creation of a network of protected areas in Southern Chukotka at key breeding locations;
- b. Survey potential but previously unsurveyed breeding sites in Chukotka and revisit sites not surveyed for more than ten years to update the status of the species at particular locations and develop local conservation plans;
- c. Ensure priority conservation measures in the Arctic are taken, including continuous support of the Spoon-billed Sandpiper 'head-start' program in Meinypilgyno as the most efficient tool to increase breeding productivity.
- d. Improve knowledge on breeding distribution, population productivity and local threats to Bar-tailed Godwit and Dunlin, as well as Red and Great Knots in the Eastern Russian Arctic, to provide necessary information for improvement of conservation measures.

Action 2 Identify important staging areas in coastal areas of Russia for priority species, and where possible encourage and assist their nomination as EAAF Partnership Network Sites with follow-up conservation actions.

United States

Action 3 Encourage and assist in the nomination for the EAAF Partnership Flyway Site Network of important breeding and staging areas used by priority species in Alaska as part of the EAAF Partnership Flyway Site Network.

- a. Undertake bird surveys to improve knowledge of important breeding and staging sites for priority species in Alaska.

Russia/United States

Action 4 Share experience and methodologies for surveying shorebird distribution, monitoring population size and trends, conducting demographic studies, and managing habitats of priority species and other migratory birds.

- a. Share experiences associated with monitoring and conserving breeding shorebirds in the Beringia area via cooperation projects and exchange visits between Russian and United States specialists, with an initial focus on existing field stations studying Spoon-billed Sandpipers in Chukotka and Dunlin at Barrow.
- b. With the assistance of Russian experts on Spoon-billed Sandpipers, survey potential breeding areas for this species in western Alaska.
- c. Prepare manuals and conduct training courses and exchange visits related to the monitoring of goose populations (e.g., developing aerial survey methods using experience of United States Fish and Wildlife Service) and managing of their habitats on the breeding and non-breeding grounds within Russia.

Objective 2. Secure intertidal and associated habitat for Arctic waders at key staging and wintering sites in the EAAF.

The loss and degradation of habitat along the flyway is the focal conservation issue for this work plan, especially at the critical staging sites provided for most priority species by the intertidal areas of the Yellow Sea. The threats are numerous and include coastal development, declining river flows, invasive alien *Spartina* grass, unsustainable shellfisheries and high levels of pollution leading to reduced benthic productivity and declining food supplies for shorebirds, sea level rise, and impairment of key sites through human-induced disturbance.

Indeed, reclamation of coastal wetlands of the Yellow Sea is occurring at a rate unprecedented elsewhere in the world. As well as compromising the continued provision of valuable ecosystem services, it is driving one of the two major extinction crises facing the world's migratory birds (the other affecting albatrosses and petrels). This is because many Arctic-breeding migratory waterbirds, including the five AMBI EAAF priority shorebird species, depend on these habitats for refuelling on their long migrations between breeding and wintering areas.

Russia

Action 1 Ensure protection of northwest Sakhalin and West Kamchatka coast, notably intertidal areas.

- a. Undertake surveys of intertidal areas and develop habitat maps particularly in the areas of ongoing and planned mineral resource development.
- b. Undertake surveys of key shorebird concentrations during passage seasons and develop conservation plans for key areas.
- c. Raise awareness of the conservation importance of key sites and mobilize local conservation activities to protect habitat.
- d. Initiate cooperation with administrations of coastal regions within the Far East of the Russian Federation (Chukotskiy Autonomous District, Sakhalin Oblast', Kamchatskiy and Khabrovskiy Kray) on conservation of migratory birds and environmental education.

United States

Action 2 Gather better information on spring and fall staging sites and requirements of Dunlin and Bar-tailed Godwits along western Yukon-Kuskokwim Delta, coastal Bristol Bay, and northern side of Alaska Peninsula.

China

Action 3 Ensure protection of Jiangsu Coast ecosystem, especially the Rudong and Dongtai areas, for Spoon-billed Sandpiper and other Arctic shorebirds.

- a. Ensure the protection of all sites important for Spoon-billed Sandpiper, including designating and effectively protecting and managing national nature reserves or similar level protected areas, including seeking World Heritage Site status, over a sufficient extent of key staging habitat to sustain populations of Spoon-billed Sandpiper and other Arctic waterbirds.
- b. Through work with National and subnational governments, achieve the stopping or modification of intertidal reclamation plans in Jiangsu province to minimize disturbance to populations of Arctic-breeding waterbirds, in particular the revision of plans for the Tiaozini Reclamation project to exclude Spoon-billed Sandpiper habitat from development.
- c. Undertake public awareness raising and develop local and national pride in migratory stopover and wintering sites including support for an annual Spoon-billed Sandpiper Festival coordinated by local government and non-government organizations.
- d. Support the conservation of intertidal flats and bird species by 1) developing business partnership agreements with local entrepreneurs to promote ecotourism that supports protected area establishment and management; such ecotourism might include attractive information centres that are tourism attractions in their own right and provide environmental education, 2) promoting ecological certification of the shellfish industry.
- e. Explore the feasibility of restoring intertidal flats and associated habitats, including through *Spartina* control, to help sustain migratory bird populations and restore ecosystem services.

Action 4 Ensure protection of Luannan Coast especially Nanbao, Tanshan for Red Knot and other Arctic shorebirds

- a. Secure protected area status and effective management of remaining intertidal habitat and associated wetland. ecosystems and demonstrate optimised management for Arctic shorebirds of a complex of intertidal, fish/shrimp ponds and salt works in line with the principles of eco-civilization.
- b. Cooperate with China's National Bird Banding Center (NBBC) or others to start work toward establishing a Hemispheric Coastal Environment Observatory for Migration Studies at Nanbao linked to the Field Studies Centre being developed by Wetlands International further inland and with Broome Bird Observatory in Australia.
- c. Develop ecotourism and public awareness raising activities to promote local and national pride in the global importance of Nanbao.

Action 5 Ensure protection at Yalu Jiang, Liaoning for Bar-tailed Godwit, Dunlin, Great Knot and other Arctic shorebirds.

- a. At Yalu Jiang NNR, support development and implementation of a management plan to halt further loss of intertidal area and conserve and restore habitat for feeding and roosting.
- b. Support public awareness raising activities to highlight the global importance of the site and develop local and national pride and ownership.
- c. Share positive experiences between festival organizers at Yalu Jiang and other important areas, such as Alaska and New Zealand as a way of building support for conservation at these sites.

Republic of Korea

All of Republic of Korea's remaining intertidal areas are under threat from rapid urban and infrastructure development. Actions are needed to promote the role and importance of intertidal areas as a globally shared natural heritage supporting migratory waterbirds and local communities.

Community-based awareness and citizen science initiatives have been developed at one or two intertidal areas in South Republic of Korea (e.g., through the BirdLife International-Rio Tinto Geum Estuary Conservation Project and the World Wildlife Fund Yellow Sea Ecoregion project). Further, a second phase of the UNDP/GEF Yellow Sea Large Marine Ecosystem Project is about to start and AMBI could complement efforts under this project to promote sustainable shellfish production and conservation of intertidal habitats, as well as community-based awareness and involvement programs.

Action 6 Support conservation of the intertidal areas on the west coast of the Republic of Korea for the Spoon-billed Sandpiper, Great Knot, and Dunlin.

- a. Make efforts to apply best practices and knowledge on coastal conservation, including technical cooperation and scientific exchange with other comparable regions.
- b. Promote and support the conservation and restoration schemes of coastal wetlands, for example, showing global leadership in building a "Caring for Coasts" Initiative under the CBD and Ramsar Convention, fostering intertidal conservation programs at the appropriate government institutions and building a partnership among interested parties including local communities.
- c. Support designating the key habitats as special sites that are afforded more protection.
- d. Promote the importance of conserving Korea's remaining intertidal shorebird zones for the protection of Arctic-breeding and other migratory waterbirds.

All Countries**Action 7 Coordinate implementation of actions related to the conservation of intertidal habitats in the EAAF and support to secure more resources for the operation of the EAAFP Secretariat based in Republic of Korea. Details will be discussed with the CAFF secretariat in Iceland.**

Objective 3. Prevent illegal harvest and regulate unsustainable legal harvest of Arctic migratory birds, with a focus on Spoon-billed Sandpiper, Lesser White-fronted Goose, Bar-tailed Godwit, and other priority species.

A major threat to Arctic breeding species in the EAAF is the wide-scale, illegal harvest and sale of migratory birds at markets in many Asian countries. There is also a problem of poorly documented or managed harvests in Russia and the United States. Of particular concern is the harvest of the Critically Endangered Spoon-billed Sandpiper and Vulnerable Lesser White-fronted Geese, especially at key non-breeding sites along the coast of China and South-East Asia and breeding areas along the Russian coasts of Kamchatka, Sea of Okhotsk and Sakhalin. Presently, few if any national and regional strategies and action plans have been developed to monitor and regulate the level of illegal and legal harvest occurring throughout the flyway.

In Alaska, AMBI will work with the Alaska Migratory Bird Co-management Council (AMBCC) and other indigenous entities, where appropriate, to discuss issues and actions relative to subsistence harvest. Individual action items may involve the engagement of specific communities. For example, activities relating to the Bar-tailed Godwit could involve the Yup'ik community, as it is the primary group interacting with this species.

Russia

Action 1 Support development and implementation of national and regional strategies and action plans for elimination of illegal harvest of birds in Russia.

- a. Conduct surveys at key shorebird stopover sites in Eastern Siberia and the Far East to identify key concentrations of shorebirds and Lesser White-fronted Geese during north and southbound migration, and work with local/regional governments to develop protected areas and prepare conservation plans for such sites. Plans should include information on raising awareness of impacts of illegal harvest and methods to reduce and eventually eliminate it, especially in Sakhalin and West Kamchatka.
- b. Work with federal and regional legislators to reduce/close sport hunting of all migratory shorebirds and geese of unfavorable conservation status in Eastern Siberia and the Russian Far East.
- c. Improve knowledge of migratory routes and key areas of different shorebird and Lesser White-fronted goose populations through satellite tracking/data logger studies and color marking to assist identifying management units for decision making on population management.
- d. Update Russian National Red Data book with key declining Arctic migratory species of EAAF to be included in the new edition and initiate planning and implementation of regional activities for their conservation.

United States

Action 2 Conduct outreach, assess the magnitude and impacts of legal subsistence harvest on priority birds in Alaska, with a focus on Bar-tailed Godwits.

- a. Develop outreach materials on priority species that are harvested in the spring and summer subsistence harvest; materials should be in English and relevant native languages.
- b. Work with the Alaska Migratory Bird Co-management Council and the Yukon Delta National Wildlife Refuge Information Technicians and other relevant entities as appropriate, to begin a dialogue with rural Alaskans to discuss the status of priority species, and the role they play in regulating these populations.
- c. Assess the importance of priority species in the diet of rural Alaskans. This step should, where possible, assess the level of harvest occurring.
- d. Once reasonable estimates of harvest are documented, conduct population modeling to assess whether this level of take is impacting population sizes of priority species.
- e. Should levels of harvest be found to have a measureable impact on the priority species, work with
 - i. the Alaska Migratory Bird Co-management Council to promote a sustainable legal harvest of relevant species,
 - ii. Refuge Information Technicians to develop outreach programs to reduce level of harvest, and
 - iii. school administrators and teachers to develop class programs to educate students about impact of harvest;
- f. Share best experience with the Russian part of Beringia to assist in developing dialogue with local communities on sustainable hunting of shorebirds and improvement of management practices.

China

Action 3 Support development and implementation of national and regional strategies and action plans for elimination of illegal harvest of birds in China.

- a. Work with the Chinese government to ensure the highest level of national protection for the Critically Endangered Spoon-billed Sandpiper.

- b. Work with the local/regional governments to strengthen patrolling and law enforcement at all key coastal sites used by Spoon-billed Sandpiper, to conserve the population and to raise awareness of impacts of illegal harvest and develop methods to eliminate it, as part of overall conservation actions for the sites.
- c. Use satellite tracking and other means to identify key stopovers of Lesser White-fronted Goose and other Arctic geese, and work with national/regional governments and research institutions to develop monitoring techniques and implement conservation plans for such sites; plans should include actions to eliminate illegal harvest.
- d. Improve survey and monitoring efforts to increase the knowledge and distribution of priority species including Dunlin, Bar-tailed Godwits, and Great and Red Knots at stopover and wintering grounds to assess the level and mitigate illegal killing.
- e. Better understand and address the drivers behind the system of illegal trapping and marketing of wild birds.
- f. Support the development of regular monitoring and enforcement actions at key markets and restaurants focused on illegal wild birds in cooperation with SFA, regional governments, law enforcement organizations and Food Control Inspectors.
- g. Support the organization of national and regional workshops in China to address shorebird conservation and follow up actions on implementation, especially illegal hunting on the Dongtai/Rudong coasts of Jiangsu province.

Singapore/Southeast Asia

Action 4 Support Singapore in its aim to help develop capacity for management of wetland and migratory birds in the region.

- a. Explore the possibility of forming an Association of South-east Asian Nations (ASEAN) plus network of migratory bird sites.
- b. Support the preparation of case studies on migratory bird conservation and wetland management, as a way of raising awareness and sharing expertise around these important issues.

Action 5 Cooperate with Singapore on the development of wide-scale International dialog focused on the conservation of Arctic migratory birds in South-East Asia.

- a. Explore the opportunity of organizing in Singapore in 2016-17 an international conference/workshop migratory bird conservation.
- b. Encourage development of diplomatic dialog within ASEAN region to promote cooperation on the conservation of Arctic migratory birds and addressing of unsustainable use of their resources and their wetland habitats.

Japan

Action 6 Initiate a dialog to promote cooperation on the conservation of Arctic migratory birds on the EAAF with focus on selected priority actions identified within this Action plan, including conservation of Spoon-billed Sandpiper in Japan and on the flyway and building on existing bilateral migratory bird agreements.

India

Action 7 Initiate a dialog with India as Arctic Council observer with an aim to plan and implement actions to mitigate, reduce or eliminate illegal harvest of Arctic-migratory birds in India with priority actions on shorebird conservation in coastal areas.

All Countries

Action 8 To ensure implementation of actions on illegal killing and unsustainable harvest, raise funds to hire a full-time coordinator in the Singapore office of BirdLife-Asia whose responsibilities will be to:

- a. Coordinate with EAAF partners, NGOs and other federal and provincial leaders to raise funds through proposal writing and other means to address the illegal killing and unsustainable harvest issue.
- b. Ensure the preparation and publication of a comprehensive overview of the illegal killing and unsustainable harvest problems identified in the region.
- c. Support the preparation of case studies aimed at highlighting solutions to illegal harvest at demonstration sites, including raising awareness of the issue, conservation planning and alternative livelihood programs.

Action 9 Support cooperation of Secretariats of the EAAFP and the African-Eurasian Waterbird Agreements (see About AMBI African-Eurasian work plan for further details) to coordinate the work on Lesser White-fronted Goose conservation on East Asian Flyway via EAAFP Anatidae Working Group.

Annex 1. Species of special conservation concern

Spoon-billed Sandpiper (*Eurynorhynchus pygmeus*)



This is one of the most threatened shorebird species in the world and a key flagship bird for conservation of coastal birds in East Asia. During the past 30 years, the originally small population of this species has declined ca. 90% to ca. 100 breeding pairs, with ongoing declines occurring. It is recognized by IUCN as Critically Endangered and the Zoological Society of London listed it as one of the 100 most threatened living creatures on the Planet during the last World Conservation Congress in Republic of Korea in 2012.

No subspecies or separate geographic populations are recognized in this species; however some geographical segregation both on breeding and wintering grounds likely exists. All birds breed in Chukotka, Russia but those from the northern part winter in Bangladesh and Myanmar and those from the south winter in Thailand, Myanmar and probably China, Vietnam, Cambodia and Malaysia.

