

Percentage of all real-time continuous ocean measurements in the region conducted by NERACOOS:



NERACOOS

NORTHEASTERN REGIONAL ASSOCIATION
of COASTAL OCEAN OBSERVING SYSTEMS



7.8 MILLION

Ocean and weather
observations made by
NERACOOS in 2013



3.2 MILLION

Web page views of
NERACOOS data
and information on
neracoos.org and
ndbc.noaa.gov in 2013



93%

Percentage of survey respondents
who indicated that if the data were
not available to them through
NERACOOS it would be a serious
loss or an inconvenience

IOOS[®]
INTEGRATED OCEAN OBSERVING SYSTEM

Why do people need the information?

“We decide which boat we can take out for missions and what type of survival equipment we can wear” – USCG

“go/no go decisions for moving large commercial ships and tug/barge combinations in Penobscot Bay” – Pilot

“to decide when to go to sea and how long we might be able to stay, as well as what areas might be best to go. Its not just for fishing info but safety too. I also use it to verify the forecast to see if weather maybe unexpectedly changing.” – Commercial Fishermen

“Oil spill trajectory analysis” – NOAA Spill Response

“I use this data to discuss data with my middle school students. When there are big storms or other major events we look at the data and make our own predictions.” – Educator

“Developing water quality assessments, understanding the effects of climate change, looking at extreme event effects” – Environmental Manager



NERACOOS SYSTEM OPERATORS

“NERACOOS is collecting critical ocean data and providing valuable tools that will help us understand changes in our ocean and their impact on our coasts, fisheries, and climate. Their buoy system is the workhorse that drives many important decisions made by fishermen, regulators, offshore wind developers, and recreational users of the Gulf of Maine and beyond.”

U.S. Senator Angus King (Maine)



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U.S. Senator Angus King (Maine)



UCONN

{ Long Island Sound
buoy array }

THE
UNIVERSITY
OF RHODE ISLAND

{ Estuarine nutrient
monitoring }



{ Harmful algal
bloom sensors }

NERACOOS

NORTHEASTERN REGIONAL ASSOCIATION
of COASTAL OCEAN OBSERVING SYSTEMS

A satellite map of the Northeastern United States coastline, showing the Atlantic Ocean, the Chesapeake Bay, and the Long Island Sound. The land is green with some brown patches, and the water is blue with some greenish areas near the coast.

NERACOOS

NORTHEASTERN REGIONAL ASSOCIATION
of COASTAL OCEAN OBSERVING SYSTEMS

Our mission is to produce, integrate and communicate high quality information that helps ensure safety, economic and environmental resilience, and sustainable use of the coastal ocean.



- **better understanding** the coupled coastal-ocean system is necessary for sustained use.
- **end-user driven** and providing **open access** to **high-quality information**.
- **neutral** and **science-based**.
- **collaborating** and providing **leadership** in support of regional, national & international coastal ocean observing and modeling.
- **educating** people so they can better understand their connection with the ocean.
- **cultivating innovation** and **the next generation** of ocean professionals and tools.

To Produce, Integrate and Communicate

NERACOOS SYSTEM OPERATORS



{ Data/website management
and product development }



{ Estuarine and
coastal buoys }



UMass | Dartmouth

{ Ocean forecasting }



THE UNIVERSITY OF
MAINE

{ Gulf of Maine buoy array,
HF-radar and satellite products }



{ Wave forecasting, harmful algal
bloom and nutrient monitoring }



{ Harmful algal
bloom sensors }



UConn

{ Long Island Sound
buoy array }

THE
UNIVERSITY
OF RHODE ISLAND

{ Estuarine nutrient
monitoring }

NERACOOS

NORTHEASTERN REGIONAL ASSOCIATION
of COASTAL OCEAN OBSERVING SYSTEMS

To Produce, Integrate and Communicate:

NERACOOS Long Is. Sound Central Long Island Sound

Lat: 41.13 Lon: -72.65

Latest Observation: 12/04 6:00 AM EST

Variable	Value
Wind speed	11 knots (13 mph, 21 kph)
Wind direction	WNW (300°) True
Wind gust	15 knots (17 mph, 28 kph)
Wave height	2.3 ft (0.7 m)
Wave period	5.0 sec
Air temp	41 ° F (5.0 ° C)
Air pressure	NA
Water temp	49 ° F (9.2 ° C)



Owned/Operated by:



