The **Arctic Marine Biodiversity Monitoring Plan (CBMP-Marine Plan)** is the first of four pan-Arctic, long-term, integrated biodiversity monitoring plans produced by the Conservation of Arctic Flora and Fauna (CAFF)'s **Circumpolar Biodiversity Monitoring Program**. Approved by the Arctic Council in 2011, the Marine Plan integrates existing circumpolar monitoring datasets and models to improve the detection and understanding of changes in Arctic marine biodiversity, and informs policy and management responses to these changes.

Development of the Plan was co-led by Norway and the United States and was the result of extensive discussions and consultations involving experts from Arctic coastal nations, Permanent Participants and other Arctic Council working groups. The plan identifies eight Arctic Marine Areas (AMAs) and Focal Ecosystem Components (FECs) to monitor at various trophic levels using specific methodologies, parameters, indicators and sampling designs drawn from existing monitoring capacity (programs), best practices and data.

The CBMP-Marine Plan is designed to provide comprehensive and timely circumpolar information on Arctic marine biodiversity to decision makers. Its implementation is currently co-led by Greenland and Norway.

### Top CBMP Marine Priorities in 2013

- Continue collecting, discovering, rescuing, aggregating and integrating existing Arctic marine biodiversity datasets to establish baselines; and contribute to the [Arctic Biodiversity Data Service (ABDS)](http://www.void.is/)
- Continue to identify and begin reporting on the best indicators of change building on existing monitoring and observation programs
- Continue to explore ways to utilize Traditional Ecological Knowledge
- Encourage participating states to follow up on the CBMP Marine plan by contributing to the monitoring of the plan’s focal ecosystem components, indicators, and the analyzing of existing datasets
- Continue to contribute to international and national initiatives, e.g., the annual NOAA Arctic Report Card, Convention on Biological Diversity, Global Biodiversity Outlook, Group on Earth Observations Biodiversity Observing Network, and others.
- Improve and stabilize funding for full participation by all Arctic Council coastal states and Permanent Participants
- Promote the relevance and importance of the CBMP-Marine Plan

### Links with National Priorities

Responsible resource development and sound environmental stewardship rely on a scientifically defensible knowledge base. [Fisheries and Oceans Canada](http://www.dfo-mpo.gc.ca) leads Canada’s participation in the Marine Plan, supporting [Canada’s Arctic Foreign Policy](http://www.dfo-mpo.gc.ca), the [Northern Strategy](http://nrcan.gc.ca), and priorities identified by northerners. The Marine Plan makes use of existing science and traditional knowledge regarding polar bears, marine mammals, seabirds, and fisheries, and incorporates conservation and ecosystem-based management, such as the [Tarium Niryutait Marine Protected Area](http://www2.eic.nrcan.gc.ca/), in the Inuvialuit Settlement Region.

Other elements of the Marine Plan contribute to Fisheries and Oceans’ efforts to protect corals and sponges in Baffin Bay and to identify ecologically and biologically sensitive areas (EBSAs). The Marine Plan also informs the development of the [Canadian High Arctic Research Station](http://www.digital.nrcan.gc.ca/)’s science initiatives.

The Marine Plan shares common indicators with the [Canadian Northern Contaminants Program (NCP)](http://www.void.is/), which examines contaminant levels, trends and effects in marine ecosystems, and conducts annual monitoring of key focal ecosystem components.

At the international level, the CBMP contributes to a number of important initiatives (see left).
**Marine Expert Network Summary of 2013 Achievements**

**Sea Ice Biota**
- Validated species nomenclature of ice algae (ongoing)
- Evaluated sea ice algae diversity and abundance (including phytoplankton)
- Published as primary or contributing author, e.g., sub-ice colonial Melosira arctica in first-year ice published in Diatom Research, and one book and one chapter in CAFF’s Arctic Biodiversity Assessment

**Contact:** Michel Poulin

**Benthos**
- Assessed diversity and abundance of epibenthic (surface of the sea floor) and endobenthic (within the sediment on the sea floor) organisms in the Amundsen Gulf and the Beaufort Sea
- Contributed to two chapters of the World Oceans Assessment of the United Nations

**Contact:** Philippe Archambault

**Plankton**
- Established baselines on the taxonomic makeup and distribution of microbes in the Arctic Ocean, including analyses of archived specimens
- Conducted ongoing literature searches for valid phytoplankton species records
- Contributed data to maps of Arctic zooplankton distribution
- Created teaching materials depicting key points relevant to Arctic microbial plankton diversity and ecology
- Validated indicator species, and species ratios, suitable for monitoring change in Arctic waters
- Published a review article on pelagic Arctic bacteria, and produced publications in the primary literature on other plankton (ongoing)

**Contact:** Connie Lovejoy

**Seabird**
- Led CAFF’s seabird expert network (CBird), which is finalizing its monitoring plan
- Contributed to CAFF’s Arctic Biodiversity Assessment (ABA)

**Contact:** Grant Gilchrist

**Fish**
- Rescued legacy data on Canada’s Arctic marine fish
- Co-led the Marine Fish Expert Network
- Contributed to the 2013 NOAA Arctic Report Card
- Conducted biodiversity surveys of benthic marine fishes
- Collected and aggregated existing data on species distributions in Canadian Arctic marine areas
- Examined genetic population structure, movement patterns and habitat use
- Examined food web structure and predator-prey interactions via stable isotope and stomach content analyses

**Contact:** Steve Ferguson

**Marine Mammals**
- Rescued legacy data on Canada’s Arctic marine mammals, including old marine mammal surveys in Lancaster Sound
- Produced summary report on historical marine mammal abundance surveys for Canadian Arctic
- Published circumpolar ringed seal report (CAFF) on first international meeting in Norway 2012
- Held Nunavut seal workshop in Iqaluit in early 2014 to plan community-based monitoring program for the territory
- Furthered development of a Fisheries and Oceans Canada governance document on how to archive and disseminate Canadian Arctic historical marine mammal tissue samples and database
- Assessed polar bear population genetic structure across Canadian Arctic Marine Areas
- Developed monitoring techniques to assess polar bear body condition using hunter harvest samples

**Contact:** Steve Ferguson

**General**
- Provided Canadian leadership (Fisheries and Oceans Canada) for implementation of the Marine Plan, supported by other government departments, academia, Inuit organizations and northern wildlife management boards
- Co-chaired CBMP-Marine Steering Group in 2013
- Funded Canadian participation: $77K in 2013
- Provided secretariat support for the Marine Steering Group and Canadian National Network, with the assistance of the Association of Polar Early Career Scientists (APECs)
- Photographed and digitized Traditional Ecological Knowledge relevant to Arctic marine biodiversity from maps of the Inuvialuit Settlement Region (continued by the Inuvialuit Settlement Region Joint Secretariat)

**For more information**

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