Spoon-billed Sandpipers migrate along the East Asian coastline stopping in small numbers in the Russian Far East, Japan, Republic of Korea and China. The most important known staging areas for the species during northbound and southbound migration are the one hundred kilometers of coast line in Rudong and Dongtai areas (including Tiaozini sandflats) in Jiangsu, China. This portion of the East Asian coast is also the only area where adult Spoon-billed Sandpipers are known to undergo a primary wing molt, making this area critically important for the survival of the species.

Main problems for the species include the reclamation of intertidal habitats in China and South East Asia and illegal hunting of the birds on the wintering grounds and during migration in China.

Red Knot (*Calidris canutus*)



Two subspecies of Red Knot (*piersmai* and *rogersi*) migrate along the EAAF and both breed in Russia; *piersmai* breeds in the New Siberian Islands and *rogersi* in Chukotka. On the non-breeding grounds, birds of these subspecies mix, but *rogersi* is likely most prevalent in New Zealand and Eastern Australia, while *piersmai* predominates in Western Australia.

Both subspecies are highly dependent on the Chinese part of the Yellow Sea, staging there on both northbound and southbound migrations. Two other important staging areas for *rogersi* during southbound migration are the western coast of the Sea of Okhotsk in Russia and the Gulf of Carpentaria in Australia. Presumably the same is true for *piersmai* as well.

The species has been declining at a rate of ca. 2% per year in recent decades. Nothing has changed significantly on the breeding and non-breeding grounds, while large scale changes (reclamation, pollution, and human disturbance) are present and increasing at the main staging area in the Yellow Sea.

Great Knot (*Calidris tenuirostris*)



Separate geographic populations are not known in this species. Between their alpine breeding grounds in Eastern Siberia and the main non-breeding grounds on the coasts of Australia, Great Knots migrate in long non-stop flights along

the East Asian-Australasian flyway using one or two staging areas on the way for refueling. Smaller numbers of Great Knots also overwinter in India and the Persian Gulf which they likely access after traveling around southeastern Asia. The Republic of Korea and Chinese coasts of the Yellow Sea host the most important staging area for migrant Great Knots.

The population decline is estimated at ca. 2–2.5% per year in recent decades. IUCN considers the Great Knot as a vulnerable species. Reclamation of tidal areas both in Republic of Korea and China are considered the main reason for the decline.

Bar-tailed Godwit (*Limosa lapponica*)



Photo: Silvia Vaughan-Jones/shutterstock.com

Three Bar-tailed Godwit subspecies (*baueri*, *menzbieri* and *anadyrensis*) migrate through the EAAF. The *baueri* subspecies breeds in Alaska and migrates non-stop across the Pacific Ocean to winter in New Zealand. This subspecies uses distinct stopover sites in the Yellow Sea only on northbound migration, where virtually 100% of the birds stop to refuel. In contrast, the *menzbieri* subspecies breeds in Russia and stops in distinct locations in the Yellow Sea during both north and southbound migration to reach wintering areas in Australia. Very little is known about the very small population of the *anadyrensis* subspecies, which breeds in east-central Chukotka, Russia, and migrates to New Zealand staging in the Yellow Sea on the way.

This total dependence on the Yellow Sea as a refueling site makes all three subspecies particularly vulnerable to degradation of intertidal habitats. In addition the *menzbieri* subspecies experiences some level of illegal hunting in China and legal harvest in Russia, whereas the *baueri* subspecies experiences illegal hunting in parts of China and legal subsistence harvest in Alaska. The *baueri* and *menzbieri* subspecies are declining at an approximate rate of 2.9% and 7.3% per year. The breeding range of *anadyrensis* is shrinking in size although no exact figures available.

Dunlin (*Calidris alpina*)



Photo: shell game/Flickr, CC 2.0


Four Dunlin subspecies (*actites*, *arctica*, *sakhalina*, and *kistchinski*) migrate through and winter in the EAAF. All breed in Russia except for the *arctica* subspecies of northern Alaska, and all four migrate along the EAAF. Twenty-three staging sites of international importance have been identified to date (>1% of population), ten being important during both northbound and southbound migrations. Most sites are located in the Yellow Sea and most birds are thought to winter in China, with much smaller numbers in Taiwan, Japan, South Republic of Korea, and even smaller numbers in other Pacific Rim countries.

The major threats to Dunlin include loss or degradation of intertidal habitat due to reclamation and dam construction, illegal killing, pollution, and human disturbance on the staging areas in the Yellow Sea and the non-breeding regions in southern China, South Republic of Korea, Taiwan and Japan. It is a legal species to harvest in Alaska, and is a traditional subsistence harvest animal for indigenous people of Far Eastern Russia. The level of legal harvest in Alaska is likely low but might be quite substantial in parts of Russia.

The lack of easily identifiable morphological characters means that for all practical purposes the subspecies must be managed as one unit on the nonbreeding grounds despite the fact that the *actites* subspecies numbers less than 1000 and the remainder number over 500,000 each. The *arctica* and *sakhalina* subspecies are thought to be declining but little other information on trends is available for the other subspecies. In Japan, spring time counts of Dunlin, which may include several of the subspecies, have declined 4.8% per year over the last decade.



Map 3. Americas Flyway

 Key areas of interest for the AMBI Americas workplan

Arctic Migratory Birds Initiative (AMBI): Workplan for the Americas Flyway

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Contributors to the development of this workplan are listed in Annex 3.



Red knots resting on stop over site during their long migration. Photo: Peter Prokosch, UNEP GRID-Arendal

Introduction

The Arctic Migratory Birds Initiative (AMBI) is a project undertaken by the Arctic Council, through its Conservation of Arctic Flora and Fauna working group. The overall objective of AMBI is to improve the status and secure the long-term sustainability of declining Arctic breeding migratory bird populations. The Arctic Council recognizes that much of the conservation action needed to meet this objective will occur outside of the Arctic. Therefore AMBI is organized around flyways that Arctic migratory birds traverse throughout their life cycles.

AMBI's work is guided by a steering committee, and specific goals and actions are developed through flyway-specific workplans.

The AMBI Americas Flyway

This flyway hosts Arctic-breeding birds that winter within the Americas outside of the Arctic. It includes the Pacific, Central, Mississippi, and Atlantic flyways. AMBI is interested in conservation of all of the Arctic's migratory birds that move through this flyway. However, the first phase of AMBI, as represented in this workplan, focuses on priority species and issues that were identified at a global AMBI experts' workshop in Montreal (Canada) in February 2014 (<http://www.caff.is/strategies-series/274-the-arctic-migratory-birds-initiative-expert-workshop-report-montreal-canada-feb>), and were later refined at an experts workshop hosted by UNEP's Regional Office for North America in Washington D.C. (USA) in October 2014 and in Trondheim (Norway) in December 2014.

AMBI is designed to complement existing international and regional migratory bird conservation initiatives such as the WHSRN, the Atlantic Flyway Shorebird Initiative and the North American Bird Conservation Initiative (NABCI). Actions under these initiatives will be coordinated to ensure synergies and avoid duplication. A short description of these initiatives is in Annex 2.

Notwithstanding the focus of this workplan, AMBI may take advantage of opportunities that arise to undertake strategic conservation actions on priority species or in geographies that lie outside of this workplan, but that deal with Arctic-breeding migratory birds that have conservation concerns along the flyway.

Future phases of AMBI may have different focal species, depending on the success of the current plan and the urgency with which other species need to be considered in the future.

Priority species and conservation issues

Species

Red Knot (*Calidris canutus*) is a priority species for this plan. This is a circumpolar species that is exhibiting troubling declines in a number of its subspecies. The *rufa* is listed as Endangered in Argentina, Chile and Canada, and has recently been listed as Threatened under the Endangered Species Act in the United States. The subspecies *roselaari* is listed as Threatened in Canada and Mexico.

Semipalmated Sandpiper (*Calidris pusilla*) is the other priority species targeted by this workplan. This species, once one of the most common of the small sandpipers in the Americas, seems to have experienced widespread declines in at least the eastern portion of the hemisphere and likely in the central portion as well.

The Semipalmated Sandpiper and the *rufa* Red Knot are both listed on Appendix 1 of the Convention on the Conservation of Migratory Species of Wild Animals (CMS). This listing means that range states that are CMS Parties should undertake actions to protect and restore the species and its habitats. Range states of these two species in the Americas that are members of CMS include Argentina, Cuba, France [French Guiana] and Uruguay. Brazil is in the process of joining CMS. Non-Party Countries that are range states to these migratory birds are also invited to work together to support the conservation of these birds through various other non-binding sub-agreements such as the Americas Flyways Framework, adopted as part of Resolution 11.14 at CMS COP11.

Numerous co-occurring species (see Annex 1) will also benefit from the conservation actions proposed for these two species. This includes both resident and migratory species.

Conservation issues

The loss and degradation of wetland habitat along the flyway is the focal conservation issue for this workplan. These threats are numerous and include coastal development; climate change effects on coastal and tundra habitats; and impairment of key sites through human-induced disturbance.

Development of coastal infrastructure, farming that necessitates impoundment or draining of coastal wetlands and disturbance at shorebird roosting sites are issues directly related to human activity in more southern parts of the flyway. In the north, indirect consequences of human activity from climate change and habitat destruction by overabundant populations of Snow (Chen caerulescens) and Ross' (Chen rossii) geese (collectively referred to as 'white geese') are of concern for shorebird conservation on portions of the breeding grounds. Though there are other conservation issues, this particular suite was chosen, in concert with the geographic foci (below) for this first phase of AMBI, because a) they are not yet being addressed with a shorebird-centric focus on a flyway level; and b) they are expected to have (if they are not already having) a significant negative impact on the two focal species of this plan, in the focal geography.

Geographic focus

The geographic focus of this workplan is the eastern and central Canadian Arctic, and the northern coast of South America (from Caribbean Colombia to northeastern Brazil). Americas flyway experts at the AMBI workshop in Washington D.C. determined that this scope enabled AMBI to focus on a well-defined set of issues and actions that are a) not currently being addressed adequately from the perspective of AMBI focal species; b) have serious conservation implications for the focal species; c) will also have benefits to a wide number of co-occurring species; and d) can include significant contributions from indigenous organizations and traditional knowledge holders.

The central and eastern Canadian Arctic is the geographic region where the issues of climate change effects on breeding habitat and habitat destruction by white geese species, encompass much of the breeding range of the rufa subspecies of Red Knot and of the Semipalmated Sandpiper.

The northern coast of South America, and in particular the coastline from eastern Guyana through Suriname and French Guiana to northern Brazil, is an extremely important wintering area for Arctic (and boreal) breeding shorebirds, including the Semipalmated Sandpiper. Semipalmated Sandpipers from the eastern breeding grounds are believed to primarily winter in northern South America, in addition to some birds that breed further west. Part of the rufa Red Knot population winters in this area (primarily in northern Brazil), and it is also a stopover area for the long-distance migrant population of rufa that winters in southernmost South America.

Other initiatives

Through funding from the Commission for Environmental Cooperation (CEC-the environmental arm of the North American Free Trade Agreement), AMBI-Americas has the opportunity to advance conservation of its focal species. AMBI's CEC project will undertake a number of the actions in the AMBI Americas plan. It will also allow AMBI to extend its conservation efforts to habitats in Mexico, and to the roselaari subspecies of Red Knot, which uses the Pacific Flyway and is also of significant conservation concern.

The AMBI sees great value in supporting ongoing hemispheric-level processes. The first of these is the **Atlantic Flyway Shorebird Initiative and its Business Strategy and Plan** (<http://www.cms.int/en/document/atlantic-flyway-shorebird-conservation-business-strategy-call-action-phase-1>). The Atlantic business plan is relevant to this first phase of AMBI, as it addresses shorebird species and habitats that include the AMBI's current foci. The AMBI Americas workplan has been developed in close coordination with the Atlantic Flyway Shorebird Initiative, to link complementary goals, build synergies and ensure efficiencies of effort. Efforts are also underway to develop a similar initiative (a business plan) for the Pacific Flyway. AMBI will no doubt wish to support this Plan in the future.

Objectives and Actions

Migratory bird issues transcend habitats, countries, and cultures, as do conservation solutions. AMBI recognizes that collaboration between countries, communities, and individual stakeholders is key to success of the initiative. Therefore, AMBI stresses that the actions listed below are best achieved with deliberate inclusiveness and invites the perspectives and participation of stakeholders during implementation of this Plan. They will be implemented in coordination with other relevant migratory bird conservation initiatives where appropriate.

Objective 1. Evaluate, and determine appropriate mitigations, to impacts of overabundant goose populations on Arctic shorebird habitat.

Populations of white geese in the eastern and central North American Arctic have dramatically increased over the past 30 years. In some areas, like the west coast of Hudson Bay, large areas that were formerly sedge tundra have been reduced to a monoculture of moss or even bare ground. In less extreme cases, goose grazing reduces sedge height, which decreases use by nesting shorebirds. The Western Canadian and Alaskan Arctic are so far less affected, but even there goose populations are increasing and significant habitat impacts are expected in the future.

It is believed that stringent hunting regulations introduced in the 20th century (to protect what were then very small goose populations facing high hunting pressure) and the recent abundance of food from agricultural operations on the wintering grounds have made the current population explosion possible.

A cause-effect relationship between goose-caused habitat destruction and decline in shorebird populations has not yet been established. However there is circumstantial evidence to suggest that this may be the case. This is of particular concern for Semipalmated Sandpiper. Its declining eastern and central Arctic population breeding habitats overlap significantly with white goose breeding areas.

White goose populations continue to rise in North America, and their zones of impact continue to expand on the breeding grounds. There is a clear and urgent need to determine the conservation impact that this is having on other species, particularly shorebirds.

Action 1 Conduct research that is designed to identify and quantify the magnitude and mechanism(s) of impact that white goose habitat destruction has on breeding populations of shorebirds, in particular Semipalmated Sandpipers, in the eastern and Central Canadian Arctic. For example, research into this issue is being undertaken through the Arctic Goose Joint Venture (e.g., Dr. Paul Smith's Southampton Island/Coats Island research project).

The success of this action item, led by the AGJV, will be measured by a) the production, within the determined timeline, of research design, data, and interpretation of results; b) the transmission of this information to co-management boards and other wildlife managers within the affected area so that informed management action can be taken.

Action 2 Incorporate Inuit knowledge and advice into management recommendations. It is a common, but largely untested, assumption among western science practitioners that Traditional Ecological Knowledge (TEK) information is mostly limited to larger or harvested bird species. Under the co-management systems established by land claims agreements in the Canadian Arctic, TEK and the perspectives of Inuit must be incorporated into management decisions, including those that relate to the goose-shorebird-habitat issue. Specifically, AMBI will encourage work to a) articulate Inuit research questions regarding the impacts of goose habitat degradation on other birds; b) document observations and other forms of TEK from two Arctic communities regarding shorebird responses to increased white goose numbers; and c) gather Inuit recommendations and advice regarding management of the issue.

The success of this action item will be measured by a) the production, within the determined timeline, of research design, data, and compilation of results; b) the transmission of this information to co-management boards and other wildlife managers within the affected area so that informed management action can be taken.

Objective 2. Evaluate and determine appropriate mitigations to loss and shifting of shorebird habitat from climate change.

Climate change is expected to cause large changes in the quantity, quality, and location of Arctic habitats. This is one of a number of factors (e.g., disruption of lemming cycles) that are expected to have a negative impact on Arctic-nesting shorebirds. The majority of Arctic shorebird species, including the Semipalmated Sandpiper, tend to nest in vegetated sedge and grass tundra. This habitat type is expected to be pushed northward as the ameliorating climate permits shrub habitats to advance from the south. Similarly, a drying of tundra ponds is expected in many regions as the permafrost that kept the water at surface level melts. Most Arctic shorebird species depend on aquatic insects to feed chicks at hatch, so this habitat change will have a negative impact on both of AMBI's focal species.

It is conjectured that areas in the Arctic Archipelago, or other islands that are far from the mainland, will delay or avoid entirely incursion by shrub habitats. If this is correct, it would be prudent to ensure that high quality tundra habitats on islands that are generously supplied with a variety of water body types are protected as 'refugia' for graminoid tundra-breeding shorebirds. However, analysis that confirms the type and locations of such resilient habitats has not been undertaken in the North American Arctic.

Action 1 Undertake an analysis that identifies the attributes and locations of shorebird habitats that are most likely to persist under future climate scenarios.