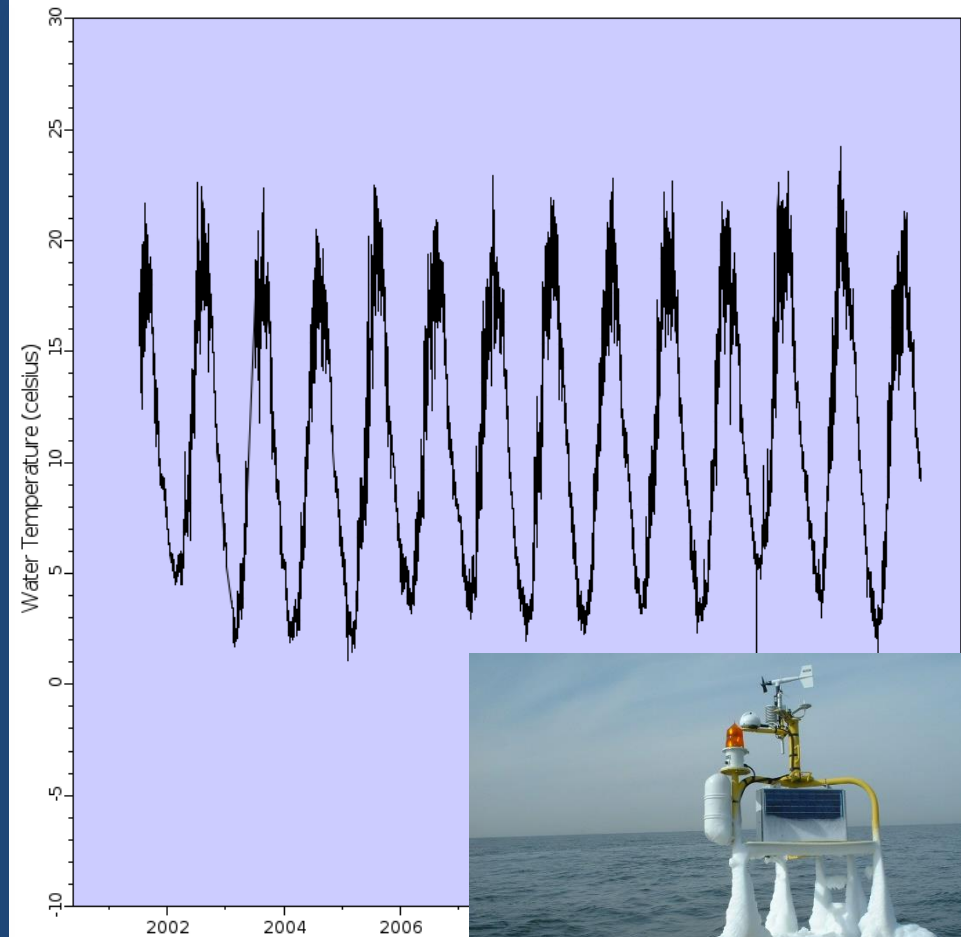
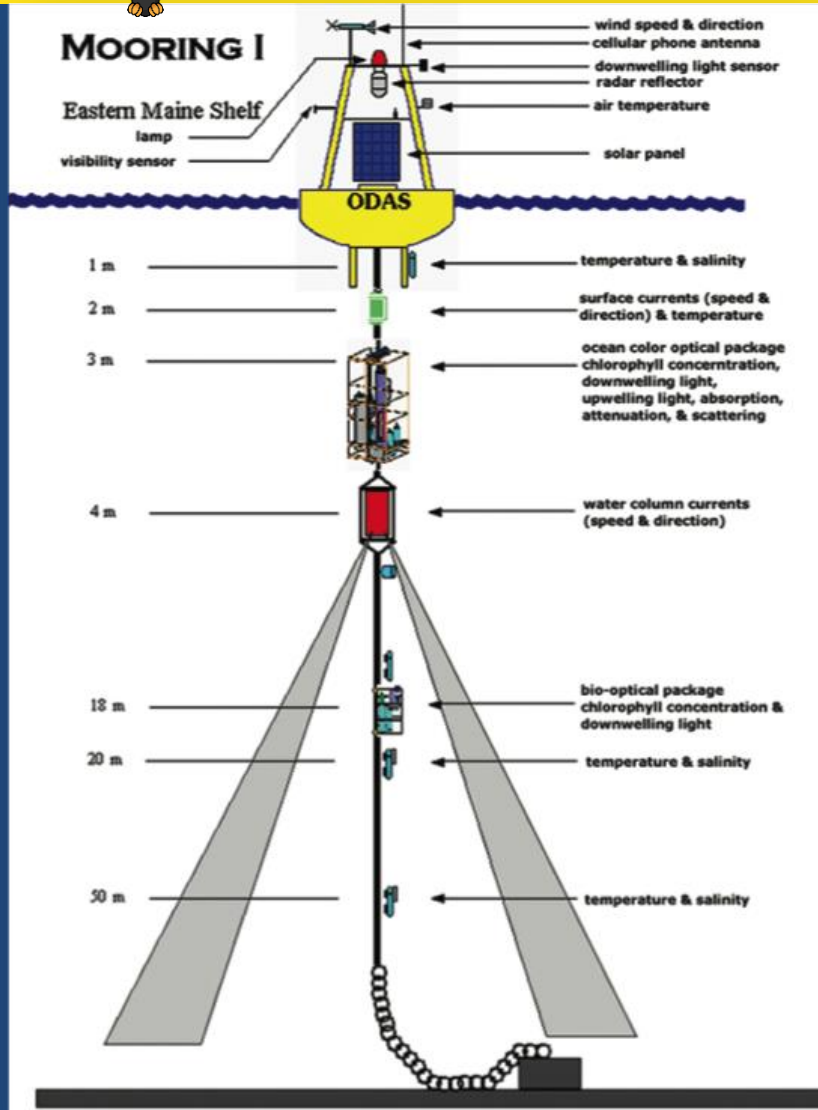
LISICOS

✓ Like You, Riley Young, David and 386 others like this.

- Buoys
 - 6+1 Gulf of Maine – UMaine
 - 1 CDIP - UNH
 - 1 CO2 – UNH
 - 1 Estuarine – UNH
 - 3 Long Island Sound – UConn
 - 3 ESP HAB - WHOI
- HFR – Surface Currents - UMaine
- Shore-stations
 - 2 water quality – UNH & URI
 - 3 Water Level
- Forecasts
 - Northeast Coastal Ocean Forecast System (NECOFS) - UMassD
 - Inundation forecasts
 - Wave Watch III – BIO
- Data Management and Communications - GMRI



