

# — THE ISMN IN ACTION —

## OBSERVATION & ANALYSIS OF PLANKTON BIODIVERSITY & ITS EFFECT ON ECOSYSTEM SERVICES

In the coastal and shelf waters of the Gulf of Maine, the ISMN facilitates and integrates across observing programs to provide critical information about marine ecosystem change.

Plankton under a microscope



## DATA COLLECTION & MANAGEMENT

- With funding from NOAA, U.S. IOOS, and the Bureau of Ocean Energy Management, the ISMN is expanding the national Marine Biodiversity Observation Network (MBON) into the Gulf of Maine.
- The ISMN has re-established collection of oceanographic biodiversity data at two strategically located time series stations, filling a gap in observing the phenology of change in plankton production cycles. The time series stations supplement existing planktonic biodiversity observing conducted by the National Marine Fisheries Service and the National Science Foundation, Long Term Ecosystem Research Northeast Shelf Project in the Northeast U.S. coastal and shelf waters, and the Canada Department of Fisheries and Oceans in Canadian waters.

## DATA SYNTHESIS

- The Center for Analysis, Prediction and Evaluation (CAPE), a key part of ISMN's role centralized hub for information, synthesizes observing data indicating change in lipid-rich zooplankton, which is a key sentinel variable supporting the Gulf of Maine pelagic food web. Existing data and models of zooplankton abundance and distribution are both combined with observations of foraging patterns of the endangered, plankton-feeding North Atlantic right whale for use by federal and state agencies in decisions about actions to save the North Atlantic right whale from extinction.
- The ISMN-MBON and the Northeast Shelf Long Term Ecosystem Research program, supported by the National Science Foundation in partnership with the NOAA National Marine Fisheries Service oceanographic survey, are developing a collaboration to understand planktonic diversity and how the rapidly warming U.S. Northeast shelf affects the abundance and distribution of forage fish, such as herring and sand lance, which are foundational to Northeastern U.S. fisheries, and populations of marine mammals and seabirds.

Visit [www.sentinelmonitoring.org](http://www.sentinelmonitoring.org) for more information

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