There are analytical processes already developed to identify locations where Arctic habitats are likely to persist under future climate scenarios (e.g., the WWF's RACER program). AMBI will undertake an analysis specific to shorebird breeding habitats. The results of the analysis will feed into the habitat protection action, below.

Action 2 Encourage the protection of large contiguous tracts of shorebird habitat, in parts of the eastern and central Canadian Arctic that are least susceptible to climate changes.

Protection of habitat can come in a variety of forms, as part of legislated protected areas; zoning in land use plans; international non-binding designations; and protections enacted by Aboriginal groups on their private lands. AMBI will encourage work that determines the most appropriate protective mechanisms, in collaboration with Arctic landowners and stakeholders, and then support subsequent implementation of protective measures that are acceptable to landowners, co-management bodies, and government agencies.

The success of this action item is on a longer timeline than this workplan. Achieving consensus on land use and habitat conservation is not a quick process. In the short term, success will be measured by the robustness of identification of resilient habitats, and the communication of the results with regional landowners and other stakeholders. Ultimately, success will be measured by the amount of habitat that is protected, through legislation or other effective means, in a manner that is acceptable to regional landowners, co-management bodies, and government agencies.

Action 3 AMBI will explore opportunities to conduct assessments that quantify the vulnerability of key sites for shorebirds on the north coast of South America to climate change, and recommend actions to mitigate and/or to adapt to these impacts. AMBI will facilitate transfer of the knowledge and recommendations to habitat managers at the relevant sites.

Along the coast of northern South America, key shorebird habitats are liable to be negatively impacted by climate change-induced effects of sea level rise and increased intensity and frequency of coastal storms. However the magnitude and speed, at which these will affect shorebird populations, and effective mitigation measures, are not known.

The success of this action item will be measured by the completeness of the assessments, by the quality of the recommendations generated, and by the degree of transmission of information to habitat managers.

Objective 3. Mitigate habitat impairment from human intrusions and disturbance.

The effects of human activity on shorebirds and their habitat are not high in the consciousness of many local communities or governments along the flyway. It is very difficult to engage in conservation discussion and action until all parties at the table have a common base of understanding and appreciation for the issues. AMBI has identified a clear and pressing need for key shorebird sites along the flyway to have a higher profile. This action is prerequisite to later actions regarding impact mitigation and best management practices for industry and development.

Action 1 Communities and other partners associated with established Western Hemispheric Shorebird Reserve Network (WHSRN) and Important Bird Area (IBA) sites will be encouraged to conduct site assessments to identify critical threats to the focal species, and develop strategies to mitigate these threats. The results of these assessments will allow AMBI to prioritize actions related to hunting and habitat loss and degradation (below). In addition, formal linkages will be made among sites that share migrating shorebird populations to ensure range-wide conservation.

The success of this action item will be measured by the extent to which threats and drivers to shorebird habitats are understood, and by AMBI's ability to specify remedial actions that are needed; communities adjacent to important shorebird sites are aware of the attributes and vulnerability of the resource; and to the number of formal linkages there are between sites that host the same shorebird populations.

Action 2 AMBI will cooperate with initiatives that document the scope of shorebird hunting at selected sites along the Flyway. This includes working with hunters to assess level of take (in countries with legal hunts) and using direct observation and indirect measures (e.g., number of registered firearms, quantity and species of birds sold in local markets) as an indicator of hunt level (in countries where hunting is illegal).

There are serious concerns about the scope, composition and magnitude of the take; the level of awareness among hunters and enforcement personnel regarding legislation and protected species; and the lack of effective regulation. Background assessment work needs to be done to understand these factors, to enable identification of specific conservation issues and to propose conservation solutions.

There is clear evidence from a number of countries within the focal region that current hunting levels are not sustainable. In these cases, immediate action is required to reduce the take. Some of these actions (e.g., support for increased law enforcement activities in Suriname, acquisition and management of former shooting swamps in Barbados) have been identified in the Atlantic Flyway Shorebird Initiative and AMBI will work with this initiative to help support the implementation of priority actions.

The success of this action item will be measured by the completeness of harvest information that is gathered; by the accuracy with which the information can be used to identify conservation issues and propose conservation solutions; and by a measurable reduction in hunting activity where it is currently unsustainable.

Objective 4. Mitigate habitat destruction and degradation from development.

Both rice farming and shrimp aquaculture were identified as industries that have widespread effects on shorebird habitats in general, and increasingly so in northern South America. These farming activities can have both positive and negative effects on shorebirds, but magnitude of the effect depends on locations and farming practices. Currently, the extent of the impact is not clear because the locations of all farms have not been mapped and overlain with key shorebird habitat site locations. There is also a need to assess the exposure of shorebirds to contaminants used in shrimp aquaculture and rice cultivation.

Action 1 AMBI will create maps showing the overlap of rice farms, shrimp farms, and key shorebird habitat sites in northern South America.

Action 2 There are existing Best Management Practices (BMPs) for these activities elsewhere in the world, that could be adapted for this region. AMBI will make accessible searchable, accessible BMPs that are useful for rice cultivation and shrimp farming in northern South America. BMPs should take into account the potential exposure of shorebirds to harmful chemicals used in rice cultivation and shrimp farming, both in terms of type and application, and the timing of habitat use by shorebirds (e.g., for feeding, roosting, or both).

There are significant coastal development projects planned in locations along the northern coast of South America. Some of these are recipients of funds from development banks. The requirements of shorebirds and their habitats need to be considered in the planning stages. Accurate information must be available to developers and their financiers.

Action 3 AMBI will work to ensure that key sites for shorebirds have been clearly identified and documented in publicly-available databases, that information on these sites is incorporated into development bank/multilateral agreement decision tools and environmental safeguard policies, and that the information is readily available to governments in the focal area and incorporated into development plans.

Action 4 AMBI will work to obtain site designations (e.g., Western Hemispheric Shorebird Reserve Network, Ramsar sites), and ensure that information about each site's characteristics and ecosystem services is transmitted to local and national governments.

The success of these action items will be measured by a) the number of designations of international significance that are obtained for relevant sites; b) the percentage of sites where funders and recipients are adhering to environmental safeguard policies; c) the number of development projects where shorebird habitat conservation need have been considered in planning or environmental assessment processes.

Next steps

The purpose of this workplan is to focus attention on specific conservation issues and actions, in order to galvanize partnerships and funding. For the AMBI Americas workplan, we have assembled an ad-hoc 'committee of the willing' to develop the plan and to attempt to raise funds and implement action items going forward. This subcommittee of AMBI and the governance of AMBI generally, is expected to evolve as we move into the implementation phase. An invitation to join us is extended to experts, indigenous, local and scientific knowledge holders, and representatives from the southern portions of the Americas flyway, who have a desire to see AMBI's vision realized.

Each item in the workplan will be 'stepped down' with more detailed articulation of tasks, milestones, timelines, budgets and evaluation statements. Upon approval of the AMBI workplan by the Arctic Ministers (in April 2015), implementation will officially begin.

Annex 1. Co-occurring Arctic shorebird species that will be aided by the AMBI Americas Workplan

*not a complete list



Dunlin (*Calidris alpina*).



Pectoral Sandpiper (*Calidris melanotos*)



White-rumped Sandpiper (*Calidris fuscicollis*)



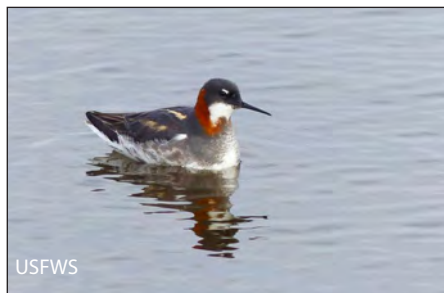
Baird's Sandpiper (*Calidris bairdii*)



Stilt Sandpiper (*Calidris himantopus*)



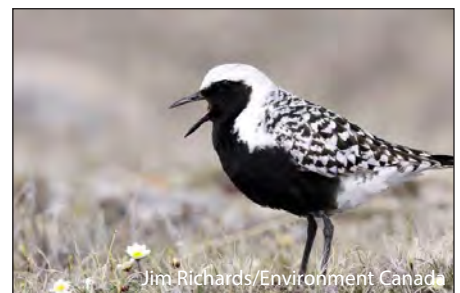
Red Phalarope (*Phalaropus fulicaria*)



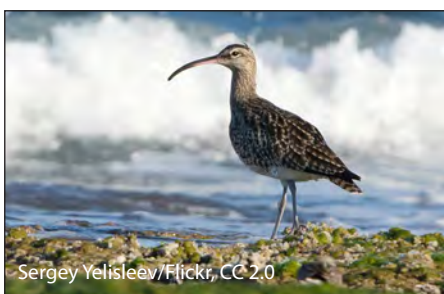
Red-necked Phalarope (*Phalaropus lobatus*)



Semipalmated Plover (*Pluvialis semipalmatus*)



Black-bellied Plover (*Pluvialis squatarola*)



Whimbrel (*Numenius phaeopus*)



Ruddy Turnstone (*Arenaria interpres*)



Western Sandpiper (*Calidris mauri*)



Sanderling (*Calidris alba*)



Least Sandpiper (*Calidris minutilla*)

Annex 2. Multilateral agreements and initiatives in the Americas

Implementation of the AMBI Americas workplan will help governments meet their commitments under several regional Multilateral Environmental Agreements, in addition to contributing to the fulfillment of the goals of multiple voluntary initiatives. Some of the principal ones are listed below:

Migratory Birds Convention

Responding to a number of high profile bird extinctions including the Passenger Pigeon and the Great Auk, governments from Canada and the United States came together to negotiate the Migratory Birds Convention, whose aim was to prevent the further loss of shared bird species. Signed in 1916, the convention has been actively conserving and protecting migratory birds ever since through parallel legislation on either side of the border (in Canada- the *Migratory Birds Convention Act* <https://www.ec.gc.ca/nature/default.asp?lang=En&n=7CEBB77D-1>, and in the United States, the *Migratory Bird Treaty* <http://www.fws.gov/laws/lawsdigest/migtrea.html>). In each country, it is unlawful to hunt migratory birds or destroy nests or eggs without a permit. Market hunting was the main threat to birds at the signing of the convention and to this day, the sale of migratory birds or parts thereof is generally not permitted. Harvesting of game birds is strictly controlled through a permitting process that is carefully monitored by binational committees along four waterfowl flyways. For nearly one hundred years Canada and the United States have been successfully cooperating on joint conservation and management activities through the relationship established by this convention.

More recently, the **North American Waterfowl Management Plan (NAWMP)** and its joint ventures, and the North American Bird Conservation Initiative are examples of how successful collaboration continues. The **Arctic Goose Joint Venture (AGJV)**; www.agjv.ca) is of particular relevance to the Americas flyway plan. It is a multi-agency partnership established under the NAWMP to further the scientific understanding and the management of North America's geese. It facilitates research and monitoring of Arctic goose populations and works cooperatively to provide a coordinated and cost-effective approach to meeting high priority information needs for the management of northern-nesting geese in North America. This partnership approach is especially valuable for conducting Arctic research where logistics are more costly and where maximum return from available funds is highly desirable. The AGJV cooperates on many surveys, banding and research projects with numerous organizations throughout the continent and other countries such as Russia.

Trilateral Committee and North American Bird Conservation Initiative (NABCI)

The Canada/Mexico/U.S. Trilateral Committee for Wildlife and Ecosystem Conservation and Management (<http://www.trilat.org/about-the-trilateral>) was established in 1995 to more effectively address priorities of continental significance and boost the concerted efforts of the three countries of The North America bioregion. The Trilateral Committee is headed by the directors of the Canadian Wildlife Service (CWS), the U.S. Fish and Wildlife Service (USFWS), and the Ministry of Environment and Natural Resources of Mexico (SEMARNAT).

The Trilateral Committee facilitates and enhances cooperation and coordination among the wildlife agencies of the three nations in projects and programs for the conservation and management of wildlife, plants, biological diversity, and ecosystems of mutual interest. The Trilateral also facilitates the development of partnerships with other associated and interested entities. Discussions take place under the auspices of working tables that report to an executive body comprising the heads of the three wildlife agencies. Delegations from each country come together annually for discussions on a wide range of topics, from joint, on-the-ground projects to issues of law enforcement to the development of information databases.

The NABCI vision is that populations and habitats of North America's birds are protected, restored and enhanced through coordinated efforts at international, national, regional and local levels, guided by sound science and effective management (http://www.nabci.net/Canada/English/about_nabci_canada.html). It is designed to increase the effectiveness of existing and new programs, enhance coordination between organizations and foster greater international cooperation. The initiative will promote conservation programs comprised of regional partnerships that pursue biologically based landscape conservation.

In Canada, NABCI members include federal, territorial and provincial governments, conservation NGOs, private sector organizations, representatives from Habitat Joint Ventures, and partners from Canada's four major bird initiatives: the **North American Waterfowl Management Plan**, **Partners in Flight - Canada**, the **Canadian Shorebird Conservation Plan** and the **North American Waterbird Conservation Plan**. Through cooperative planning and implementation, the partners will achieve their own goals, while helping make the vision of NABCI a reality.

Western Hemisphere Shorebird Reserve Network

The Western Hemisphere Shorebird Reserve Network (WHSRN; www.whsrn.org) was launched in 1985 aiming to conserve shorebirds and their habitats through a network of key sites across the Americas. The Network aligns with the simple strategy that we must protect key habitats throughout the Americas in order to sustain healthy populations of shorebirds. To date, WHSRN site partners are conserving more than 32.2 million acres (more than 13 million hectares) of shorebird habitat at 90 sites in 13 countries, from Alaska in the north to Tierra del Fuego in southern South America. WHSRN works to:

- ▶ Build a strong system of international sites used by shorebirds throughout their migratory ranges.
- ▶ Develop science and management tools that expand the scope and pace of habitat conservation at each site within the Network.
- ▶ Establish local, regional and international recognition for sites, raising new public awareness and generating conservation funding opportunities.
- ▶ Serve as an international resource, convener and strategist for issues related to shorebird and habitat conservation.

Western Hemisphere Migratory Species Initiative

At the hemispheric level, one of the first calls for greater collaboration for the conservation of migratory species came from the environment ministers of the member countries of the Organization of American States, who agreed at the third Summit of the Americas in 2001 in Quebec City to develop a mechanism to come together to cooperate on shared species beginning with migratory birds. In response to this call, the **Western Hemisphere Migratory Species Conference** was held in Chile in 2003. This conference brought together wildlife agency directors, other senior government officials, and NGOs from throughout the hemisphere, and led to the development of the Western Hemisphere Migratory Species Initiative, a non-binding cooperative mechanism to advance the conservation of shared migratory species (not just birds; <http://www.fws.gov/international/wildlife-without-borders/western-hemisphere-migratory-species-initiative.html>).

The plenary of the IV WHMSI Conference mandated a task force to advance “Integrating Migratory Bird Conservation Initiatives in the Americas”. The task force has since produced an action plan for the Americas, which formed one of the foundational components of the Americas Flyways Framework (see below).

Americas Flyways Framework

The Americas Flyways Framework (AFF) is the result of collaboration between CMS and WHMSI to develop an overarching framework for migratory bird conservation in the Americas. The framework was adopted at the 11th Convention of the Parties to CMS, as part of the **CMS Programme of Work (PoW) on Migratory Birds and Flyways** (http://www.cms.int/sites/default/files/document/Res_11_14_PoW_on_Migratory_Birds_Flyways_En.pdf). The PoW urges CMS Parties and signatories to CMS instruments in the Americas, and invited non-Parties, organizations and stakeholders to implement the AFF in collaboration with WHMSI to protect migratory birds and their habitats throughout the Western Hemisphere.

The AFF builds upon the five goals of the **CMS Strategic Plan for Migratory Species 2014-2023**. The Strategic Goals of the AFF comprise both aspirations for conservation achievement at the hemispheric level, and a flexible framework for the establishment of national and regional targets. Governments and other stakeholders are invited to set their own targets within this flexible framework to advance the conservation of migratory birds in the Western Hemisphere, taking into account the interconnectedness of migratory bird life cycles and also bearing in mind national contributions to the achievement of hemispheric targets.