Multi-purpose buoys

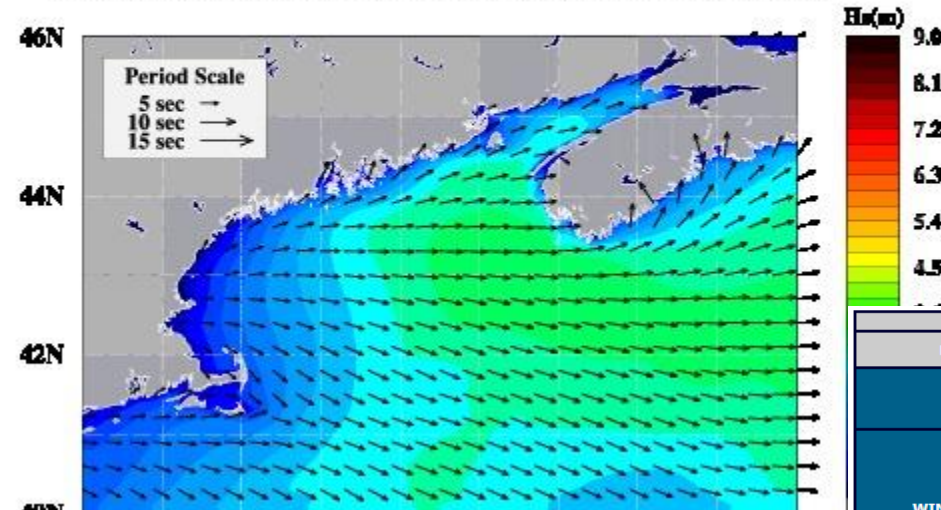












— A01 Sbe37 - CTD
(depth=1.0)
Data courtesy of Univ. of Maine



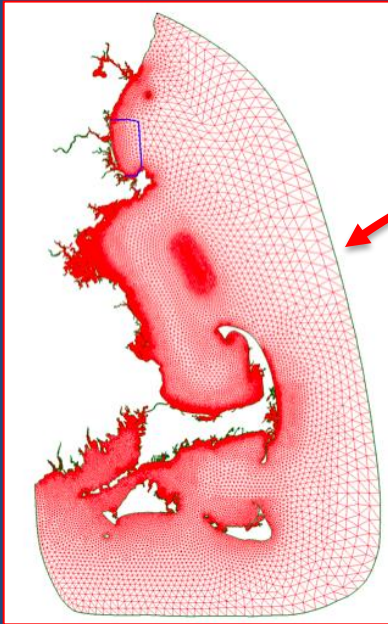
WaveWatch III

Sig. Wave Heights (contours), Wave Directions (dir. of vectors), Wave Periods (length of vectors) At 2014120412

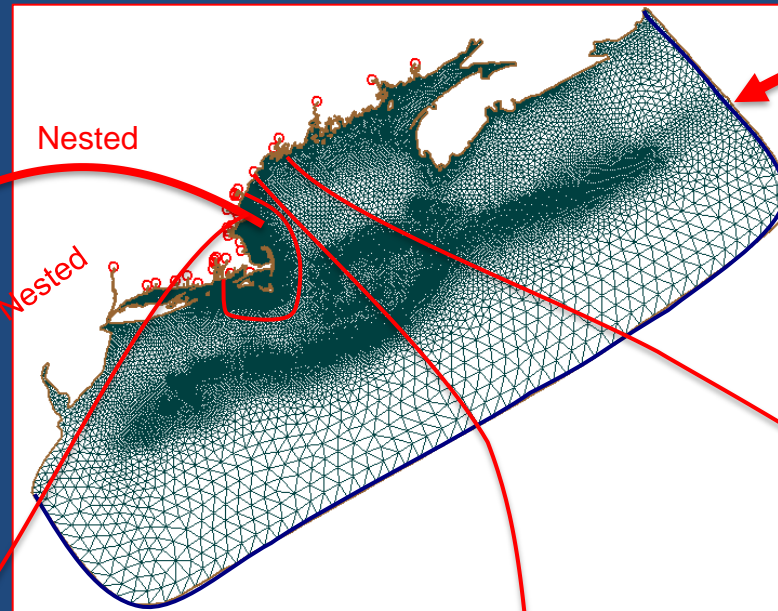


Date	Wed				Thursday				Friday								
HOUR	10:00 PM	1:00 AM	4:00 AM	7:00 AM	10:00 AM	1:00 PM	4:00 PM	7:00 PM	10:00 PM	1:00 AM	4:00 AM	7:00 AM	10:00 AM	1:00 PM	4:00 PM	7:00 PM	10:00 PM
WIND FORECAST																	
WIND SPEED (MPH)	14	12	11	10	6	5											
							NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
WIND DIRECTION																	
	NW	N	NNE	NNE	NE	ENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
WAVE FORECAST																	
WAVE HEIGHT (feet)	1.3	1.1	0.9	0.8													
					NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
WAVE PERIOD (seconds)	4.6	5.0	5.7	5.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PRIMARY DIRECTION																	
	ENE	E	E	E	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

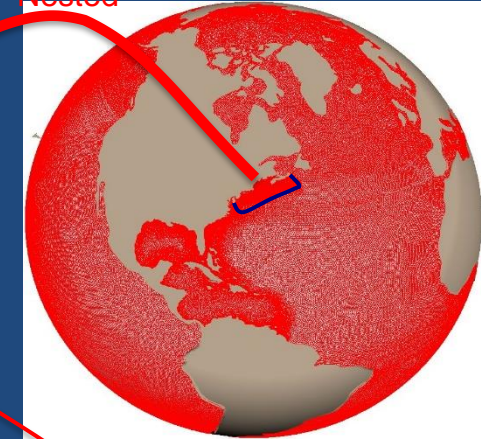
Mass-Coastal FVCOM
(10 m-5 km)



GOM-FVCOM (0.3-15 km)



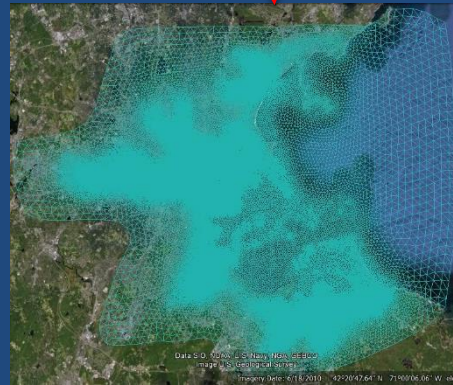
Global-FVCOM
(2-50 km)



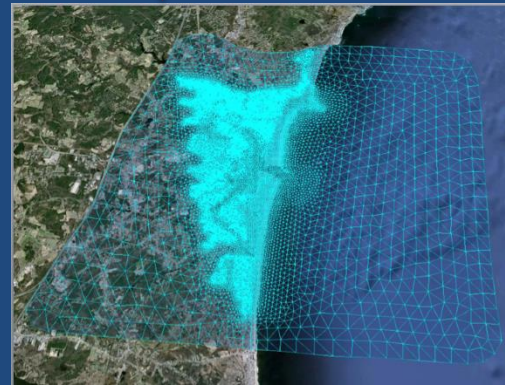
Nested



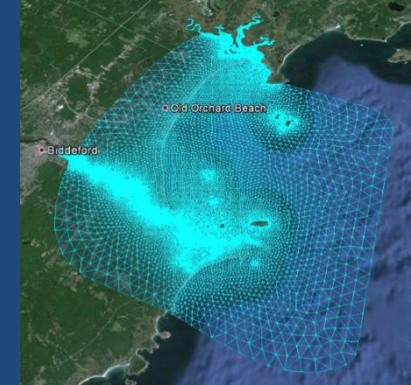
Scituate, MA (up to 10 m)



Boston Harbor, MA (up to 10 m)

