The Arctic Marine Biodiversity Monitoring Plan is the Marine component of the Conservation of Arctic Flora and Fauna (CAFF)’s Circumpolar Biodiversity Monitoring Program (CBMP).

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. It consists of four Monitoring Plans (marine, coastal, freshwater and terrestrial) that integrate existing monitoring and data to better understand changes in Arctic biodiversity. CBMP-Marine is organized through a Marine Steering Group and six Expert Networks (Sea ice biota, Plankton, Benthos, Fishes, Seabirds and Marine mammals). These networks provide the framework to implement the CBMP Arctic Marine Biodiversity Monitoring Plan (CBMP-Marine Plan) and to facilitate more rapid detection, communication, and response to the significant biodiversity-related trends and pressures affecting the circumpolar Arctic. CBMP-Marine engages more than 75 scientists and representatives of Arctic Council states, Permanent Participants and Observer countries.

Top CBMP-Marine Activities planned for 2019

In 2018, CBMP-Marine disseminated the findings from the State of the Arctic Marine Biodiversity Report (SAMBR), completed the prior year. SAMBR represents the first integrated reporting outcome of the CBMP-Marine and CBMP overall. Findings from the report were presented at the Arctic Biodiversity Congress 2018 and the World Conference on Marine Biodiversity, among other national and international fora. CBMP-Marine also started the first steps towards reviewing and adjusting marine monitoring activities according to advice contained in SAMBR.

In 2019, CBMP-Marine is focused on convening a scoping workshop to review key elements of the monitoring program and identify potential areas of collaboration within the Arctic Council.

CBMP-Marine connections to activities in Greenland

Greenland/Denmark has committed to secure the arctic biodiversity via the ‘Denmark, Greenland and the Faroe Islands: Kingdom of Denmark Strategy for the Arctic 2011-2020’ (http://um.dk/en/foreign-policy/the-arctic).

The Greenland Institute of Natural Resources (GINR) (www.natur.gl) is the center for biological research and monitoring in Greenland. Its primary objective is to provide the Government of Greenland (http://naalakkersuisut.gl/en) with scientific advice for the sustainable use of the living resources, as well as the safeguarding of the environment and biodiversity.

GINR has monitoring programs for fish, crustaceans, mammals and birds that are important for Greenland. The data on marine mammals and seabirds are available to the CBMP Marine through the CAFF CBird group and the Marine mammal expert network (www.caff.is/marine). Data from the fisheries surveys are still to be incorporated into CBMP Marine.

Greenland Climate Research Centre (GCRC) (https://gcrc.gl) at GINR manage two marine ecosystem monitoring programs, in a high Arctic system and in a low Arctic coastal (fjord) ecosystem as part of the Greenland Ecosystem Monitoring Program (GEM) (http://g-e-m.dk). Data from these monitoring programs are incorporated into the CBMP Marine expert networks.

Offshore sampling programs on ecosystem based surveys and environmental studies lead by GINR researchers will also be made available to relevant CBMP Marine expert networks.
MARINE EXPERT NETWORKS SUMMARY OF 2018 ACHIEVEMENTS

Benthos
Workshop arranged on standardization of benthos-bycatch data from national trawl assessment surveys across the Arctic. The series of annual workshops in 2017-2020 is financially supported by Danish Environmental Protection Agency (Dancea) and Nordic Council of Ministers: ‘Long-Term Benthos Monitoring network for detecting changes in the Arctic benthic Ecosystem (LTM+Benthos) 2017-2020, Second workshop, Reykjavik, Iceland, 12-16 November 2018’.

With regard to benthos data collection, 2018 was dedicated to video documentation of benthic habitats in 1) Disko Bay in West Greenland in connection to acoustic mapping of the seafloor, and 2) a shallow bank-slope-basin area in Southwest Greenland with previous indications of a potential Vulnerable Marine Ecosystem (VME).

Plankton
Time series on phytoplankton and zooplankton species composition and abundance is collected as part of two marine subprograms of the Greenland Ecosystem Monitoring program (GEM) funded by the Danish Environmental Protection Agency and the Danish Energy Agency (Dancea). These data are supplemented by key physical, chemical and biological data from a high Arctic (since 2002) and a low Arctic (since 2005) fjord location.

Samples for phytoplankton and zooplankton were collected offshore in west Greenland which will be merged with data from northeast. More offshore sampling is planned in west Greenland. These data sets contribute new information available to the expert network on offshore plankton communities in Greenland.

Sea Ice Biota
Information on previous sea ice studies in Greenland has been included in CBMP Marine efforts to compile a pan-Arctic data set and is referenced in the ‘Status of Arctic Marine Biodiversity Report (SAMBR) 2017’. Sea ice biota is not part of ongoing monitoring programs in Greenland and existing data is based on research projects.

Fish
GINR carries out annual fisheries surveys in West and East Greenland, focusing mainly on commercially important species. GINR has at present limited resources to participate actively in the fish expert network.

Seabirds
A demographic thick-billed murre harvest model for the North Atlantic was developed by Greenland/Denmark and Canada. A scientific paper lead by M. Frederiksen is underway. A large eider survey were carried out by GINR in Northwest Greenland, along with annual community-based programs. Thick-billed murre colonies were surveyed in Northwest Greenland (the Upernavik area), in South Greenland and East Greenland. Finally, an important Arctic Tern colony was surveyed in Disko Bay.

Marine Mammals
There were aerial surveys for walrus in the North Water Polynia, with beluga, narwhal and bearded seal as secondary targets, narwhals in NE Greenland and ringed seals in Ilulissat Icefjord. We collected local knowledge to document new terrestrial haul-outs of walrus in Qaanaaq. Hunters collected biopsies of bowhead whales in Disko Bay for monitoring abundance. We continued with telemetry studies of ringed seals, narwhals, bowhead whales, and polar bears. The marine mammal expert network met on September 25 in Rovaniemi, Finland.

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Data and graphics generated by CBMP are available on the Arctic Biodiversity Data Service at https://abds.is