Ramsar Regional Initiative for the Integral Management and Wise Use of Mangroves and Coral Reefs

This Regional Initiative (http://archive.ramsar.org/cda/en/ramsar-activities-regional-initiatives-initiativesamericas/main/ramsar/1-63-478-543_4000_0_#3) of the Ramsar Convention aims to develop a Regional Strategy and Action Plan for the conservation, management and wise use of mangroves and coral reefs. Among the initiative’s objectives are:

- ▶ To promote the generation and exchange of knowledge on the current status of conservation of mangroves and coral reefs in member countries, through inventories and ecosystem studies.
- ▶ To strengthen capacity and develop a regional approach for the conservation and wise use of mangroves and coral reefs.
- ▶ To promote the review, adaptation and harmonization of the legal framework, including national policies, to guarantee the protection and conservation of mangroves, coral reefs and associated wetlands.
- ▶ To manage mangroves, coral reefs and associated wetlands effectively by adopting an integrated watershed approach, including measures of adaptation and mitigation to climate change.
- ▶ To develop and strengthen communication, education, public awareness and participation (CEPA) in member countries to increase the visibility and awareness of mangroves, coral reefs and associated wetlands.
- ▶ To encourage, strengthen and disseminate basic and applied research, including traditional knowledge, socio-economic studies on mangroves, coral reefs and associated wetlands.

Ramsar Caribbean Wetlands Regional Initiative

The Ramsar Convention's Caribbean Regional Initiative of Wetlands (http://archive.ramsar.org/cda/en/ramsar-activities-regional-initiatives-initiativesamericas/main/ramsar/1-63-478-543_4000_0_#4) seeks to facilitate the implementation of the Convention in the Caribbean, through the development of a Regional Strategy. The initiative includes the Contracting Parties of the insular Caribbean plus Belize and Suriname.

The main strategic and initial operational goal of the initiative has been the formulation of a **Regional Strategy to Implement the Ramsar Convention in the Caribbean Sub-region** and its formal agreement by the Contracting Parties, non-Contracting Parties and other stakeholders. A secondary goal is the development of strategic interventions that can be implemented across the sub-region.

Atlantic Flyway Shorebird Initiative

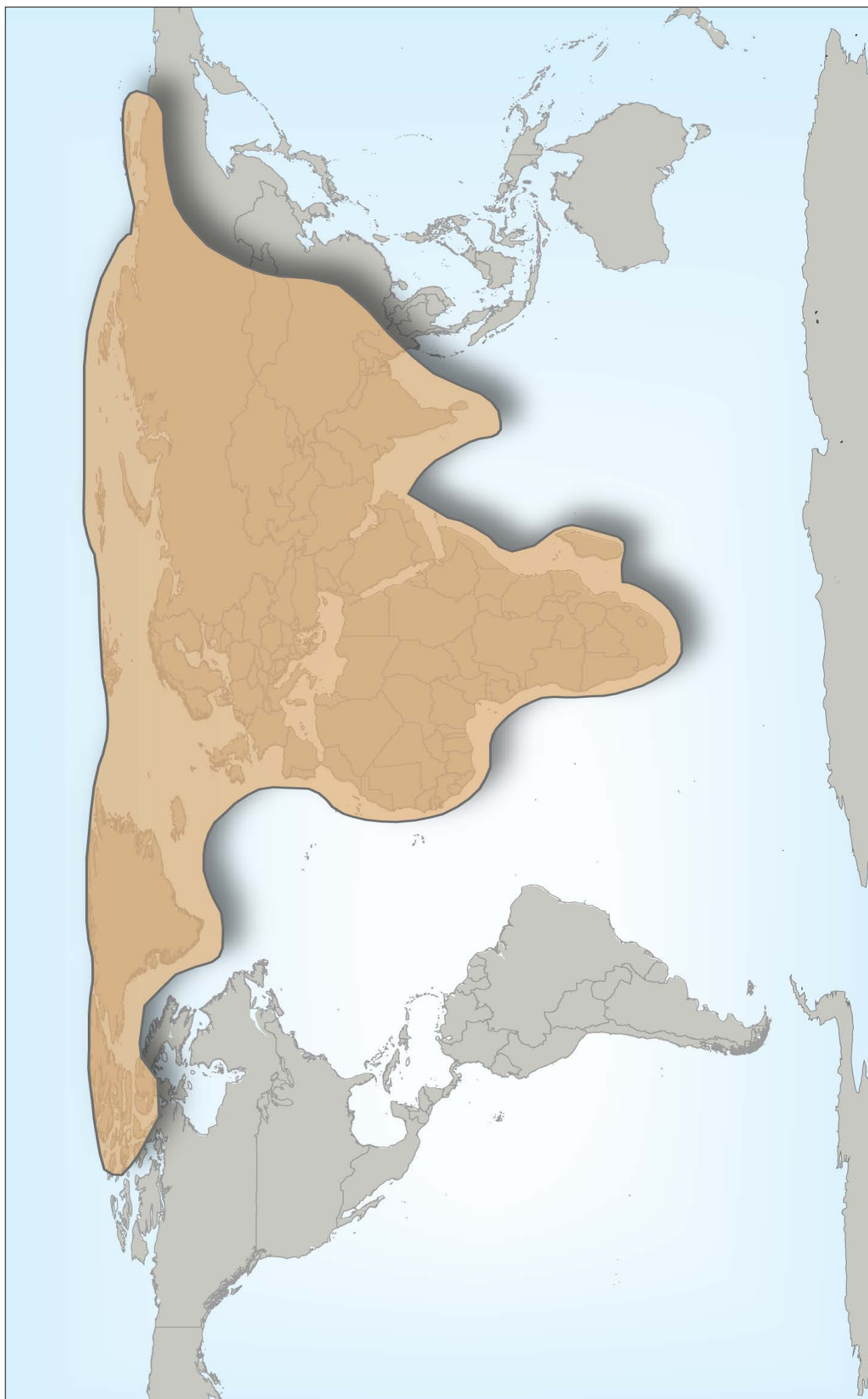
In late 2011, shorebird conservationists began conceptualizing a strategy for shorebird conservation within the Atlantic Flyway. This resulted in the production of an **Atlantic Flyway Shorebird Conservation Business Strategy** (<http://www.fws.gov/northeast/migratorybirds/shorebirdconservation.html>), a first phase business plan, representing a collection of priority activities needed to recover shorebird populations within the flyway. The second phase of development began with workshops in 2013 to engage shorebird conservationists in Latin American and the Caribbean. During 2014, and in coordination with the National Fish and Wildlife Foundation, the strategy steering committee has used an Open Standards for the Practice of Conservation process to build a conceptual model of change and develop results chains using Miradi Adaptive Management Software. The AMBI Americas workplan has been developed in close coordination with the Atlantic Flyway Shorebird Initiative, to link complimentary goals, build synergies and ensure efficiencies of effort.

Western Hemisphere Convention

The first environmental convention signed by multiple countries throughout the Americas was the "Convention on Nature Protection and Wild Life Preservation in the Western Hemisphere", commonly known as the Western Hemisphere Convention. The Convention was adopted in Washington, D.C., in 1940 and entered into force on 5 May 1942. The Convention's stated objective is to preserve all species and genera of native American fauna and flora from extinction, and also to preserve areas of wild and human value. While some parties to the Convention (notably the USA) have enacted strong domestic measures to protect migratory birds, overall the Convention has barely been implemented. However, it does include a specific provision for the protection of migratory birds of economic or aesthetic value (Article VII), committing contracting parties to "adopt appropriate measures for the protection of migratory birds of economic or aesthetic value or to prevent the threatened extinction of any given species".

Annex 3. Persons who have contributed to the development of this workplan by participating in the Montreal or Washington workshops

R. Ajisegiri	I. Davidson	I. Kaufman	T. Salathe
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J. Appiott	G. Donaldson	D. Lebbin	R. Smith
R. Atkinson	G. Gilbert	M. Loonen	E. Syroechkovskiy
Y. Aubry	D. Gremillet	W. Mansfield	I. Thaulow
T. Baldursson	W. Hagemeyer	M. Marissink	M. Thiele
T. Barry	D. Hahn	S. Millington	O. Tostain
H.C. Beng	G. Ibarguchi	D. Mizrahi	L. Wenzel
A. Black	L. Janishevski	P. Moss-Davies	C. Y. Yi
G. Butcher	M. Jeffrey	L. Neretin	D. Younkman
R. Clay	S. Johnston	R. Rodrigues	
N. Crockford	V. Johnston	K. Roy	
S. Dadrian	K. Kalasz	C. Ruiz	



Map 4. African-Eurasian Flyway

Arctic Migratory Birds Initiative (AMBI): Workplan for the African-Eurasian Flyway

Nicola Crockford

BirdLife International, UK

Morten Ekker

Norwegian Environment Agency

Contributors to the development of this workplan are listed in Annex 1.



Lesser White-fronted Goose. Photo: Morten Ekker

Introduction and context

The Arctic Migratory Birds Initiative (AMBI) is a project undertaken by the Arctic Council, through its Conservation of Arctic Flora and Fauna working group. The overall objective of AMBI is to improve the status and secure the long-term sustainability of declining Arctic breeding migratory bird populations. The Arctic Council recognizes that much of the conservation action needed to meet this objective will occur outside of the Arctic. Therefore AMBI is organized around flyways that Arctic migratory birds traverse throughout their life cycles.

AMBI's work is guided by a steering committee, and specific goals and actions are developed through flyway-specific workplans.

The AMBI African Eurasian Flyway

This flyway is defined by the African-Eurasian Migratory Waterbird Agreement (AEWA). This flyway hosts Arctic-breeding birds that winter in western and central Europe and western Africa. It includes the East Atlantic, Black Sea/Mediterranean, Central Asia, and West Africa/Asia Flyways.

Priority activities have been selected where AMBI can potentially add significant value to existing initiatives through engagement of Arctic Council member and permanent observer countries. Value can be added through diplomatic interventions, channelling funds (e.g., from development aid or Arctic budgets that might not otherwise be available for flyway conservation) and through capacity building, exchange of information and experience.

Priority species and conservation issues

Species

The **Black-tailed Godwit** is an AEWA priority species for which an AEWA International Single Species Action Plan was adopted in 2008. Although the islandica sub-population is not declining at present, it serves as a representative species for waders potentially affected by land use changes due to afforestation in Iceland.

The other three African Eurasian AMBI priority shorebird species are **Red Knot** (*Calidris canutus canutus* and *islandica*) **Bar-tailed Godwit** (*Limosa lapponica*) and **Dunlin** (*Calidris alpina arctica* and *schinzii*), all of which are declining, with the Bar-tailed Godwit being listed as a 'cooperative action' species under the Convention on Migratory Species. The **Lesser White-fronted Goose** is listed as Critically Endangered in Norway, Finland and Sweden. Numerous co-occurring resident and migratory species will also benefit from the conservation actions proposed for these five species.

Conservation issues

This workplan addresses two of the three priority issues that AMBI as a whole has identified:

1. Preventing loss and degradation of habitat:
 - a. One of the two most important wintering areas of Red Knot, Bar-tailed Godwit, and other Arctic waders along the coast of West Africa, the Bijagós Archipelago of Guinea-Bissau is threatened by damage from unsustainable land use and economic development, including specific threats such as illegal fishing, cutting of mangroves at fishing camps, conversion of floodplain habitats to rice fields and coastal erosion due to sea level rise.
 - b. Potential loss of important habitat on the Icelandic lowland breeding grounds of Black-tailed Godwit, Dunlin and other waterbirds is also a priority AMBI issue. Icelandic afforestation and other significant land use changes on the breeding grounds are poised to have a negative impact on these and co-occurring species.
2. The unsustainable harvest of Lesser White-fronted Goose occurs along migration routes. Although legally protected throughout most of its range, accidental and illegal killing are considered to be the main threats to the species. This is most acutely the case for the small Fennoscandian sub-population breeding in Norway and Finland, which is currently estimated at only 25-35 breeding pairs.

Geographic focus

There are three geographic foci for this work plan:

The Bijagós Archipelago in Guinea-Bissau is the second most important African site for migratory waders that breed in the Arctic. Each year an estimated 1.5 million waders, among them a decreasing population of 60,000 Red Knots (15% of the Afro-Siberian subspecies, *Calidris canutus canutus*) and a stable population of 100,000 Bar-tailed Godwits (14% of the Afro-Siberian subspecies *Limosa lapponica taymyrensis*) winter in the Bijagós. Of the 10,000 km² land area of the archipelago, 1,600 km² are intertidal habitats (sand banks and mudflats) and 350 km² are mangrove habitats on which these birds depend.

The migratory route of Lesser White-fronted Geese from breeding grounds in Fennoscandia and eastern Siberia through to central Asia is a focal geography. Some specific sites (e.g., the Evros delta in Greece) have been identified for conservation action, while other sites, particularly those in Russia, Ukraine, Azerbaijan, Kazakhstan, Turkmenistan, Uzbekistan, and Iran, still need to be pinpointed.

The lowland habitats of Iceland are of outstanding importance for numerous Arctic breeding waterbird populations and are second only to Russia in significance as a supplier of waterbirds to the Africa-Eurasia flyway. However, the future suitability of Icelandic lowlands for breeding waterbirds is uncertain, following the policy of the Icelandic Government to subsidise the afforestation of at least 5% of the lowlands. With sufficient timely planning, it may well be possible to accommodate the planting targets without causing undue adverse effects to Iceland's breeding waterbird populations.

Other initiatives

As AMBI has limited capacity as yet, it has been essential to select priority actions that are synergistic with those envisaged by existing or planned intergovernmental processes in the African-Eurasian Flyway, especially African-Eurasian Migratory Waterbird Agreement (AEWA, to which most range states are party) and also the Wadden Sea Flyway Initiative (WFSI), of Germany, Netherlands and Denmark) and the World Heritage and Ramsar Conventions. Two of the priority actions also have links to the AMBI East Asian Australasian Flyway workplan, thus reinforcing the circumpolar, inter-flyway nature of the issues.

Objectives and actions

Objective 1 Secure intertidal non-breeding habitat of Arctic waders in Bijagós Archipelago, Guinea-Bissau.

The recent (2012-2013) assessment of the site in relation to its deferred nomination as a natural World Heritage Site, offers a timely opportunity for AMBI to support Guinea-Bissau, and specifically its Institute for Biodiversity and Protected Areas (IBAP), in addressing the recommendations of the World Heritage Committee (WHC) with a view to resubmission of the nomination. This process is regarded as an important driver for ensuring the conservation status of the site is maintained and enhanced. The WHC Recommendations (see Annex 2 below) provide the framework from which AMBI has selected specific actions, which it proposes to contribute to the conservation of this site.

The actions below take place at international, site and local levels. All sub-actions are:

1. in line with the AEWA Plan of Action for Africa 2012-2017 Target 1.2: "A comprehensive and coherent flyway network of protected and managed sites, and other adequately managed sites, of international and national importance for waterbirds is established and maintained, while taking into account the existing networks and climate change".
2. contribute to implementation of selected recommendations from World Heritage Committee Decision: 37 COM 8B.17 (see Annex 1 below)

Annex 1 lists, for each of the Actions listed below, the sub-target(s) of the AEWA Plan of Action for Africa and the recommendation(s) of the World Heritage Committee Decision they seek to help implement.

Action 1 Share experience on World Heritage nomination (International action)

Context and objective

Guinea-Bissau's nomination of the Bijagós Archipelago as a World Heritage Site has recently been deferred pending specified action by the State Party. After listing of the Dutch-German Wadden Sea as a UNESCO World Heritage site in 2009, following an application from all three Wadden Sea countries including Denmark, the whole Wadden Sea was approved as a World Heritage site in June 2014. Currently, the only other intertidal World Heritage Site in the world is the Parc National du Banc d'Arguin in Mauritania.

In the framework of the Memorandum of Understanding (MoU) between the Wadden Sea and the Banc d'Arguin, the Common Wadden Sea Secretariat and the Parc National du Banc d'Arguin are to mentor the Guinea-Bissau Institute for Biodiversity and Protected Areas (IBAP) in coordinating the steps that need to be taken before resubmission of the Bijagós World Heritage nomination.