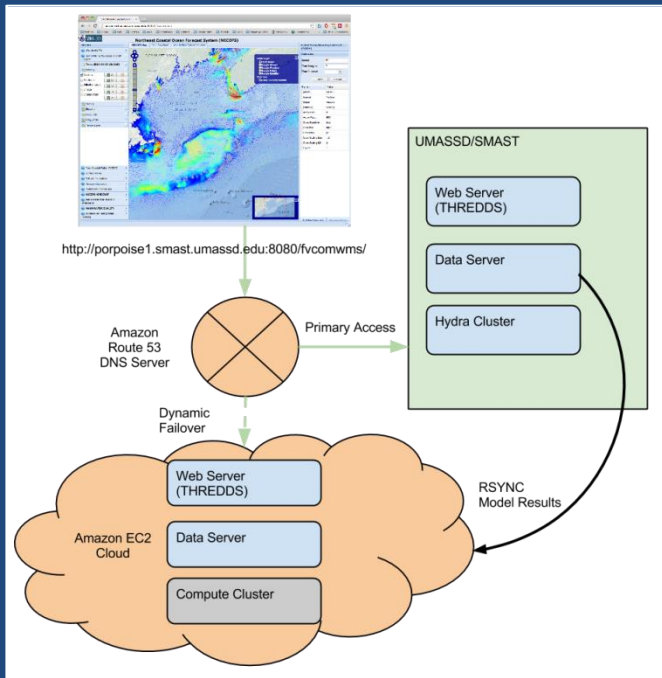


Hampton, NH (up to 10 m)



Saco Bay (up to 10 m)

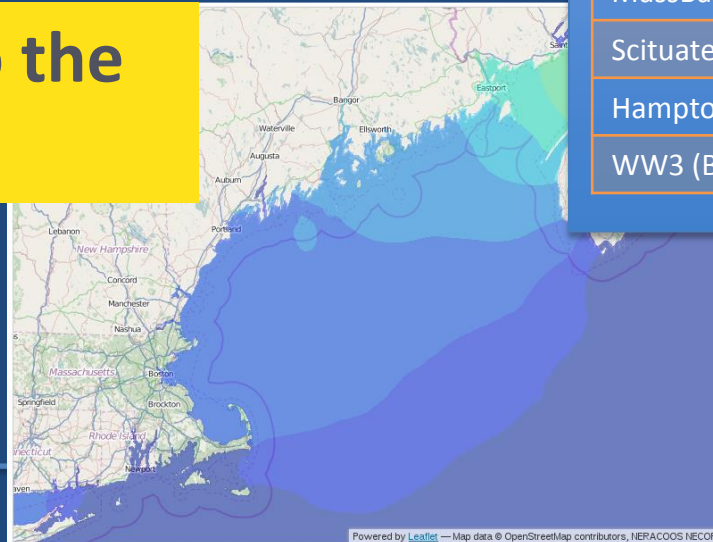
Sandy Supplemental



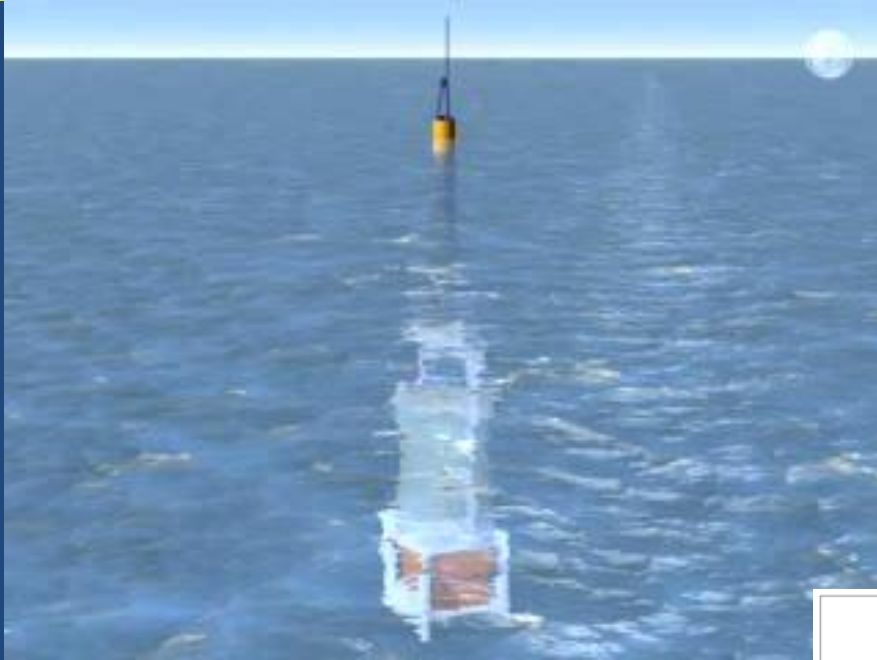
Component	Status
Web Server	★
Data Server	★
WMS Server	★
Compute Cluster	

Compute Cluster - Components	Status
WRF	★
GOM-FVCOM	★
FVCOM-SWAVE	★
MassBay FVCOM	★
Scituate Inundation	★
Hampton River Inundation	★
WW3 (BIO)	★

Moving NECOFS to the Cloud



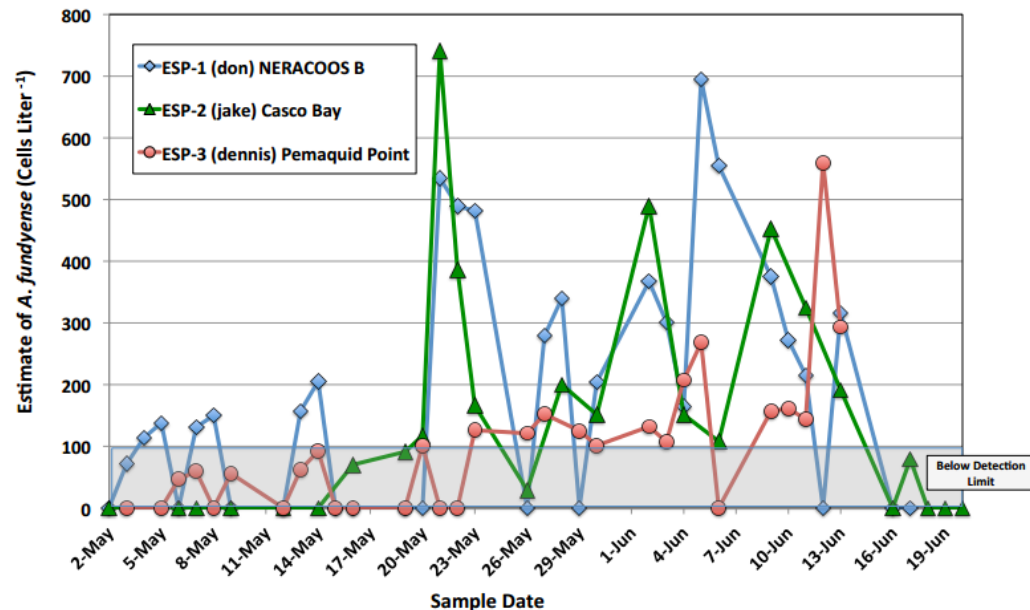
Marine Sensor Innovation



The Environmental Sample Processor (ESP)



