

Statement to the Arctic Observing Summit (AOS) on the Circumpolar Biodiversity Monitoring Programme (CBMP)

Tom Barry¹; Tom Christensen², Catherine Coone³, Kari Fannar Larusson¹, Sierra Fletcher⁴, Mark Marissink⁵

¹ CAFF Secretariat, Iceland

² Aarhus University, Denmark, CBMP co-Lead

³ Bureau of Ocean Energy Management, U.S. Department of the Interior, CBMP co-Lead

⁴ NUKA Research

⁵ Swedish Environmental Protection Agency

Corresponding Author – Tom Barry (tom@caff.is)

Since 2008, the Circumpolar Biodiversity Monitoring Programme (CBMP) has sought to facilitate more rapid detection, communication and response to significant biodiversity-related trends and pressures affecting the circumpolar Arctic. CBMP is the cornerstone program of the Conservation of Arctic Flora and Fauna (CAFF), the Arctic Council’s biodiversity working group.

Recently completed biodiversity reports for freshwater and marine ecosystems, released in 2017 and 2019, describe the status of both "Focal Ecosystem Components" (key indicator species) and biodiversity monitoring programs around the Arctic. Each report was developed by a network of scientists and provides a unique opportunity to synthesize circumpolar knowledge while also highlighting many gaps. (See Fig 1 for status of marine biodiversity monitoring and Fig 2 for status of freshwater biodiversity monitoring). A terrestrial-focused report is planned for publication in 2020. An implementation plan for coastal regions is now being developed, following approval of that monitoring plan in early 2019.

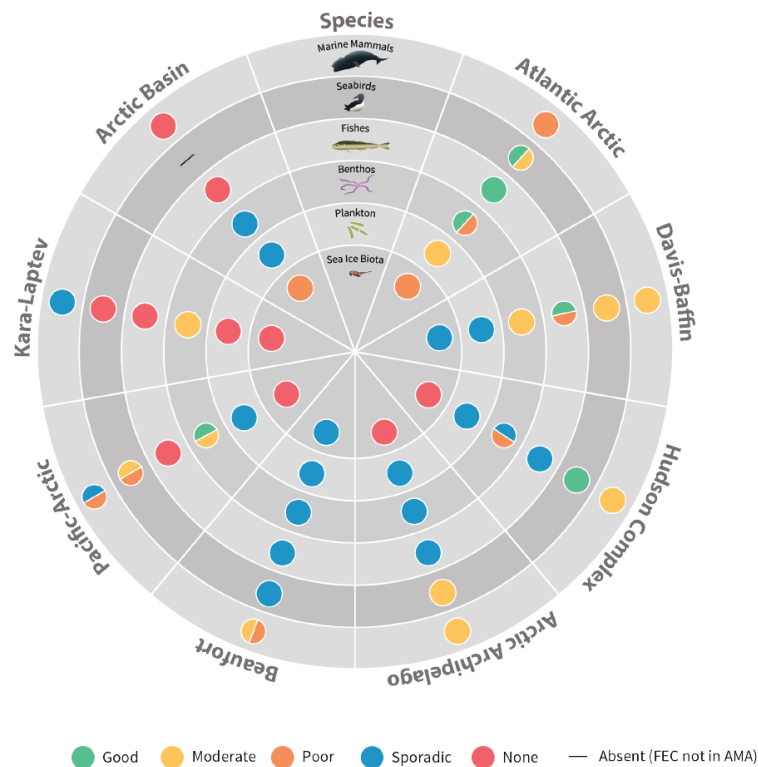


Fig 1: Current state of monitoring for Focal Ecosystem Components (FEC) in the Arctic marine regions of each country