There is potential to link this item with the AMBI work plan for East Asian-Australasian Flyway. We will explore the possibilities for synergies between the CWSS work to support the World Heritage nomination of the Bijagós and that to support the nomination of the South Republic of Korean Yellow Sea through the CWSS MoU with the Republic of Korea.

Main activities

- a. Support to Guinea-Bissau for World Heritage resubmission to be included in the CWSS/PNBA MoU 2014-2016 action plan and submitted to the Wadden Sea Board for approval on 28-29 January 2015 e.g.,
 - i. to include help with redefining boundaries
 - ii. to support the development of capacity within Guinea-Bissau, especially, to maximise the long-term benefit of such an investment, the relevant technical institutions and civil society, to implement the recommendations of the WHC (any workshops, training, documents etc. should be in Portuguese.)

Action 2 Strengthen international recognition of the site (international action)

Context and objective

In January 2014, the Archipel Bolama-Bijagós was designated as a Ramsar Site. It was recommended that the designation is extended to the entire Biosphere Reserve to strengthen national and international recognition, protection and management. IBAP has been involved in photographic and film presentations of the biodiversity and cultural importance of Bijagós at international conferences.

AMBI can support the implementation of the existing IBAP programme to promote the Bijagós Archipelago at the national and international level, with messages efficiently and effectively targeted at key audiences who may support conservation of the site and its Arctic waterbirds, especially to highlight the value of the site for migratory waders, and the links to sites in other countries which share the same birds.

Main activities

- a. Produce an exhibition on the Bijagós for display at international events, especially those targeted at Arctic Council countries, via WSFI.
- b. Encourage production of documentaries on the Bijagós and its biodiversity richness, including its role for migratory Arctic birds.
- c. Encourage the production of publications and articles on the Bijagós.
- d. Organise exchange visits between the Bijagós and the Wadden Sea (and possibly also the Yellow Sea of Republic of Korea which may be proposed for World Heritage and Ramsar status, including in the framework of an MOU with CWSS), and with PNBA, via WSFI and the UNESCO MOU between PNBA and CWSS.
- e. Develop proposals and determine the requirements for promoting international ecotourism within the Bijagós.
- f. Support IBAP's submission to extend the Ramsar Site to the entire Biosphere Reserve.
- g. Support the WSFI workshop in March 2015 in Nouakchott and the PNBA, featuring the Bijagós, in the framework of the MOU between CWSS and PNBA, jointly with other partners (e.g., AEWA, AMBI, Abidjan Convention, PRCM), with funding from the Mauritanian government, the Banc d'Arguin and Marine and Coastal Biodiversity (BACoMaB) Trust Fund, Gesellschaft für Internationale Zusammenarbeit GIZ, and involving other East Atlantic flyway countries. This could provide an opportunity to:
 - i. launch this AMBI African-Eurasian Programme of Work
 - ii. convene international expertise to support resubmission of the Bijagós WH nomination.
 - iii. further integrate efforts of WSFI, AEWA and other partners / initiatives
 - iv. enable African countries to formulate what they need to support intertidal habitat conservation (e.g., through facilitating an analysis of gaps and opportunities).

Action 3 Protect the site from damaging developments (national/local action)

Context and objective

The Bijagós is threatened by ongoing mining and other developments planned near the area. For example, a bauxite mine project in the east of the country includes the construction of a port in the Rio Grande de Buba and offshore petroleum exploration is occurring about 100 km to the northwest of the Bijagós. Large mineral and oil ships will need to use channels within the Biosphere Reserve, posing a high risk of pollution.

Companies from at least Sweden, Norway, US and Ivory Coast are investing in an oil and gas exploration phase, and an Ivorian company is leading the environmental impact assessment.

AMBI can

1. Support the authorities, NGOs and others to ensure that the national and local planning systems are sufficient to prevent damage from shipping and industrial developments
2. Engage with investors in oil and gas exploration that come from Arctic Council countries to prevent damage to the Bijagós.

Main activities

- a. Work with the authorities, NGOs and others, e.g., Abidjan Convention, International Maritime Organisation (IMO), UNCLOS/Regional Seas Conventions, and regulation of navigation and marine pollution control, to ensure national and local planning systems are sufficient (including declaring the waters around the park as an IMO Particularly Sensitive Sea Area) to prevent damage from shipping or extractive industries either in or adjacent to the site.
- b. Strengthen effective application of relevant national and local planning systems, with adequate Environmental Impact Assessments and Strategic Environmental Assessments, to minimize damage to the site and vicinity from shipping or extractive industries either in or adjacent to the site.
- c. Undertake an analysis of potential impacts of industrial developments to migratory waders and their habitats.
- d. Develop guidelines specific to waders that future EIAs /SEAs should take into account.
- e. Seek engagement of Arctic Council countries which host investors in the Guinea-Bissau oil and gas exploration to help seek avoidance of damage to the Bijagós.

Action 4 Support development of a site management committee and management plan, to guide management and to ensure that the needs of Arctic shorebirds are fully taken into account (site level action)

Context and objective

Support national and local authorities in Guinea-Bissau in development of a whole site integrated management plan and robust institutional framework to ensure its implementation, sufficient to maintain the Outstanding Universal Values and Integrity of the Bijagós, including fully taking account of the needs of Arctic shorebirds.

Main activities

- a. Support the development of a whole site management plan and robust, sustainable institutional framework to ensure its implementation, both in general and specifically through developing modules for the management plan focussed on the identification, protection and management of key areas within the archipelago for Arctic-breeding waders.
- b. Support and co-organize a national workshop in the Bijagós with key stakeholders to identify key areas for migratory waders, threats to them and current and required management actions (e.g., in December 2015 before the regular waterbird counts).
- c. Develop a working strategy for managing key wader areas within the archipelago as a component of the overall site management plan.
- d. Support the annual January waterbird counts of high priority sectors and full surveys of the whole Bijagós every five years, especially through capacity building of local counters.
- e. Develop adaptation and resilience action plans for communities and protected areas in the Bijagós, in the face of sea level rise and resource extraction in line with the new three-year, MAVA-funded project on "Development of a Sustainable Livelihood Action Plan for West African Coastal Protected Areas in the Context of Climate Change" managed by the Réseau régional d'aires marines protégées en Afrique de l'Ouest (RAMPAO), the Regional Partnership for the Conservation of Coastal and Marine in West Africa (PRCM) and the World Conservation Monitoring Centre of the United Nations Environment Programme (UNEP-WCMC). Although Guinea-Bissau is not included in this project, the Bijagós, especially the National Park of Orango, is a member of the RAMPAO network, and IBAP and GPC are national Partners of RAMPAO.

Action 5 Mangrove restoration and provision of sustainable surveillance (local action)

Context and objective

Prior to the installation of the protected areas, fishermen, at their semi-permanent camps, had long made intensive use of the mangroves throughout the Bijagós, cutting them on a large scale as fuel for drying fish and for the production of salt. After creation of the protected areas, the fishing camps were addressed through a lengthy awareness campaign, and development of appropriate legal frameworks, resulted in all fishing camps being abandoned in 2006. Fishermen are still allowed to fish in the area, but may not spend the night or cut mangroves. However, they continue to have large fishing camps in the rest of the Bijagós, and illegal fishing, poaching and mangrove cutting still occur inside the protected areas despite some improvement in surveillance. Furthermore, there is significant waterbird poaching, particularly of shorebirds and egrets at roosts, especially by visitors (e.g., people, mainly fishermen, from Guinea-Conackry).

Additionally, the clearing of forests for agriculture, especially rice fields, contributes to the degradation of the habitat (although rice fields do provide habitat for some waterbirds including black-tailed godwits). In many parts of the Bijagós the coverage area of mangroves is reducing, with 13% of mangrove area lost in Orango National Park from 1978 to 2007 (IBAP 2008). State wardens have been installed to survey the areas, and although their number is too low for proper control of such a large and important site, no fishing camps currently exist in the National Park but have instead shifted to other islands within the Biosphere Reserve.

Mangroves function as reproduction sites for fish, roosting sites for birds, a buffer against coastal erosion (an increasing cause of habitat degradation in the Bijagós due to climate change) and storms and by 'catching' sediments they can improve the stability and productivity of the intertidal mudflats on which many Arctic waders rely. Mangroves have previously been successfully restored by the West African Mangrove Initiative of Wetlands International and the Coastal Planning Office of Guinea-Bissau.

Addressing the main causes of degradation, mangrove exploitation by fishermen and shifting agriculture, can be expected to contribute to the conservation of the Bijagós by benefitting shorebirds, livelihoods and resilience to climate change, and as a means to engage local communities and nationally raise awareness of the value of the ecosystem, helping to build momentum for conservation action. This action is in line with the October 2014 Convention on Biological Diversity Decision UNEP/CBD/COP/12/L.15 on Ecosystem Conservation and Restoration:

"Emphasizing the critical importance of coastal wetlands for biodiversity and ecosystem functions and services, in particular for migratory bird species, sustainable livelihoods, climate change adaptation and disaster risk reduction, invites Parties to give due attention to the conservation and restoration of coastal wetlands, and, in this context, welcomes the work of the Ramsar Convention and initiatives that support the conservation and restoration of coastal wetlands, including options to build a "Caring for Coasts" Initiative, as part of a global movement to restore coastal wetlands."

The first objective is to protect existing mangrove habitat by supporting the continuation and expansion of the surveillance patrols, through a Partnership between Park staff, police and local community representatives, including fishermen, to prevent further mangrove loss.

The second objective is to restore mangrove habitat. Following a feasibility/sustainability analysis, including a critical review of the reasons for slow recovery of the mangroves, begin restoration of mangroves, in areas where they have been lost, through planting, involving local communities, including fishermen, in 3-5 representative sites totalling 3000 ha in the Parc National Orango and elsewhere in the Bijagós. This will:

- ▶ assist Arctic breeding shorebirds and the ecosystem in general, including increasing resilience to climate change;
- ▶ demonstrate the need, feasibility and added value of restored mangroves to local communities, government, and donors; and
- ▶ contribute to development of capacity and an infrastructural modus operandi for the working of a Site management team.

Main activities

- a. Mangrove restoration in protected areas of the Bijagós
 - i. Undertake an initial feasibility/sustainability analysis to determine the likelihood of long term success of mangrove planting and to ensure the best methodology is deployed.
 - ii. Identify demonstration/pilot sites and design appropriate planting programmes; to plant c3000 mangrove plants/ha in two planting seasons in 3-5 sites covering c 3000-5000 ha.
 - iii. Train local communities in mangrove planting techniques.
 - iv. Collect propagules from sites with well-developed mangrove forest.
 - v. Plant propagules (during rainy season, August 15 – September 30).
- b. Community development
 - i. Design and implement a small-scale programme to raise awareness in pilot sites.
 - ii. Identify development needs of local communities.
 - iii. Identify and implement 'contre partie' activities (to reduce the pressure to cut mangroves, support ecologically sustainable local community projects for alternative means of salt production (e.g., using solar energy) and fish smoking (using ovens that use less wood), and involve local communities in mangrove planting, including to raise awareness of mangroves for sustainable fisheries).
- c. Impact monitoring
 - i. Design monitoring scheme for mangroves, birds and fish and socio-economic aspects.
 - ii. Train local communities and government wardens in monitoring techniques.
 - iii. Implement monitoring schemes, including base line surveys.
 - iv. Systematically collect images and stories to document evolution of mangrove restoration.
- d. Surveillance
 - i. Support the wardening staff, in close liaison with the police, to reinforce surveillance to prevent mangrove cutting as well as illegal fishing, waterbird poaching, and rice field expansion.
 - ii. Develop the surveillance programme to involve local communities, including fishermen, sharing experience with PNBA.
- e. Prepare scaling-up
 - i. Develop an action plan for mangrove protection and restoration in the Bijagós on a much larger scale, building on experience from present pilots and other projects.
 - ii. Develop communication materials for stakeholders for the next phase, including local communities, politicians, government agencies and donors (to show need for and added value of mangrove restoration from different perspectives and plans for future).
 - iii. Raise awareness with key stakeholders for next phase, especially politicians, government agencies and donors.

Action 6 Coordination of the implementation of the Bijagós component of the AMBI workplan (international action)

Context and objective

If the programme of work outlined here is to be implemented, it will require excellent coordination at an international level. Currently no capacity exists for such coordination. The best-placed organization for such coordination is the WSFI of the CWSS, however, the WSFI struggles even to fulfil its current commitments with having only half time coordination by a non-flyway specialist.

AMBI wishes to enable the establishment of the post of WSFI Coordinator, focussed on conservation of the worlds' intertidal World Heritage Sites (existing: Wadden Sea, Banc d'Arguin and proposed: Bijagós, Republic of Korean Yellow Sea) located at the Common Wadden Sea Secretariat, to be overseen by a Steering Committee comprising AEWA, Ramsar, CAFF, UNESCO, BirdLife International, Wetlands International, CWSS, WSFI.

Main activities

- a. Fundraise to recruit a full time position for four years starting in time to attend the Ramsar COP in Uruguay in June 2015.
- b. Facilitate the hiring of a Coordinator who can:
 - i. ensure the implementation of the AMBI Bijagós work plan (in close liaison with the AEWA Secretariat who are providing the coordinators for the other two components of the AMBI African-Eurasian work plan (Lesser White-fronted Goose and Iceland Afforestation)).
 - ii. coordinate activities and catalyse financial and diplomatic support plus exchange of experience and begin to develop links with the companies that are involved in oil and gas exploration near the Bijagos that may also have links to Arctic Council countries.
 - iii. facilitate the improvement of links between the AEWA and WSFI processes.
 - iv. play a role in any future of the Wings over Wetlands Partnership.

Objective 2. Prevent unsustainable harvest of the Lesser White-fronted Goose.

AMBI can potentially contribute, including through the Arctic Council member and permanent observer countries and the CAFF Secretariat in liaison with the AEWA and the AEWA Lesser White-fronted Goose International Working Group (LWfG IWG), through diplomatic interventions, channelling funds (e.g., from development aid or Arctic budgets that might not otherwise be available for species conservation), and through the exchange of information and experience.

There are various previous links between Lesser White-fronted Goose conservation and the following Arctic Council countries:

- ▶ Finland, Norway Russia and Sweden are represented in the AEWA LWfG IWG at governmental and/or expert level.
- ▶ Norway and Finland provide funding for the post of the Lesser White-fronted Goose Coordinator situated at the UNEP/AEWA Secretariat as well as for various international conservation projects implemented within the framework of the LWfG ISSAP.
- ▶ Norway provides funding to LWfG projects in Russia via bilateral funding frameworks.

Action 1 Reduce Lesser White-fronted Goose mortality rates caused by illegal harvest

Context and objectives

Although legally protected throughout most of its range, mortality due to illegal and accidental killing, plus disturbance caused by hunting at key staging and wintering sites along the flyway, are thought to be the key driver of the decline of the global population of Lesser White-fronted Goose. Unsustainable harvest practices in Central Asia in particular, continue to have a serious impact on the many threatened migratory waterbird populations in the region, as well as the many Arctic waterbird populations open for hunting such as the Taiga Bean Goose *Anser f. fabalis*. Continued oil and gas exploration and development have increased infrastructure development and increased access to key sites along migration routes in the Russian Arctic and sub-Arctic. This has also been linked to higher hunting pressure on migratory waterbirds in the region. The long term constructive engagement of authorities dealing with hunting as well as the regional hunting communities is therefore a key challenge and is considered essential for the future of sustainable use and conservation of migratory waterbirds in the region. Tackling unsustainable harvest is in itself a challenge, but an additional challenge for the protection of the Lesser White-fronted Goose remains that many of the key sites – especially in the staging and wintering areas – are still unknown. Without this knowledge, the implementation of urgent conservation activities – such as the sufficient protection of sites, awareness-raising, etc. — is virtually impossible.

The objective of this action is to reduce the negative impact of illegal killing and hunting on the Lesser White-fronted Goose at key sites throughout the flyways.