ESP Deployments Western Gulf of Maine 2014
Alexandrium fundyense NA1 Probe on "hab" Array



To Produce, Integrate and Communicate:

Welcome

U.S. IOOS is a vital tool for tracking, predicting, managing, and adapting to changes in our ocean, coastal and Great Lakes environment. U.S. IOOS delivers the data and information needed, so that decision-makers can take action to improve safety, enhance the economy, and protect the environment. Explore the interactive features of the new IOOS Data Catalog.



Photo Attributions

To Produce, Integrate and Communicate:

Catalog Inventory

The IOOS Catalog Inventory is intended to provide a detailed view of services and datasets. Information provided includes current status based on the last harvest attempt, metadata, and information for accessing each service or dataset. This view of the IOOS data inventory is intended for data managers in hopes that it will facilitate monitoring of IOOS data and services.



1. Pick provider(s) using the dropdown or the map:

No filters selected...

2. Choose a filter:

Services

All 4386

To Produce, Integrate and Communicate:

Catalog Inventory

The IOOS Catalog Inventory is intended to provide a detailed view of services and datasets. Information provided includes current status based on the last harvest attempt, metadata, and information for accessing each service or dataset. This view of the IOOS data inventory is intended for data managers in hopes that it will facilitate monitoring of IOOS data and services.



1. Pick provider(s) using the dropdown or the map:

NERACOOS x

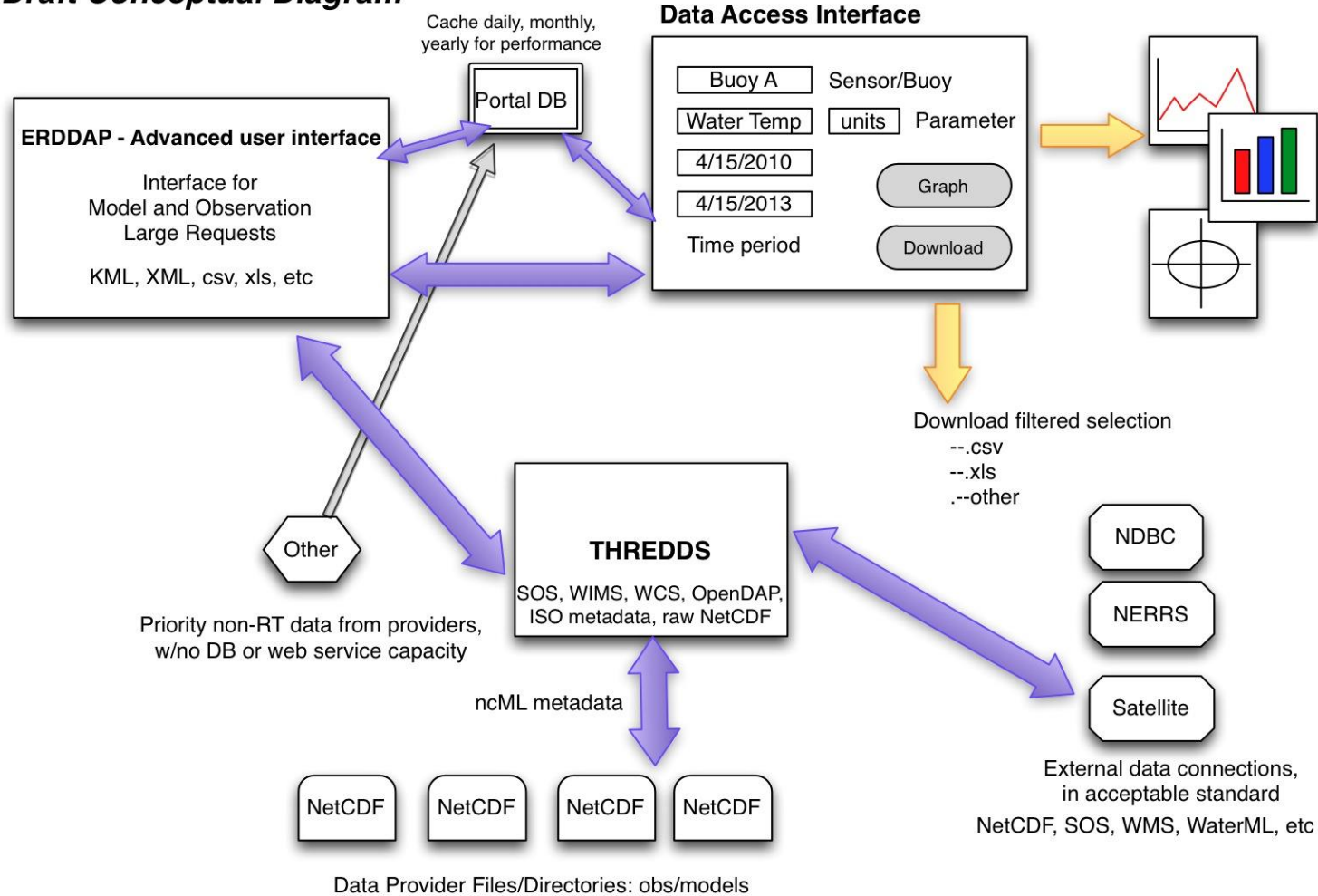
2. Choose a filter:

