

Arctic Marine Biodiversity Monitoring Plan USA 2014 Implementation



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 [CBMP-Marine 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 [CBMP-Marine 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 Norway and Russia.



Photo: Kathy Kuletz, US Fish and Wildlife Service

Top CBMP Marine Priorities in 2014

- Continue collecting, discovering, rescuing, aggregating and integrating existing Arctic marine biodiversity datasets to establish baselines; and contribute to the [Arctic Biodiversity Data Service \(ABDS\)](#)
- Begin reporting on the best indicators of change building on existing monitoring and observation programs – start editing State of the Arctic Marine Biodiversity Report (SAMBR).
- Continue to explore ways to utilize Traditional Ecological Knowledge
- Encourage participating countries 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. 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

The [United States Interagency Arctic Research Policy Committee \(IARPC\)](#) is charged with developing five-year plans for U.S. government funded research in the region. For the years 2013-2017 the IARPC objectives that matches of the [CBMP-Marine Plan](#) are:

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- Sea ice and marine ecosystem studies
- Observing systems

The U.S.A. will pursue four activities that contribute to the [CBMP-Marine Plan](#). They are:

1. Develop a framework of observations and modeling to support forecasting of sea ice extent
2. Identify and study sites in the Pacific Arctic where climate feedbacks are active
3. Complete deployment of a Distributed Biological Observatory (DBO) in the U.S. and neighboring Arctic Ocean to create long-term data sets on biological, physical and chemical variability and ecosystem response
4. Initiate a Pacific Arctic Climate-Ecosystem Observatory north of the Chukchi Sea
5. Develop integrated ecosystem processes research in the Beaufort, Chukchi and East Siberian Seas as well as parts of the East Siberian and Pacific Arctic Ocean

Marine Expert Network Summary of 2014 Achievements

Benthos ([Dr. Katrin Iken](#))

In preparation for the State of the Arctic Marine Biodiversity Report, the [Benthic Expert Network](#) is following the recommendations of the 2011 implementation plan. In 2014 field work was carried out in the Chukchi Sea within the Distributed Biological Observatory (the U.S. CBMP sentinel stations in U.S. waters). The U.S. Benthic group is pursuing a joint US-Canada Trans-boundary program in the Beaufort Sea. Dr. Katrin Iken of the [Benthic Expert Network](#) is taking part in the decadal [RUSALCA](#) synthesis with her Russian colleagues.

Plankton ([Dr. Russell Hopcroft](#))

The Plankton Expert Network continued to consolidate zooplankton data. Updated maps of species locations were produced. Prediction probability, modeling of zooplankton species in the Arctic was continued. These data are being put into the [AOS website](#) in preparation for transfer to the [ABDS](#). Meta-zooplankton species lists which are a legacy of the Census of Marine Life maps are being developed and the genetic library is growing. Parallel efforts are underway for the Pacific Arctic AMA by other funding agencies/industry.

Sea Ice Biota ([Dr. Bodil Bluhm](#))

The US representative to the [Sea Ice Biota Expert Network](#), participated remotely in the discussions at the ABA meeting in Trondheim (December) and the SAMBR Writing Meeting in Nuuk (April). He has begun a compilation of information on the geographic extent of sea ice microbial DNA sequences in the scientific literature and presented the results as a map. Additional efforts are underway to expand the number of publications represented and to additionally categorize the biodiversity by taxonomic level, in preparation for finalizing the sea ice microbial component of SAMBR.

Fishes ([Dr. Catherine Mecklenburg](#))

Species compositions and distribution data are being collected and baseline distributions are being drafted by the [Marine Fishes Expert Network \(MFEN\)](#). In 2014 the [Fish Expert Network](#) applied and received a Norwegian Ministry of Foreign Affairs grant to prepare an atlas and guide to the marine fishes of the Arctic region. Mecklenburg is lead author and Edda Johanessen (Norway) is project manager. Mecklenburg worked with collaborators to prepare a poster about the project, presented at the [Arctic Biodiversity Congress](#).

Seabird ([Dr. David Irons](#))

The [Circumpolar Seabird Group \(Cbird\)](#) will discuss a draft of the seabird report during their annual meeting, to be held prior to the World Seabird Union conference in South Africa. The [Seabird Information Network \(SIN\)](#) and relevant colony data will be archived with the [ABDS](#) and the Circumpolar Seabird Data Portal via [Seabirds.net](#). [Cbird](#) completed its Circumpolar Seabird Monitoring Seabird Plan, and published the article "[The Status of Glaucous Gulls in the Circumpolar Arctic](#)" in Arctic. A special issue of Progress in Oceanography on the Pacific Arctic ecosystem was published.

Marine Mammals ([Dr. Rosa Meehan](#), [Dr. Peter Thomas](#))

The [Marine Mammal Expert Network](#) populated a marine mammal database on ice-dependent species: ringed, bearded, ribbon, spotted, harp and hooded seals, beluga, narwhal, bowhead whale, walrus and polar bear. This database represents a major collaboration recently published in [Conservation Biology](#). Population estimates are included by stock (or subpopulation) for each species as well study details and observed trend where determinable. The database is planned to incorporate harvest data and health parameters.

General

- NOAA will continue to lead the U.S. delegation to the CBMP-Marine Plan in 2015
- NOAA and the Marine Mammal Commission will continue to fund U.S. experts to attend CBMP working group meetings and to synthesize information for the State of the Arctic Marine Biodiversity Report
- Baseline distributions of species within each network will be refined
- The U.S. will continue to fund data management and aggregation for submission to the ABDS.
- The U.S. will continue to coordinate U.S. activities to work with other Arctic country scientists from the expert networks
- The U.S. will work towards development of a Pan-Arctic Atlas of species range extent and changes through space and time

For more information

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