AMBI proposes to support a current project that is coordinated by the AEWA Secretariat, with implementation by Norwegian Ornithological Society, WWF Finland, Goose, Swans and Ducks Study Group of Northern Eurasia (RGG), Hellenic Ornithological Society, International Council for Game and Wildlife Conservation (CIC), European Federation of Associations for Hunting and Conservation (FACE), EU LIFE+ project partners, Waterbird Harvest Specialist Group. The estimated budget of 120,000 pounds is only partly realized.

Main activities of current project

- a. Identify key sites for implementation of conservation activities related to hunting (i.e., modify timing of goose hunting to avoid LWfG migration, establish no-hunting zones etc.):
 - i. Satellite-track Lesser White-fronted Geese from the Russian tundra;
 - ii. Undertake monitoring mission to Azerbaijan and Iran in February 2015 to check potential sites based on previous and new satellite information;
 - iii. Select demonstration sites across the flyway, where hunting pressure has been determined to be particularly high and the development and implementation of management plans for these sites.
- b. Launch initiative for sustainable hunting in central Asia:
 - i. Establish partnership for the initiative, further develop concept, fundraise for activities;
 - ii. Engage AEWA and CAFF Focal/Contact Points as well as other relevant government contacts in selected range states and establish contacts with other stakeholders;
 - iii. Organize first stakeholder meeting on the sustainable hunting of migratory waterbirds in the region;
 - iv. Gather and disseminate available guidance on the sustainable harvest of waterbirds.
- c. Reduce the threat to Lesser White-fronted Geese at the Evros Delta in Greece, by extending the non-hunting zone and protected area requesting international support from the EU LIFE+ LWfG Project Partners and other relevant international organizations and stakeholders (planned in 2015).

Proposed AMBI action items to support this project (through CAFF):

- ▶ Provide diplomatic support as well as expert advice for the envisaged activities
- ▶ Provide additional funding for the implementation of the site projects
- ▶ Assist with awareness-raising on the need for international coordination of hunting on a sustainable use basis in central Asia and on the need for stepped-up conservation efforts for the Lesser White-fronted Goose in order to reach a wider target audience
- ▶ CAFF Secretariat (or other relevant CAFF body) could become a partner in the initiative for Sustainable Hunting in central Asia, providing for example information on changes in the Arctic potentially affecting Arctic migratory waterbirds.

Action 2 Expand international Lesser White-fronted Goose conservation efforts to include the Eastern main sub-population.

Context and objective

At the second meeting of the AEWA Lesser White-fronted Goose International Working Group in November 2012, range states agreed that the scope of the current ISSAP should be revised and expanded to cover all sub-populations i.e., to include the Eastern main sub-population, estimated at 20,000 individuals, which breeds in the Eastern Russian Arctic and winters in China and Japan.

Although much is still unknown, the threat from illegal killing also appears to be severe along this flyway, with incidental reports of illegal harvest using poisons (such as Alpha-Chloralose). In addition, habitat loss is one of the main threats to the species in China, with only one wintering site remaining. Considering in particular the diminished status of the other sub-populations, having a comprehensive international conservation framework for the entire species is a matter of urgency.

The objectives are linked to the AMBI work plan for East Asian-Australasian Flyway

- a. Make contact with and encourage the Russian, Chinese, Japanese, Mongolian and Republic of Korea governments and experts to support the expansion of the International Single Species Action Plan to include the Eastern main population.
- b. Identify priority conservation activities for the Eastern main sub-population in China and Russia.
- c. Use the Anatidae Working Group of EAAFP as an instrument to coordinate international activities on LWFG conservation in East Asia and arrange coordination of its work with the AEWA secretariat.

This action is also coordinated by the UNEP/AEWA Secretariat and will be implemented by the Secretariat and relevant government authorities and expert organizations. Its proposed budget (not yet obtained) is 45,000 pounds.

Main activities

- a. Expand the current AEWA ISSAP to include the Eastern main sub-population:
 - i. Establish contacts between AEWA Secretariat and relevant officials and experts along flyway;
 - ii. Prepare draft texts/maps on the Eastern main sub-population to be included in the ISSAP;
 - iii. Prepare and execute official consultation process with range states, stakeholders and AEWA/CMS governing bodies;
 - iv. Prepare final version for adoption at AEWA Meeting of the Parties (MOP) in November 2015.
- b. Feature the Lesser White-fronted Goose at a waterfowl conservation workshop in China in 2015:
 - i. Present the Lesser White-fronted Goose as a flagship species for mitigation of illegal killing of all Arctic waterfowl species;
 - ii. Present overview of ongoing activities under AEWA as well as efforts to include the Eastern main sub-population in the revised AEWA/CMS ISSAP.
- c. Identify first priority activities for the Eastern main sub-population for short term implementation:
 - i. Consult with Russian and Chinese government officials, national experts and stakeholders as well as representatives from the international conservation community (as part of the ISSAP process described above) to develop an action framework;
 - ii. Undertake a priority ranking of the action framework activities, identifying between one and three projects for immediate implementation
 - iii. Produce awareness-raising materials in Chinese (based on existing poster and field guide);
 - iv. Fundraise for prioritized activities/projects in need of new funding and commence implementation should sufficient funding be available.

Proposed AMBI actions (through CAFF):

- ▶ Assist the UNEP/AEWA Secretariat to establish contact and to set up meeting with key officials at the Chinese State Forestry Administration.
- ▶ Provide diplomatic support in promoting the conservation of the Lesser White-fronted Goose as a flagship species for migratory waterbirds within the Russian and Chinese governments.
- ▶ Provide 45,000€ as seed-funding to kick-start implementation of prioritized activities for the Eastern main sub-population.

Objective 3. Secure breeding habitat of waders in Iceland by ensuring that national afforestation, and other land use policies and practices are sustainable.

Action 1 Cooperate with Iceland to avoid risks to breeding water birds from changes in land use in the Icelandic lowlands, especially with regards to national afforestation policy.

Context and objective

Following a recommendation of the Standing Committee of the Bern Convention on European Wildlife and Natural Habitats adopted in 2002, the Government of Iceland was urged to undertake several actions to ensure that the national afforestation policy was not harmful to its waterbird populations. The latest review of the issue took place at the Bern Standing Committee in early December 2014.

In 2013 the AEWA Standing Committee approached Iceland with the suggestion to open an Implementation Review Process (IRP), a procedure under AEWA Resolution 4.6 established to assist Parties with issues of concern, by entitling the Standing Committee to address incidents of adverse or potential adverse effects on migratory waterbirds or on their sites and habitats as a result of human activities. In July 2014, the Government of Iceland welcomed the request of the Standing Committee and an expert mission to Iceland scheduled for 2015 will assess the situation on the ground and recommend solutions including the exchange of experience.

The objective is to ensure that Icelandic afforestation practices do not put Iceland's internationally important migratory waterbird populations at risk, and that the other key threats to Iceland's lowland breeding waterbird populations are addressed in accordance with Iceland's obligations under relevant MEAs.

This process is coordinated by the Ministry for the Environment and Natural Resources in Iceland and the UNEP/AEWA Secretariat.

Main activities

- a. CAFF /AMBI to consider supporting Iceland through exchange of experience with other CAFF countries. Possible areas of support could be raising public awareness of the international importance of breeding waterbird populations and highlighting the importance of ensuring that afforestation and other land use practices are not detrimental to migratory waterbird populations.

Annex 1. Personnel involved in various aspects of development and implementation of the AMBI African-Eurasian workplan

Arctic Council countries within the African-Eurasian Flyway

Members: Norway, Denmark, Sweden, Finland, Iceland, Russia

Observers: Germany, Netherlands, UK, France, Poland, Italy and Spain

African-Eurasian AMBI priority actions teams

Objective 1. Securing habitat of Red Knot, Bar-tailed Godwit and other Arctic waders in the Bijagós Archipelago of Guinea-Bissau (second most important wintering site for these species).

- ▶ Convenor: Nicola Crockford
- ▶ Gerold Lüerßen (Common Wadden Sea Secretariat (CWSS) & WSFI)
- ▶ Barend van Gernerden (VBN, BirdLife in NL)
- ▶ Geoffroy Citegetse (BirdLife Africa, Senegal)
- ▶ Joaozinho Sá (Guinea-Bissau: NGO Organização para a Defesa e o Desenvolvimento das Zonas Húmidas na Guiné-Bissau (ODZH)/Bureau de la Planificação Costeira (Government Bureau of Coastal Planning) (GPC)/Wetlands International
- ▶ José Alves, University of Aveiro (Portugal)
- ▶ Jutta Leyrer, Parc National du Banc d'Arguin
- ▶ Tim Dodman (WSFI)

Other consultees: Gerard Boere (WSFI), Hans Meltote, Sten Asbirk (ex-DOF), Antonio Araujo (Fondation International du Banc d'Arguin - FIBA), Domingos Gomes Betunde (Chief Warden, Orango National Park), Meio Dia (Bijagós Biosphere Reserve coordinator), miguel_lecoq@yahoo.com (formerly NOÉ Conservation at Orango National Park, Bijagós, currently MONTE working with IBAP), Luís Costa (SPEA/BirdLife Portugal).

Objective 2. Preventing unsustainable harvest of Lesser White-fronted Goose.

- ▶ Convenor: Morten Ekker
- ▶ Nina Mikkander
- ▶ Evgeny Syroechkovskiy
- ▶ Manolia Vougioukalou (HOS, BirdLife in Greece)
- ▶ Sonya Rozenfeld (Goose, Swan and Duck Study Group of Northern Eurasia -RGG)

Objective 3. Ensuring Icelandic afforestation policy, and other significant land use changes, do not harm Black-tailed Godwit, Dunlin and associated breeding waterbird populations.

- ▶ Convenor: Nicola Crockford
- ▶ Jim Wilson (Norway)
- ▶ Sergey Dereliev (AEWA)
- ▶ Ivana d'Alessandro (Bern Convention)
- ▶ José Alves, University of Aveiro (Portugal)

Annex 2. World Heritage Commission recommendations regarding nomination of the Bijagós Archipelago as a World Heritage Site

1. Having examined Documents WHC-13/37.COM/8B, WHC-13/37.COM/INF.8B1 and WHC-13/37.COM/INF.8B2;
2. Defers the examination of the nomination of the Bijagós Archipelago – Motom Moranghajogo, Guinea-Bissau, to the World Heritage List to allow the State Party to:
 - a. Strengthen the legal protection status of the property to ensure that all areas nominated have adequate legal and/or customary protection;
 - b. Consider modification of the boundaries of areas to be nominated within the overall biosphere reserve to conform to integrity requirements and exclude heavily modified areas that do not contain attributes that contribute to the Outstanding Universal Value of the property. These areas, including the towns of Bolama and Bubaque, could be included in a buffer zone for the property as defined in paragraph 103 of the Operational Guidelines;
 - c. Deepen the comparative analysis to ascertain whether the property might be considered to have the potential to demonstrate Outstanding Universal Value (OUV) for cultural criteria;
 - d. Ensure that an overall management plan/system is established for the nominated site with appropriate institutional and financial means and measures in place, including an overall coordination body for the whole property;
 - e. Ensure that this management plan/system includes a clear and agreed strategy for sustainable tourism, including appropriate policies, programmes and tourism infrastructure that does not degrade the integrity of the property and its OUV;
 - f. Update, detail and strengthen management plans for the existing legally protected areas included within the property in a way that is compatible with the overall management plan/system of the property;
 - g. Establish effective protection and management measures and activities that minimize the effects of the non-native species, including those considered as invasive, and restore degraded areas where appropriate
 - h. Ensure that new shipping routes are not be established through the nominated site;
 - i. Ensure that oil exploration and exploitation operations do not take place within the nominated property and that operations outside of the site do not have any significant impact on the nominated site; and
 - j. Ensure that human and financial resources are sufficient to maintain the integrity of the property and the long-term preservation of its Outstanding Universal Value; in particular raise sufficient financial resources for the trust fund project (the “Fondation Bioguinée”), and take all measures to ensure that an adequate proportion of this fund is earmarked for the proposed site;
3. Recommends that the State Party move forward plans to designate either the National Parks, or possibly the entire Biosphere Reserve, as a Ramsar site, to strengthen national and local protection and management and international recognition;
4. Commends the State Party and its partner organizations for its committed and innovative work in participatory community management in this important protected area;
5. Considers that the evaluation of any revised nomination would need to include an expert mission to the site;
6. Encourages the State Party, under the principles of the Upstream Process, with the assistance of the World Heritage Centre and the Advisory Bodies, to seek advice on the potential of the site to satisfy cultural criteria and on reframing the nomination for natural criteria to address the concerns above.

Action	AEWA Plan of Action for Africa 2012-2017 target	World Heritage Committee Decision Recommendation	Timescale, budget, management and coordination
1. International: share experience on World Heritage nomination	1.2.2: All Contracting Parties have provided protection status or other designation to the sites within the network	World Heritage Committee Decision: 37 COM 8B.17	Project period: 2015-2017 Budget: Project organisation: Coordination
2. International: strengthen international recognition of the site		3 on strengthening the international recognition of the Ramsar site.	Project period: 2015-2018 Budget: Project organisation: Coordination:
3. National/local: protect the site from damaging developments	1.3: Environmental Impact Assessment & Strategic Environmental Assessments are used to reduce the impact of new developments on waterbird species and populations.	2h Ensure that new shipping routes are not be established through the nominated site; 2i Ensure that oil exploration and exploitation operations do not take place within the nominated property and that operations outside of the site do not have any significant impact on the nominated site; and	Project period: 2015-2017 Budget: €200,000 Project organisation: Coordination: IBAP
4. Site level: Support the development of a site management committee and management plan to guide management and to ensure that the needs of Arctic shorebirds are fully taken into account	1.2.3: All CPs have put in place site management plans that cater for the needs of waterbird conservation, and implement them for the key network sites	2d Ensure that an overall management plan/system is established for the nominated site with appropriate institutional and financial means and measures in place, including an overall coordination body for the whole property; 2e Ensure that this management plan/system includes a clear and agreed strategy for sustainable tourism, including appropriate policies, programmes and tourism infrastructure that does not degrade the integrity of the property and its OUV; 2f Update, detail and strengthen management plans for the existing legally protected areas included within the property in a way that is compatible with the overall management plan/system of the property;	Project period: 2015-2017 Budget: €100,000 Project organisation: Coordination: BirdLife BirdLife-WCMC-IBAP- University of Aveiro on identification, monitoring and management planning for shorebirds.
5. Local: mangrove restoration and provision of sustainable wardening		2g 'restore degraded areas'	Project period: January 2015- January 2017 Budget: €100,000, options for co-funding in kind via govt agencies, IBAP and GPC Project organisation: Coordination: NGO ODZH supported by BirdLife in collaboration with Orango National Park Authority and Bijagós Biosphere Management Team. Implementation: IBAP and GPC with exchange of experience with PNBA on surveillance. Project location: PN Orango due to proximity to capital and presence of supportive government structures (IBAP coordinator and wardens in the Bijagós). Local communities have engaged previously in conservation activities and so it is expected that the project can start quickly.