Services

All 861

NERACOOS Data Management Framework

NERACOOS Data Framework and Access *Draft Conceptual Diagram*



NERA

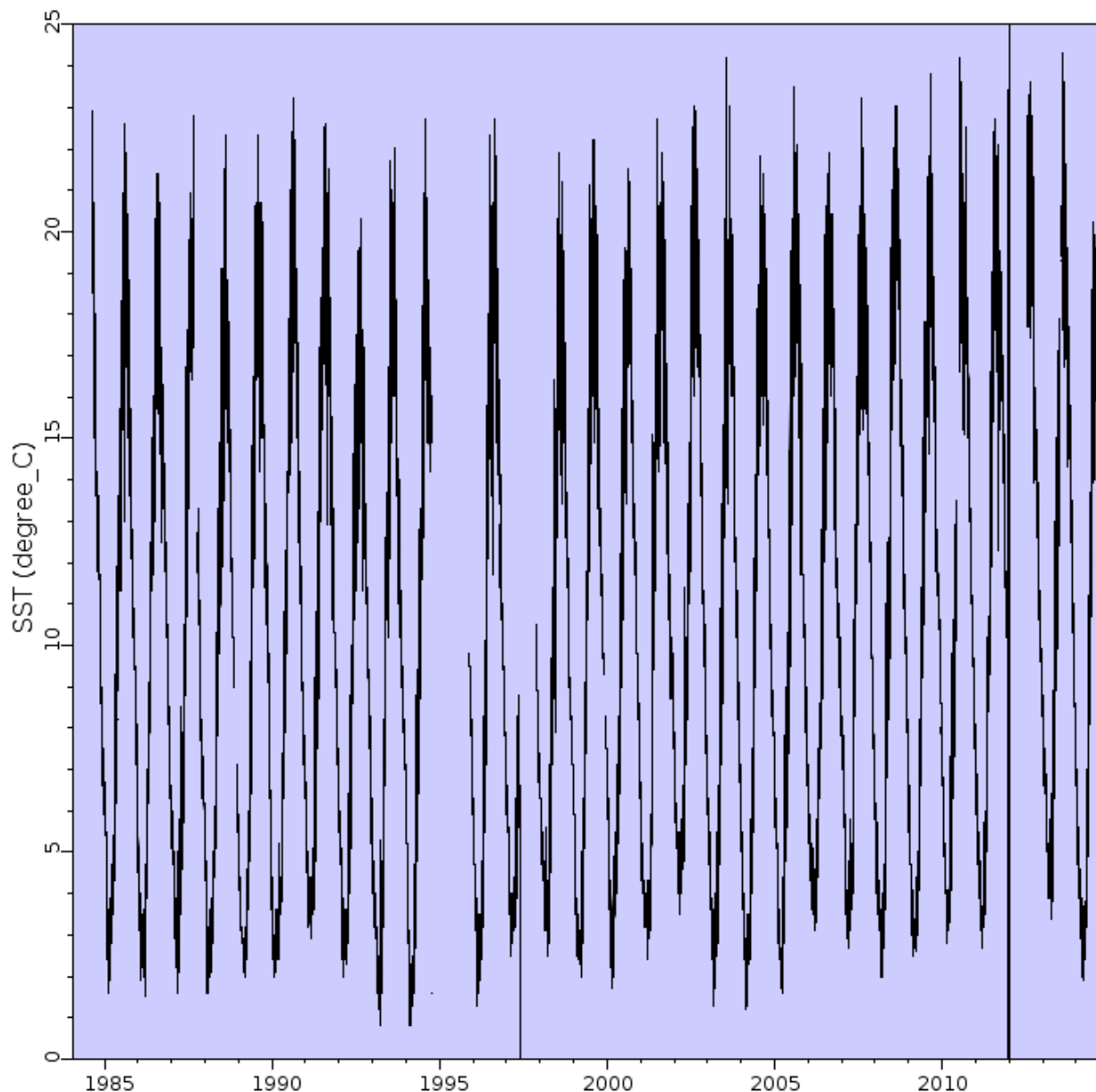
NERA

ERDDAP

ERDDAP (the Environmental Research Data Display) that gives you a simple way to view common file formats for oceanographic data.

Easier Access

http



— NDBC Standard Meteorological Buoy Data
(station="44013")
Data courtesy of NOAA NDBC, CoastWatch WCN

work

OS NERACOOS

assets

ets

?

html

Ocean Planning

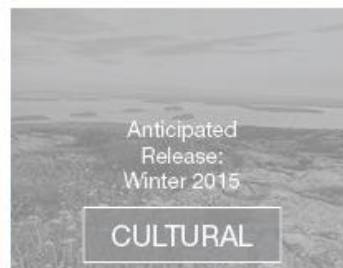
NORTHEAST OCEAN DATA

Maps and data for ocean planning in the northeastern United States

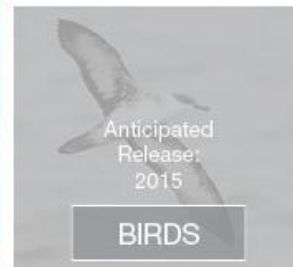
[HOME](#) [MAPS »](#) [DATA »](#) [ABOUT »](#)



