The Arctic Marine Biodiversity Monitoring Plan (the 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 (CBMP). Approved by the Arctic Council in 2011, the Marine Plan will integrate existing circumpolar monitoring datasets and models to improve the detection and understanding of changes in Arctic marine biodiversity, and inform 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 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 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 Canada and Greenland.

**Top CBMP Marine Priorities in 2012**

- Funded the U.S. portion of the CBMP-Marine data management effort ($200K). Worked on identifying, providing access to and aggregating datasets including legacy data.
- Contributed to the CBMP-Marine Steering Group and choose U.S. scientists to participate in the Expert Networks. Dr. Kathleen Crane, NOAA appointed U.S. Chair, Dr. Sue Moore, NOAA co-chair. Selected the following members to represent Expert Networks: Dr. Rolf Gradinger-Dr. Bodil Bluhm Sea Ice Biota; Dr. Russ Hopcroft, Plankton; Dr. Katrin Iken, Benthos; Dr. Kitty Mecklenburg, Fish: Dr. Peter Thomas, and Dr. Rosa Meehan, Marine Mammals.
- Led the Plankton Expert Network. (Dr. Russ Hopcroft)
- Co-Led the Fish Expert Network (Dr. Kitty Mecklenburg)
- Funded the Alaskan Inuit Circumpolar Council Representative who is a member of the Fish Expert Network

**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 2014-2017 The IARPC objectives that match those of the Marine Plan are:

1. Sea ice and marine ecosystem studies
2. Observing systems

The U.S.A. will pursue four activities that contribute to the 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 Beaufort and Chukchi Seas and the contiguous Arctic Ocean 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. Develop integrated ecosystem processes research in the Beaufort and Chukchi Seas region

[www.arctic.noaa.gov](http://www.arctic.noaa.gov)
[www.aoos.org](http://www.aoos.org)

[www.caff.is/marine](http://www.caff.is/marine)
USA Marine Expert Network Summary of 2012 Achievements

Benthos
The benthos team took efforts to make sampling standards comparable. Benthic expert members contacted researchers and data set aggregation progressed (needed for indicator development). The Benthic team developed cross-linked indicators on the regional scale that relate benthic communities to hydrography, pelagic production, fish predators. The U.S. member of the Marine Benthos EN is Katrin Iken.

Plankton
Datasets continued to be consolidated. Parallel efforts were underway for the Pacific Arctic AMA by other funding agencies/industry (several students are working in this activity). More baseline data were collected during the summer of 2012 on RUSALCA, and other cruises in the Pacific Arctic region. These data will be located on the AOOS web site in preparation for transfer to the CBMP portal. The Arctic Biodiversity Assessment refinement continued. A meta-zooplankton species list which is a legacy of CoML maps were developed and the genetic library grew significantly. The US member of the Plankton EN is Russell Hopcroft.

Sea Ice
In 2012, no significant sea ice biota monitoring was taking place in the Arctic. Accumulation of macrofauna data progressed considerably. A comprehensive list based on published and unpublished data is available. The U.S. representative to the Marine Sea Ice Biota EN, Bodil Bluhm, started a compilation of sea ice meiofauna data. Meta data and raw data reside in a single data base at present. In the future the biological sampling will be linked to regions of fast ice, drift ice, multi-year ice and annual ice. A goal will be to gather data from gaps in the high Arctic, and a standardization of monitoring approaches is being pursued.

Fish
In June 2012 Kitty Mecklenburg was confirmed as a co-lead of the Marine Fish EN. Within the Fish EN, species composition and distribution data were collected and baseline indicators will be determined in 2013. Species distribution maps were developed for the first 100 species out of approximately 245. Data sharing agreements were initiated. Information from traditional knowledge on marine fishes was gathered. Data are being entered into the Pacific Arctic data Node (RUSALCA) on the AOOS web site.

Seabird
CAFF’s Seabird Expert Network (CBird) has nearly completed its monitoring plan.

Marine Mammals
The U.S. representatives to the Marine Mammal EN are Rosa Meehan and Peter Thomas. Work in 2012 and 2013 focused on abundance estimates. Future parameters include harvest, body condition and health information. The CAFF Ringed Seal Circumpolar Monitoring group developed indicators specific to ringed seals. A table on marine mammal abundances has been completed for the Arctic Biodiversity Assessment.

Priorities in 2013
NOAA will continue to:
• lead the U.S. delegation to the Marine Plan in 2013,
• fund experts to attend CBMP working group meetings,
• develop baselines within each network,
• fund data management and aggregation for submission to the Arctic Council’s Data portal, the Arctic Biodiversity Data Service www.abds.is
• coordinate U.S. activities to work with other Arctic country scientists on the expert networks,
• develop Pan Arctic Atlas’s of range extent and changes through space and time.