Map 5. Circumpolar Flyway

Arctic Migratory Birds Initiative (AMBI): Workplan for the Circumpolar Flyway

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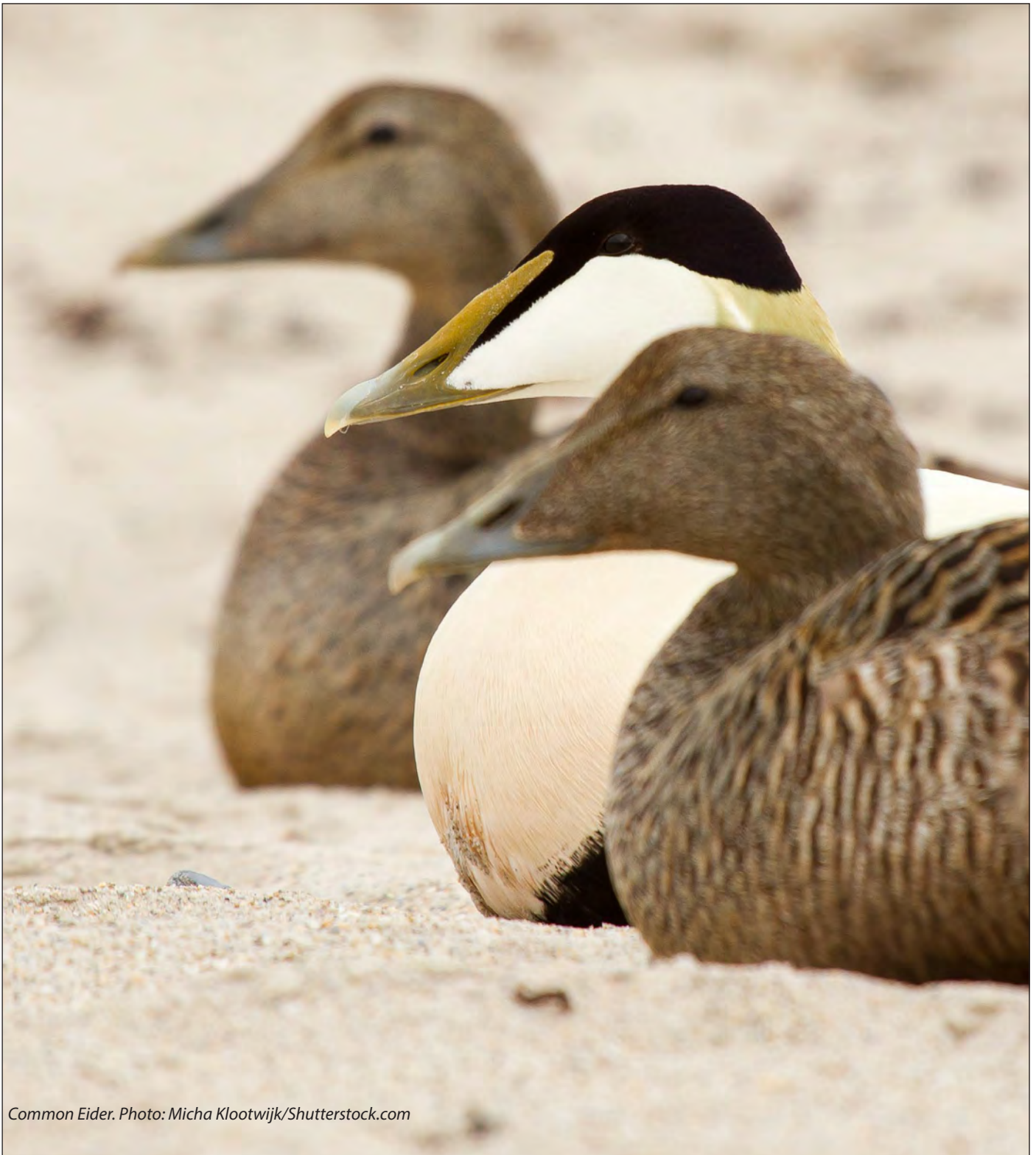
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Common Eider. Photo: Micha Klotwijk/Shutterstock.com

Introduction

The Arctic Migratory Birds Initiative (AMBI) is a project undertaken by the Arctic Council, through its Conservation of Arctic Flora and Fauna (CAFF) working group. The overall objective of AMBI is to improve the status and secure the long-term sustainability of declining Arctic breeding migratory bird populations. The Arctic Council recognizes that much of the conservation action needed to meet this objective will occur outside of the Arctic. Therefore the AMBI is organized around flyways that Arctic migratory birds traverse throughout their life cycles.

AMBI's work is guided by a steering committee, and specific goals and actions are developed through flyway-specific work plans. Implementation will be phased over the next four years (2015-2019).

In 2015, action items will be further developed to a greater level of detail, with task identification, resource requirements, timelines, and detailed evaluation measures described. Another important task to be completed by the fall of 2015 will be to have a robust evaluation methodology in place for the AMBI project, to be used at the end of current workplan timeline (year 4).

The Circumpolar Flyway

In addition to the traditional flyways identified as areas of concern, the AMBI Expert Group identified a Circumpolar Flyway that covers focal species (mainly seabirds and seaducks) that spend most or all of their life cycle in Arctic regions, and migrate east-west rather than north-south. At a meeting of experts in Montreal in February 2014, bycatch, overharvest, and habitat degradation were identified as the priority conservation issues for focal species on this flyway.

The Montreal expert's meeting gave direction for the development of this work plan, which was undertaken by the Circumpolar Seabird Work Group (CBird) and Birdlife International. The Circumpolar Flyway is considered to be the area within the CAFF boundary.

Objectives and actions

Since most of the threats to marine and other birds (e.g., raptors) in this Circumpolar Flyway are 'place-based', the most pressing need is for research action to identify where and when these birds congregate during their life cycle (particularly during the non-breeding season) and how these areas overlap with industrial activities such as marine shipping and emerging polar commercial fisheries.

The four issues identified by the AMBI expert group as priorities for the circumpolar work plan include:

1. critical lack of information on key at-sea sites for marine bird congregations,
2. habitat degradation,
3. harvest; and
4. seabird bycatch in commercial fisheries.

Traditional knowledge is a fundamental element in successful wildlife co-management programs. Within the Circumpolar Flyway, Arctic countries will engage with indigenous knowledge holders as appropriate to incorporate indigenous perspectives in marine bird conservation and research initiatives, and include community-based monitoring, as appropriate, as a valuable tool for reaching conservation goals.

Objective 1: Obtain critical information on key at-sea sites for marine bird congregations.

Birds at sea are often considered to be proxies for ecosystem health and indicators of environmental change (Frederiksen *et al.* 2007, Piatt and Sydeman 2007). Identifying Arctic marine areas that support large numbers of birds will help to flag shifts in seabird and seaduck distribution relative to changes in habitat, as well as aid managers in prioritizing marine conservation areas.

Several research methods will be employed to identify marine areas that support large numbers of marine birds and factors affecting them. The distribution of seabirds at sea changes as water masses change so the survey results need to be compared to physical characteristics of the water including sea surface temperature (SST) and salinity, as well as biotic factors such as primary production and zooplankton distributions. At-sea monitoring allows population trends and especially changes in distribution throughout the range of a species to be determined for many species simultaneously. Established methods include colony-based and at-sea surveys, at-sea tracking using tracking devices deployed on birds themselves, and analyses of harvest statistics.

Action 1. Develop and implement at-sea surveys

At-sea surveys have the potential to address the full scale of seabird biodiversity present in a respective area at given time of year, and surveys can in theory be carried out at any time of year.

Winter surveys of seabirds are inevitably carried out at sea but can sometimes be difficult to execute due to poor weather, dangerous oceanic conditions, limited light conditions and few suitable research vessels. Because of these factors, transects should concentrate on areas of high seabird density. These are often coastal and in some locations, surveys can be done from small boats or from the shore. Important seabird distribution data can also be collected from aerial surveys. Although also weather-dependent and costly, they have shorter sampling times and much larger coverage than vessels.

Collaborative ventures with research and fisheries monitoring vessels can provide 'platforms of opportunity', especially during seasons difficult to survey from smaller vessels.

Recently the following ideas have been discussed by CAFF's Circumpolar Seabird expert Group (CBird) for at-sea surveys following established seabird at-sea protocols:

- a. start with 10 to 15 pilot areas throughout the Circumpolar Arctic
- b. monitor selected coastal and open sea areas (every one to five years)
- c. Where feasible, use local ferries and research vessels to establish permanent transects
- d. Also use vessels of opportunity for one-time transects
- e. Where possible, deploy seabird observers on vessels with continuous plankton recorders
- f. liaise with existing global monitoring programs

Measureable Target to Evaluate Action by 2017 – at-sea surveys

- a. Improve temporal and spatial coverage of seabird habitat use in the Circumpolar Arctic
- b. Generate analysis of habitat use in relation to biotic and abiotic factors

Action 2. Develop and implement at-sea tracking

With the advent of light-weight and relatively inexpensive tracking devices, it is now possible to track birds at sea. In doing so, researchers can begin to define marine areas used by seabirds over time, both during the breeding season and the non-breeding season. Importantly, tracking data will fill gaps in temporal and spatial coverage as at-sea surveys generally cover only a small portion of seabird habitat. This information is extremely important because it helps identify which parts of the oceans are most important to seabirds as well as timings of movements over different spatial scales. Over time, tracking studies also have the potential to demonstrate changes in areas used by seabirds in relation to variations in ocean productivity that may be caused by overfishing, pollution or climate change. Increasingly, seabird researchers are collaborating internationally to coordinate research efforts and merge data sets so as to increase the scope of utility of projects and related findings.

At-sea tracking should target species vulnerable to fisheries bycatch (identified in Zydels et al. 2013), and indicator species that occupy areas throughout their lifecycle that are not likely to be monitored by ship-based or aerial seabird surveys.

Measureable Target to Evaluate Action — at-sea tracking

- a. improve temporal and spatial coverage of seabird habitat use and wherever possible, compile data tracks.
- b. analysis of habitat use in relation to biotic and abiotic factors in the Circumpolar Arctic (2015-2017)

Action 3. Identify areas where key marine seabird habitats intersect with current and especially emerging commercial fisheries, resource exploration and shipping developments

Existing seabird distribution data can be combined with results of at-sea surveys, at-sea tracking, colony-based research, and ship tracking data from organizations such as the Marine Security Observations Centres (MSOC) in Canada to map the overlap of coastal and pelagic seabird hotspots with ship activity, resource exploration and commercial fisheries (focusing down to fisheries in which specific species – or groups – are most susceptible). Special planning and efforts will have to be made to obtain fishing effort data, particularly for smaller vessels, which tend to be poorly monitored, compared to larger vessels. It should be recognized that this latter objective is notoriously difficult to achieve, because the locations of successful fishing vessels is often a closely guarded secret. That said, this exercise would begin to identify target geographic areas and associated resource users for community outreach exercises, as well as policy and regulation development.

Measureable Target to Evaluate Action – overlap of key marine bird areas and resource development activities

- a. Identification of areas where research and management priorities should take place (perhaps drawing on pre-existing Important Bird Areas throughout the Circumpolar Arctic that have already been identified). Develop this through 2015-2017.
- b. Areas where longline and trawl fisheries and marine bird hotspot overlap are identified.
- c. Best practice mitigation measures adopted where marine birds and ships or resource development overlap.

Objective 2: Mitigate habitat degradation.

Seabird colonies are generally located in coastal areas which are the interface between marine and terrestrial ecosystems. This, in addition to their propensity to congregate in large numbers, makes them vulnerable to disturbance related to human activities (e.g., shipping, resource extraction infrastructure, tourism, natural resource development).

Action 1. Identify and participate in current initiatives to facilitate protection of marine birds and marine bird habitat

Within the circumpolar flyway there are several global and regional initiatives underway that have the potential to facilitate habitat protection and minimize disturbance for focal circumpolar flyway species. These initiatives should be identified and engaged in to ensure that critical breeding and wintering areas for seabirds and seaducks are taken into account when planning for resource extraction activities, commercial fishery exploration, and shipping developments. Initiatives that endeavor to coordinate conservation across borders could be prioritized as it is often much more difficult to implement.

Current initiatives to engage with include:

- a. Work to coordinate and expand efforts to identify Ecologically and Biologically Significant Marine Areas throughout the Circumpolar Arctic (EBSA, global).
- b. Work to develop Strategic Environmental Assessments (SEA) in the Circumpolar Arctic. Examples include a SEA for Baffin Bay/Davis Strait (Canada), as well as the proposed Lancaster Sound National Marine Conservation Area feasibility assessment (Canada).

Action 2. Ensure that guidelines for responsible seabird colony viewing are made available to the tourism industry.

Seabirds nesting at great densities attract tourist visitation in the Arctic because they are dramatic and predictably found. Many species are sensitive to disturbance, however. Approaches must be implemented to simultaneously permit tourists to view seabirds while minimizing possible disturbance.

Objective 3: Mitigate seabird and seaduck bycatch.

Gillnet fisheries globally are estimated to kill 400,000 birds every year (Zydelis *et al.* 2013), with a substantial proportion of this mortality coming from higher latitudes, particularly in the northern hemisphere (estimated annual bycatch mortalities from Iceland, the Baltic Sea and NW Pacific are 100,000, 76,000 and 140,000 respectively). An estimated 300,000 seabirds are killed globally in longline and trawl fisheries each year. While there is a suite of best practice mitigation measures to reduce this toll in longline and trawl fisheries (e.g., see Agreement for the Conservation of Albatrosses and Petrels Best Practice mitigation advice), the same does not exist for gillnets fisheries and, to date, there has been little research in this regard.

In addition, the lack of directly observed bycatch data from fisheries is a barrier to achieving progress in bycatch reduction. Broadly speaking, observer effort in fisheries worldwide is far below minimum levels (20% of the fleet) that would give satisfactory estimates of seabird bycatch, and data collection protocols are frequently not well-designed for the purpose of estimating fishery-wide bird mortality. Further, observer coverage in gillnet fisheries is often even lower than in other fleets because they tend to be (though are not always) smaller-scale operations with lower quota shares, making them a lower priority for national monitoring programmes.

To begin to address the issue of bycatch in Arctic country marine areas, two broad actions are proposed:

1. Better understand the scale of seabird bycatch (particularly gillnets) in the Circumpolar Flyway.
2. Develop, test and implement mitigation measures to reduce seabird bycatch.

Action 1. Undertake gill net bycatch assessments in key regions

It is proposed that further efforts are made to elucidate the scale of gillnet bycatch on the Circumpolar flyway. Given evidence of seabird bycatch in the Icelandic lumpfish fishery, gaining further data from this, and similar fisheries in Greenland, Norway and Newfoundland, is considered a useful starting point. Bycatch in gillnets in the Baltic Sea is also linked to the Arctic, as several species, particularly threatened sea ducks such as velvet scoter and long-tailed duck, breed in the Arctic and overwinter in/migrate via the Baltic. Both of these species are listed on the African-Eurasian Migratory Waterbird Agreement.

Identifying the scale of bycatch in these key areas/fisheries could have several aspects:

- Assess existing data on gillnet bycatch from national observer programmes, independent studies, grey literature. This would provide an update to the recent global review (Zydelis *et al.* 2013), and could include data recently collected in the lumpfish fishery in Norway.
- Work with circumpolar countries to share gillnet fishing effort data to examine overlaps with bird distribution (links to issue 1), potentially through the development of an Arctic-wide map. This will inform future priority areas for engagement. Implicitly requires careful data management to ensure confidentiality.
- Assist national governments in incorporating seabird bycatch data collection into existing observer programmes through updating protocols and providing training and expertise (this includes a role for NGOs with relevant expertise, like BirdLife).
- From the fishing effort/bird overlaps work, identify key fisheries where observer coverage is lacking and prioritise capacity increases in these fisheries.

Measureable Target to Evaluate Action — gillnet bycatch assessments in key regions

- Existing bycatch data reviewed and updated.
- Governments share fishing effort data and overlaps between fishing effort and susceptible bird species identified.
- Observer programmes updated to incorporate seabird bycatch data collection.
- Observer programmes implemented to collect seabird bycatch (and other) data in gillnet fisheries.

Action 2. Develop and test bycatch mitigation measures

In order to reduce seabird bycatch in gillnet fisheries, mitigation measures must be investigated. One emerging and one established Arctic fishery are proposed to test and develop technical mitigation measures. Utilisation of spatial/temporal fisheries management measures is proposed for the wider Arctic, in areas with known bycatch problems. Finally, the implementation of existing best-practice seabird bycatch mitigation measures in Arctic longline and trawl fisheries should be promoted.

I. Technical Mitigation Measure Development in an emerging fishery– Nunavut, Canada

In Canada, Nunavut has an emerging fishery for turbot (Greenland Halibut, *Reinhardtius hippoglossoides*) and other species are being examined for their marketability. These species are fished commercially using long lines and gillnets, and fishing activities are concentrated in Baffin Bay and Davis Strait. Though fishing levels are currently low, it is possible that the industry will grow quickly with potential quota increases as new fisheries develop (Aarluk Consulting Inc. 2014). This presents an opportunity to research, develop and implement bycatch mitigation measures early in the development of Nunavut's fishery, thereby normalizing conservation-oriented standard operating procedures.