HUMAN DIMENSIONS



MARINE LIFE



Featured Map



NEW BATHYMETRY MAP

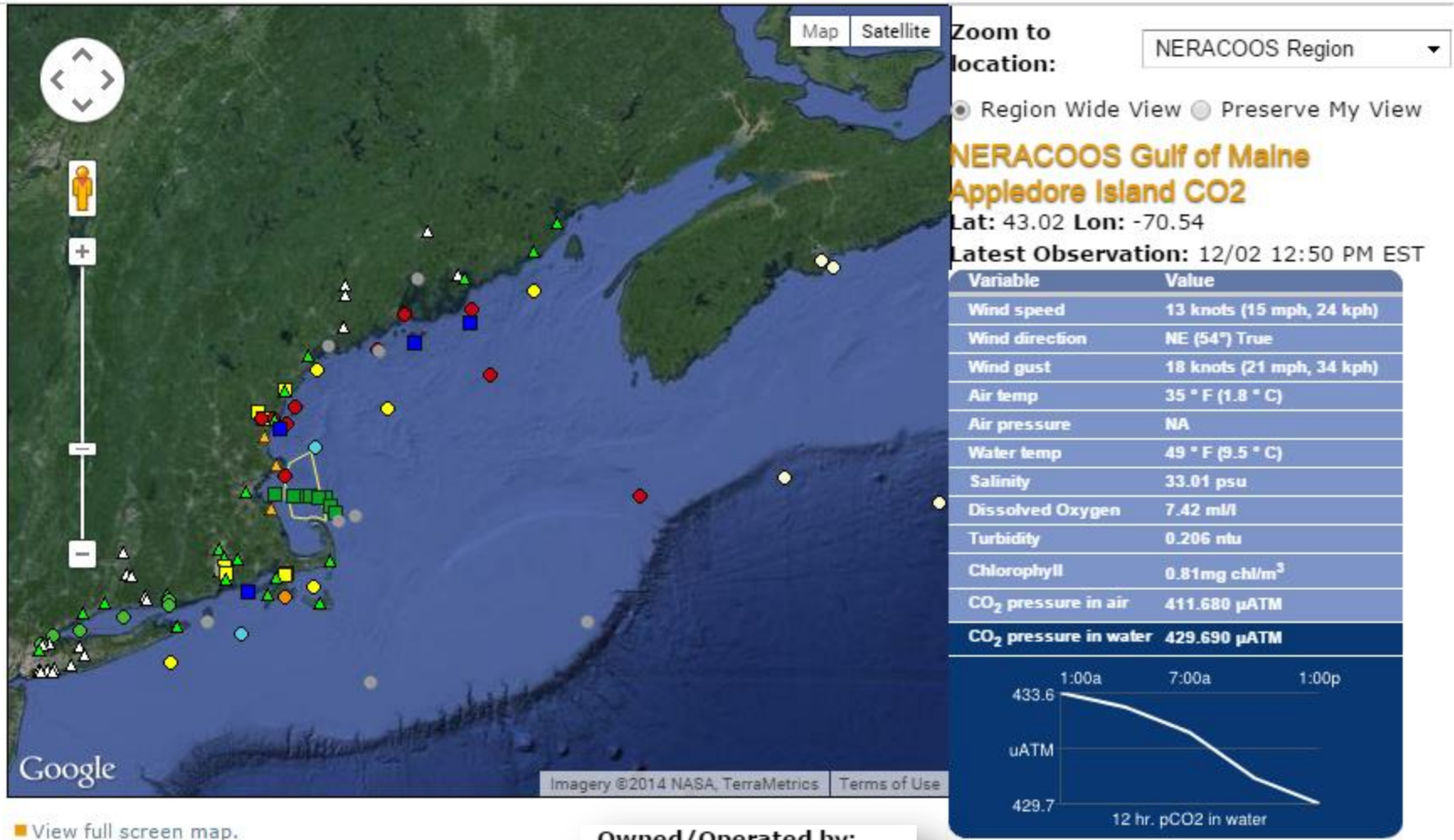
A newly developed interactive map of bathymetry, or seafloor terrain, from Montauk to Nantucket Shoals.

Data Explorer



To Produce, Integrate and Communicate

Real-Time Data Portal



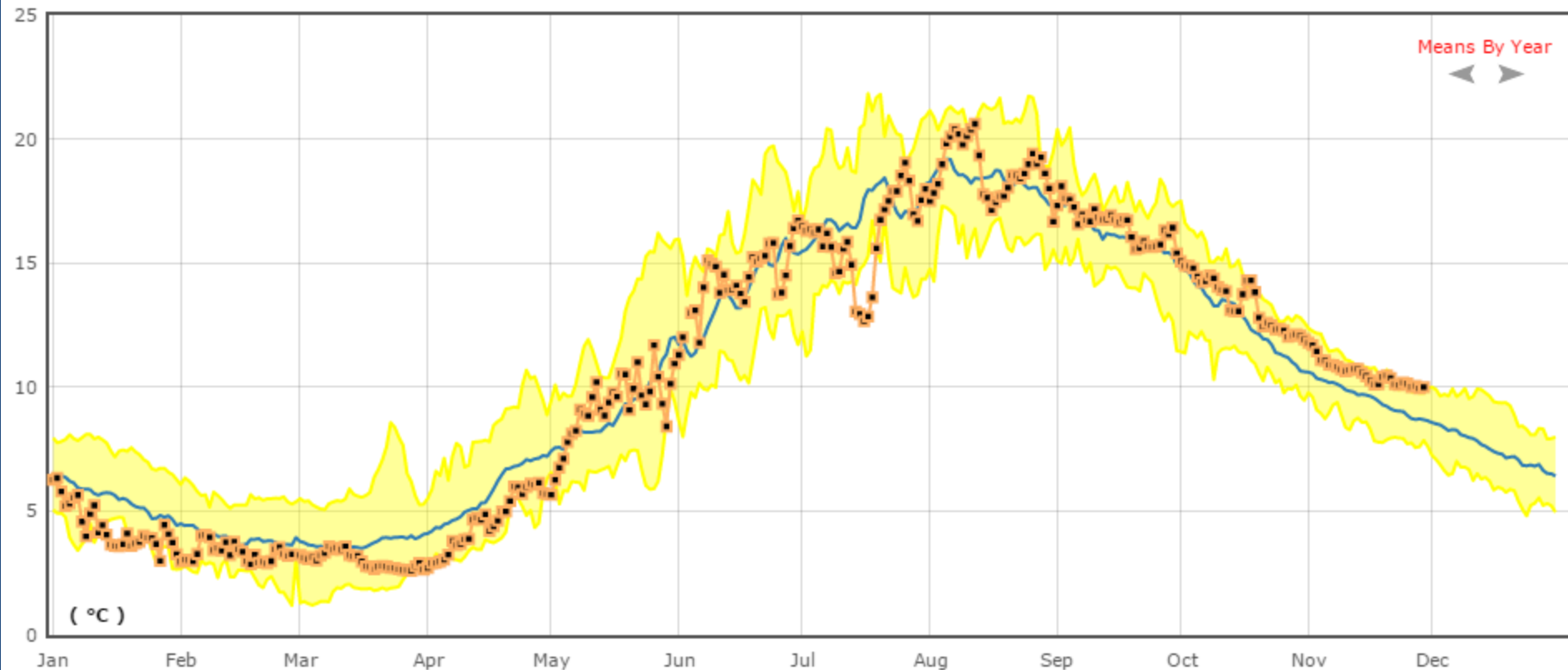
Owned/Operated by:

 **UNIVERSITY**
of NEW HAMPSHIRE
Dr. Doug Vandemark COOA

Ocean and Weather Climate Display

Mean Water Temperature 1 meter depth at B01 for 2001 thru 2014

Daily Means for 2014



2014

- Range of Daily Means 2001 thru 2013
- Mean 2001 thru 2013
- Daily Means By Year

[View Climatology Data Table](#)

Percentage of all real-time continuous ocean measurements in the region conducted by NERACOOS:



NERACOOS

NATIONAL ASSOCIATION
SERVING SYSTEMS

“When making decisions about bringing a 700-foot tanker full of fuel into port, we need the best possible ocean and weather information, which is why we depend on buoy observations and forecasts from NERACOOS to ensure safety and efficiency of these critical operations.”