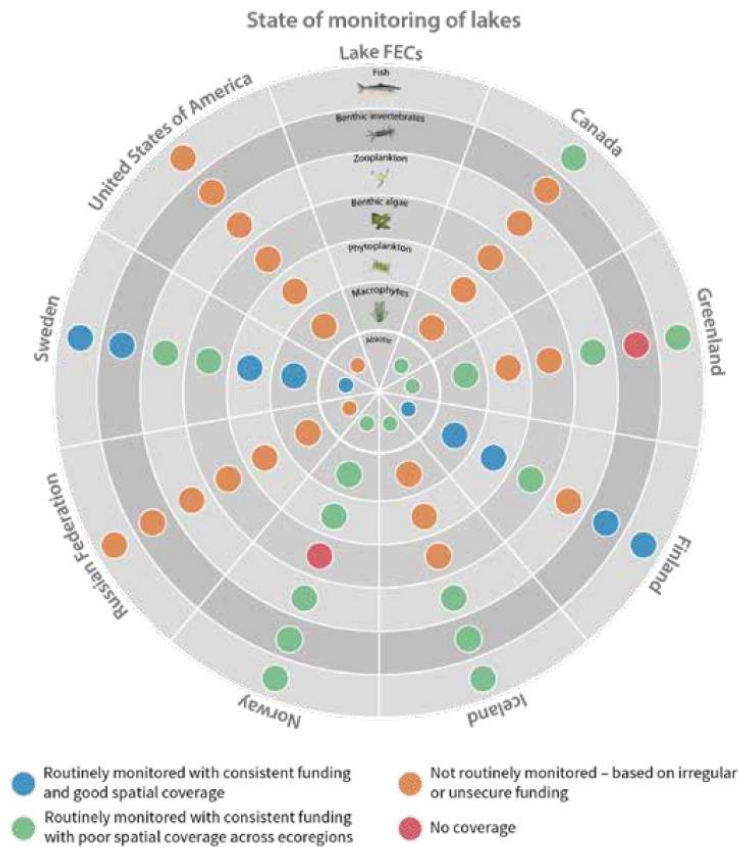


Fig 2: Current state of monitoring for lake Focal Ecosystem Components (FEC) in the Arctic regions of each country

CBMP approach

The CBMP is an international network of scientists, governments, Indigenous organizations, and conservation groups working to harmonize and integrate efforts to monitor the Arctic’s living resources and aims to incorporate Traditional Knowledge (TK) holders. The CBMP applies a question-driven and integrated ecosystem-based approach to long-term monitoring to describe ecosystem and biodiversity change, and to identify important trends (Fig. 1). It does this by:

- compiling, harmonizing and enhancing Arctic biodiversity monitoring efforts, thereby improving the ability to detect and understand significant trends; and
- reporting to, and communicating with, key decision makers and stakeholders, thereby enabling effective conservation and adaptation responses to changes in Arctic biodiversity.



The CBMP facilitates monitoring through the implementation of four Arctic Biodiversity Monitoring Plans (marine, coastal, freshwater and terrestrial). The fourth and final ecosystem monitoring plan, for coastal biodiversity, was approved at the May 2019

Arctic Council and is the first platform for co-production of knowledge approved by the Arctic Council. These monitoring plans represent agreements across Arctic States to compile, harmonize and compare results from existing Arctic marine biodiversity and ecosystem monitoring efforts, across States and oceans. Key elements, called Focal Ecosystem Components (FECs), have been identified for each ecosystem. Changes in FECs status likely indicate changes in the overall environments that require further attention and study.

The approach adopted in these plans follows the steps required for an effective and adaptive monitoring program (Lindenmayer and Likens 2009) and includes a consideration of what future priority questions and user needs the program should cover. While much work remains to integrate existing Arctic biodiversity monitoring, the continued implementation of the CBMP is a major achievement and a key contribution towards facilitating increased coordination and harmonizing of Arctic Monitoring including provision of advice to the Arctic states.

Data management

All data generated via the CBMP reports and activities is made accessible via the Arctic Biodiversity Data Service (ABDS) which is the online, interoperable data management system for biodiversity data generated via CAFF. The goal of the ABDS is to facilitate access, integration, analysis and display of biodiversity information for scientists, practitioners, managers, policy makers and others working to understand, conserve and manage the Arctic's wildlife and ecosystems. CAFF works with a range of partners to further develop cooperation, access to and management of biodiversity data and the ABDS serves as the Arctic node within the Global Biodiversity Information Facility (GBIF) and the Ocean Biogeographic Information System (OBIS).

Linkages to Arctic Observing Summit and other international efforts

The CBMP is cross cutting across multiple Arctic Council working groups, and leverages the assets provided by many international networks. CBMP data and products are paramount to the design and coordination of Arctic Observing Systems across the Arctic to ensure societal and scientific benefit.

The CBMP has been recognised by the UN Convention on Biological Diversity, and is the official Arctic Biodiversity Observation Network of the Group on Earth Observations Biodiversity Observation Network (GEOBON).

The Arctic Observing Summit (AOS) is a high-level, biennial summit that aims to provide community-driven, science-based guidance for the design, implementation, coordination and sustained long-term (decades) operation of an international network of Arctic observing systems. The AOS provides a platform to address urgent and broadly recognized needs of Arctic observing across all components of the Arctic system, including the human component. It fosters international communication and the widespread coordination of long-term observations aimed at improving understanding and responding to system-scale Arctic change.

Background on the Arctic Council

The Arctic Council is the leading intergovernmental forum promoting cooperation, coordination and interaction among the Arctic States, Arctic Indigenous communities and other Arctic inhabitants on common Arctic issues, in particular, on issues of sustainable development and environmental protection in the Arctic.

Further information:

- ww.cbmp.is
- [Arctic Marine biodiversity Monitoring Plan \(2011\)](#)
- [Arctic Freshwater biodiversity Monitoring Plan \(2012\)](#)
- [Arctic Terrestrial biodiversity Monitoring Plan \(2013\)](#)
- [Arctic Coastal biodiversity Monitoring Plan \(2019\)](#)
- Arctic Biodiversity Data Service (ABDS): www.abds.is
- State of the Arctic Marine Biodiversity report (2017): www.arcticbiodiversity.is/marine
- State of the Arctic Freshwater Biodiversity report (2019): www.arcticbiodiversity.is/freshwater