Though seabird bycatch in Canadian Arctic waters is known to exist (Mallory 2006) there is a paucity of data on bycatch levels and the species involved. Despite this, efforts to test the effectiveness of experimental mitigation measures such as gear type and sensory alerts (visual and audio) in Arctic waters should be made in areas where species that are susceptible to gillnet bycatch (identified in Zydelis *et al.* 2013) congregate in large numbers (see Issue 1 above). Seabird bycatch reduction measures should be developed alongside the expansion of Nunavut fisheries, allowing for local and regional resource users and managers to actively participate and perhaps lead in experimental trials and policy implementation.

II. Technical Mitigation Measure Development in an established fishery – Lumpfish gillnet fishery

As in Nunavut, experimental seabird bycatch mitigation measures should be tested in an area with an established gillnet fishery with seabird bycatch. The lumpfish fisheries in Iceland, Greenland, Norway and Canada are all prospective options. The Icelandic lumpfish gillnet fishery has just been Marine Stewardship Council certified, and the Greenlandic fishery is in the process of being certified, which may provide opportunities to develop mitigation measures working with industry.

Measureable Target to Evaluate Action 3.2 (a) and (b)

- Technical Mitigation Measure Development in one emerging and one established fishery

III. Mitigation measure testing experiments established in collaboration with fishing industry

- a. Implement best practice bycatch mitigation measures in Arctic longline and trawl fisheries that overlap with bycatch-vulnerable species habitat.

Best-practice mitigation measures for longline and trawl fisheries have been developed (see Agreement for the Conservation of Albatrosses and Petrels Best Practice mitigation advice), so efforts should be made to engage with resource managers in all countries and regional fisheries management organizations (including the North East Atlantic Fisheries Commission and the North Atlantic Fisheries Organisation) to have these measures implemented in fisheries that overlap with concentrations of bycatch-susceptible species.

Measureable Target to Evaluate Action – best practices in long-line and trawl fisheries

- a. In steps similar to those identified for gillnet fisheries, countries and regional fisheries managers should share fishing effort data to identify overlaps with bird distribution, highlighting areas where further data collection and the implementation of mitigation measures should occur (i.e., overlaps between northern fulmar and longline fishing operations)
- b. Spatial/temporal measures — Arctic-wide

In the absence of best practice seabird bycatch mitigation measures for gillnets, spatial and temporal management of fishing activity has a clear role to play in reducing the impact of gillnet bycatch, particularly in the short-term. Developing a meaningful system requires the following: knowledge of existing key areas for susceptible seabirds (migration routes, breeding sites, foraging areas, moult sites (see issue 1), and identifying overlaps with fishing effort (see action 3.1). Work could be prioritised on the basis of the conservation status of potentially impacted species, risk of population-level impacts and intensity of bycatch rate (where known).

Measureable Target to Evaluate Action - Spatial/temporal measures

- a. Key habitat sites for susceptible species and overlaps with gillnet fisheries identified – spatial/temporal measures implemented to reduce bycatch rates

Objective 4: Mitigate unsustainable harvest.

The use of living resources is fundamental to many regions of the Arctic. For coastal people, marine mammals and seabirds are among the principal sources of harvest. The human use of seabirds varies among circumpolar nations, both in scale and in form, but often dates back hundreds of years. Historically, birds were taken for their meat, eggs, skins, and down. With the exception of skins, they are still harvested for these body parts but harvest methods have changed over time to include more efficient tools, making the seabirds more exposed to excessive harvest. By nature, most seabirds are already sensitive to adult mortality since they produce small clutch sizes and have delayed reproductive maturity. Further, they are generally challenged by low temperatures and reduced day length at high latitudes and periodically suffer due to extreme weather conditions.

The distribution of some of the Arctic marine food sources upon which seabirds are dependent is also apparently changing as a result of climate change. In the North Atlantic for example, a northward shift in the distribution of *Calanus* copepods is currently affecting the availability of certain fish species of major importance for seabirds, particularly sand eels, *Ammodytes* spp. These changes are believed to be involved in massive breeding failures among seabirds in Iceland, the Faroes, Scotland, and Norway, starting in 2004. This situation is part of the explanation for the declining trend in harvested seabirds in the Faroes and in Iceland. Analyses on a larger geographic scale have demonstrated that murre species are sensitive to climate change on a circumpolar level, but also showed that even closely related species may react differently to a given temperature change. Taken together, these issues apparently driven by climate change will likely complicate the sustainable use of seabird populations so that previous harvest levels may no longer be sustained for some species, while sustainable levels may increase for others.

Action 1. Develop reporting guidelines as well as outreach and education plans to support sustainable harvest of seabirds

Future management of sustainable harvest levels will require better documentation of harvest levels and population numbers in several regions of the Arctic and the need for cooperative research, monitoring, and outreach will further increase. The involvement of local users in collecting information about seabird populations and related biology can be of considerable value for their management to ensure long term harvest sustainability and seabird conservation. Should stronger harvest restrictions become necessary, direct involvement of coastal communities will facilitate such changes and successful implementation.

- a. Guidelines should be developed for reporting harvest consistently throughout the circumpolar Arctic by 2016. Guidelines should draw on and expand approaches of harvest reporting from regions where it is currently most effective.
- b. Develop outreach and education plans to support sustainable harvest of seabirds with an emphasis on direct local involvement from coastal communities by 2016.
- c. The efforts of the AMBI Circumpolar Flyway and its members should offer outreach and engagement expertise intended as a helpful third party in regions where new seabird harvest regulations and/or amendments are proposed.

Objective 5: Begin to assess status of poorly known Arctic bird species.

Snowy Owls feed on small mammals during the breeding season, and are therefore strongly affected by annual changes in rodent abundance. Recent satellite tracking studies have shed new light on their ecology as birds respond to rodent population collapse or eruptions. Indeed, snowy owls have been found to range much further during their lifetimes than previously thought; some even moving between several circumpolar countries over the course of their lifetime. Satellite tracking and winter field studies also have found that some snowy owls spend substantial periods of time far offshore in marine regions during winter; presumably preying on marine birds and roosting on ice floes. These ideas are supported by the fact that snowy owls have been observed hunting seabirds that congregate in patches of open water in winter in the Arctic. Changes in winter sea ice extent and polynya formation that affect seabird, could also affect the food intake of snowy owls while living at sea in winter. Given the variety of habitats owls use during the year, the vast circumpolar migrations some owls make, and the changes taking place in Arctic sea ice environments in winter due to climate change, snowy owls are a priority species of the AMBI Circumpolar Flyway.

Action 1. Support the activities and priorities of the International Snowy Owl Working Group (ISOWG)

1. ISOWG recommends that the Snowy Owl should be considered for inclusion in the IUCN Red List because recent global population estimates (< 14,000 pairs) are considerably lower than those provided in the latest data from the IUCN Red List and BirdLife International (290 000 - 300 000 individuals). A further recommendation is to develop a more precise population estimate.
2. Given the nature of Snowy Owl movements across continents and national boundaries, the ISOWG highlights the need for wider-scale tracking of Snowy Owls throughout their range (satellite/GSM/GPS)
3. Continue ISOWG cooperation and knowledge sharing.
4. Develop an international action plan to identify and address threats and stressors.

Agencies Currently Involved in the AMBI circumpolar flyway work plan

- ▶ Conservation of Arctic Flora and Fauna, Seabird Expert Group (CBird)
- ▶ BirdLife International
- ▶ Environment Canada (both Science and Technology Branch and Canadian Wildlife Service)
- ▶ Circumpolar Snowy Owl Specialist Group

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Flyway	Objective	Action
East Asian Australasian Flyway	Secure important breeding and staging habitats of key AMBI-EAAF migratory bird species in arctic Russia and Alaska, with a focus on Spoon-billed Sandpiper, Bar-tailed Godwit and Dunlin.	1. Improve conservation work on Spoon-billed Sandpiper in the breeding grounds.
	Secure important breeding and staging habitats of key AMBI-EAAF migratory bird species in arctic Russia and Alaska, with a focus on Spoon-billed Sandpiper, Bar-tailed Godwit and Dunlin.	2. Document existence of important staging areas in coastal areas of Russia for priority species, and where possible encourage and assist their nomination as EAAF Partnership Network Sites with follow-up conservation actions.
		3. Encourage and assist in the nomination of important breeding and staging areas used by priority species in Alaska as part of the EAAF Partnership Flyway Site Network.
	Secure intertidal and associated habitat for Arctic waders at key staging and wintering sites in the EAAF	4. Share experience and methodologies for surveying shorebird distribution, monitoring population size and trends, conducting demographic studies, and managing habitats of priority species and other migratory birds.
		1. Ensure protection of northwest Sakhalin and West Kamchatka coast, notably intertidal areas.
		2. Gather better information on spring and fall staging sites and requirements of Dunlin and Bar-tailed Godwits along western Yukon-Kuskokwim Delta, coastal Bristol Bay, and northern side of Alaska Peninsula.
		3. Ensure protection of Jiangsu Coast ecosystem, especially Rudong and Dongtai area, for Spoon-billed Sandpiper and other Arctic shorebirds.
		4. Ensure protection of Luannan Coast especially Nanbao, Tanshan for Red Knot and other Arctic shorebirds
		5. Ensure protection at Yalu Jiang, Liaoning for Bar-tailed Godwit, Dunlin, Great Knot and other Arctic shorebirds
		6. Support conservation of the intertidal areas on the west coast of the Republic of Korea for the Spoon-billed Sandpiper, Great Knot, and Dunlin.
		7. Coordinate the implementation of actions related to the conservation of intertidal habitats in the EAAF and support to secure more resources for the operation of the EAAFP Secretariat based in Republic of Korea. Details will be discussed with the CAFF secretariat in Iceland.
	Prevent illegal harvest and regulate unsustainable legal harvest of Arctic migratory birds, with a focus on Spoon-billed Sandpiper, Lesser White-fronted Goose, Bar-tailed Godwit, and other priority species.	1. Support development and implementation of national and regional strategies and action plans for elimination of illegal harvest of birds in Russia.

Flyway	Objective	Action
		<ol style="list-style-type: none"> 2. Conduct outreach; assess the magnitude and impacts of legal subsistence harvest on priority birds in Alaska, with a focus on Bar-tailed Godwits. 3. Support development and implementation of national and regional strategies and action plans for elimination of illegal harvest of birds in China. 4. Support Singapore in its aim to help develop capacity for management of wetland and migratory birds in the region. 5. Cooperate with Singapore on the development of wide-scale International dialog focused on the conservation of Arctic migratory birds in South-East Asia. 6. Initiate a dialog to promote cooperation on the conservation of Arctic migratory birds on the EAAF with focus on selected priority actions identified within this Action plan and building on existing bilateral migratory bird agreements. 7. Initiate a dialog with India as Arctic Council observer with an aim to plan and implement actions to mitigate, reduce or eliminate illegal harvest of Arctic-migratory birds in India. 8. To ensure implementation of actions on illegal killing and unsustainable harvest, raise funds to hire a full-time coordinator in the Singapore office of BirdLife-Asia 9. Support cooperation of Secretariats of the EAAFP and African-Eurasian Waterbird Agreements (see AMBI African-Eurasian work plan for further details) to coordinate the work on Lesser White-fronted Goose conservation on East Asian Flyway via EAAFP Anatidae Working Group.

Flyway	Objective	Action
Americas Flyway	Evaluate, and determine appropriate mitigations, to impacts of overabundant goose populations on Arctic shorebird habitat	<ol style="list-style-type: none"> 1. Conduct research that is designed to identify and quantify the magnitude and mechanism(s) of impact that white goose habitat destruction has on breeding populations of shorebirds, in particular Semipalmated Sandpipers, in the eastern and Central Canadian Arctic. 2. Incorporate Inuit knowledge and advice into management recommendations.
	Evaluate and determine appropriate mitigations to loss and shifting of shorebird habitat from climate change	<ol style="list-style-type: none"> 1. Undertake an analysis that identifies the attributes and locations of shorebird habitats that are most likely to persist under future climate scenarios. 2. Encourage the protection of large contiguous tracts of shorebird habitat, in parts of the eastern and central Canadian arctic that are least susceptible to climate changes. 3. AMBI will explore opportunities to conduct assessments that quantify the vulnerability of key sites for shorebirds on the north coast of South America to climate change, and recommend actions to mitigate and/or to adapt to these impacts. AMBI will facilitate transfer of the knowledge and recommendations to habitat managers at the relevant sites.
	Mitigate habitat impairment from human intrusions and disturbance	<ol style="list-style-type: none"> 1. Communities and other partners associated with established WHSRN and IBA sites will be encouraged to conduct site assessments to identify critical threats to the species, and develop strategies to mitigate these threats. 2. AMBI will cooperate with initiatives that document the scope of shorebird hunting at selected sites along the Flyway. This includes working with hunters to assess level of take (in countries with legal hunts) and using direct observation and indirect measures (e.g., number of registered firearms, quantity and species of birds sold in local markets) as an indicator of hunt level (in countries where hunting is illegal).
	Mitigate habitat destruction and degradation from development	<ol style="list-style-type: none"> 1. AMBI will create maps showing the overlap of rice farms, shrimp farms, and key shorebird habitat sites in northern South America. 2. There are existing Best Management Practices (BMPs) for these activities elsewhere in the world, that could be adapted for this region. AMBI will make accessible searchable, accessible BMPs that are useful for rice cultivation and shrimp farming in northern South America. BMPs should take into account the potential exposure of shorebirds to harmful chemicals used in rice cultivation and shrimp farming, both in terms of type and application, and the timing of habitat use by shorebirds (e.g., for feeding, roosting, or both). 3. AMBI will work to ensure that key sites for shorebirds have been clearly identified and documented in publicly-available databases, that information on these sites is incorporated into development bank/multilateral agreement decision tools and environmental safeguard policies, and that the information is readily available to governments in the focal area and incorporated into development plans.
		<ol style="list-style-type: none"> 4. AMBI will work to obtain site designations (e.g., Western Hemispheric Shorebird Reserve Network, Ramsar sites), and ensure that information about each site's characteristics and ecosystem services is transmitted to local and national governments.

Flyway	Objective	Action
African-Eurasian Flyway	Secure intertidal non-breeding habitat of arctic waders in Bijagos Archipelago, Guinea-Bissau	1. Share experience on World Heritage nomination (International action) 2. Strengthen international recognition of the site (International action) 3. Protect the site from damaging developments (national/local action) 4. Support development of a site management committee and management plan, to guide management and to ensure that the needs of Arctic shorebirds are fully taken into account (site level action) 5. Mangrove restoration and provision of sustainable surveillance (local action) Action 6. Coordination of the implementation of the Bijagos component of the AMBI work plan (international action)
	Prevent unsustainable harvest of the Lesser White-fronted Goose	1. Reduce Lesser White-fronted Goose mortality rates caused by illegal harvest 2. Expand international Lesser White-fronted Goose conservation efforts to include the Eastern main sub-population.
	Secure breeding habitat of waders in Iceland by ensuring that national afforestation, and other land use policies and practices are sustainable.	1. Cooperate with Iceland to avoid risk to breeding water birds from changes in land use in the Icelandic lowlands, especially as regards the national afforestation policy.

Flyway	Objective	Action
Circumpolar Flyway	Obtain critical information on key at-sea sites for marine bird congregations	Develop and implement at-sea surveys Develop and implement at-sea tracking Identify areas where key marine seabird habitats intersect with current and especially emerging commercial fisheries, resource exploration and shipping developments
	Mitigate habitat degradation	Identify and participate in current initiatives to facilitate protection of marine birds and marine bird habitat Ensure that guidelines for responsible seabird colony viewing are made available to the tourism industry.
	Mitigate seabird and seabird bycatch	Undertake gill net bycatch assessments in key regions Develop and test bycatch mitigation measures
	Mitigate unsustainable harvest	Develop reporting guidelines as well as outreach and education plans to support sustainable harvest of seabirds
	Begin to assess status of poorly known Arctic bird species (e.g., snowy owl)	Support the activities and priorities of the International Snowy Owl Working Group



Photo: Jan van de Kam

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