Captain David Gelinas
Penobscot Bay and River Pilots Association

Weather
made by
in 2013



Capt. David Gelinas preparing to board a ship.

IOOS
INTEGRATED OCEAN OBSERVING SYSTEM

Percentage of survey respondents who indicated that if the data were not available to them through NERACOOS it would be a serious loss or an inconvenience

To Produce, Integrate and Communicate

facebook



NERACOOS

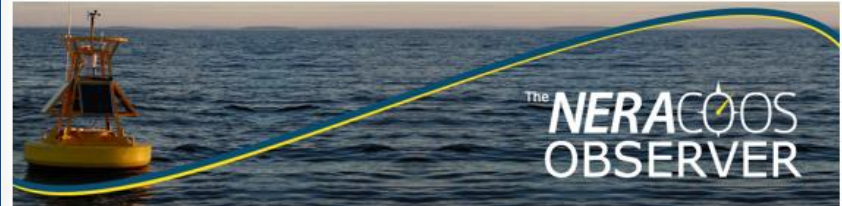
Ocean · Boating · Fish

Timeline

About

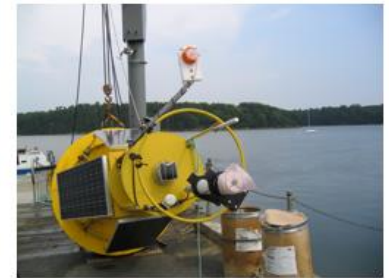
The NERACOOS Observer: September 2014

[View this email in your browser](#)



NERACOOS Awarded Funds to Develop Nutrient Observatory

We are excited to announce that NERACOOS and our partners have received a three year award from the IOOS Marine Sensor Innovation competition for the development of an "integrated nutrient observatory." This funding will support the deployment,



it sensors
Great Bay,
d Sound

ents a major step towards establishing a
ervatory capable of resolving nutrient dynamics
ecessary to address critical needs of
theast region. Proposal partners include WET
ulph of Maine Research Institute, University of
ty of Connecticut.



Following

NERACOOS B01

@NERACOOSB01

Lat: 43° 10'50" N, Lon: -70° 25'40" W



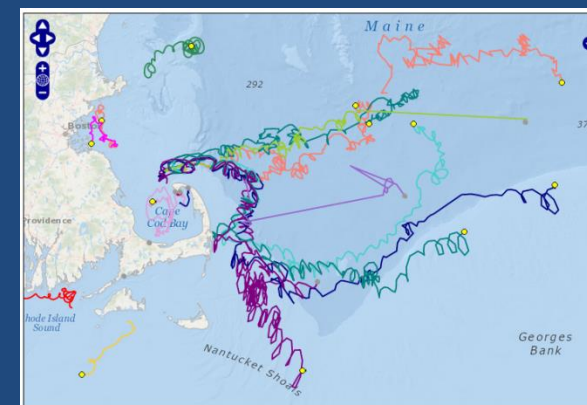
New Hampshire Science Teachers
 Concord Public Schools
 Woods Hole Oceanographic Institution
 New England Coastal Wildlife Alliance
 University of New Hampshire
 Seacoast Science Center
 Scituate Public Schools
 Mass Audubon
 GOMMEA/Wells High School
 Portsmouth, RI

1 Workshop

10 Educators
(12 drifters)

~200 students

~400 family
and friends



2014

OCEAN LITERACY SUMMIT

NEOSEC
New England
Ocean Science
Education Collaborative



The ocean and humans are inextricably interconnected

Sponsored by:

NERACOOS

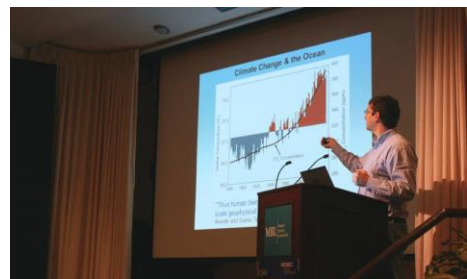


Hosted by Woods Hole Oceanographic Institution
with support from Marine Biological Laboratory

- November 6th and 7th - Woods Hole, MA -



6 The ocean and humans are
inextricably interconnected.



Integrated Sentinel Monitoring Network for Climate Change in Northeastern Coastal Ecosystems

Goal: To develop a science and implementation plan for an adaptive sentinel monitoring program in the Northeast coastal region that integrates existing regional monitoring efforts, assets, and resources to assess the status and trends of key indicators at select sites and geographic sub regions.



Participating Organizations:

Bigelow Laboratory for Ocean Sciences
Casco Bay Estuary Partnership
Connecticut Department of Energy and Environmental Protection
Fisheries and Ocean Canada
Great Bay National Estuarine Research Reserve
Gulf of Maine Council Ecosystem Indicator Partnership
Gulf of Maine Research Institute
Maine Department of Marine Resources
Maine Geological Survey
Massachusetts Bays National Estuary Program
Massachusetts Department of Marine Fisheries
Massachusetts Office of Coastal Zone Management
Massachusetts Water Resources Authority
Massachusetts Institute of Technology Sea Grant
National Oceanic and Atmospheric Administration, National Marine Fisheries Service
NERACOOS
New England Interstate Water Pollution Control Commission
New Haven University
Northeastern University
Northeast Regional Ocean Council
Provincetown Center for Coastal Studies
Rhode Island Department of Environmental Management
Stellwagen Bank National Marine Sanctuary
The Nature Conservancy
U.S. Army Corps of Engineers
U.S. Environmental Protection Agency
U.S. Geological Survey
University of Connecticut
University of Maine
University of Massachusetts Boston
University of New Hampshire
University of Rhode Island
Wells National Estuarine Research Reserve
Woods Hole Oceanographic Institution



Northeast Coastal Acidification Network (NECAN)

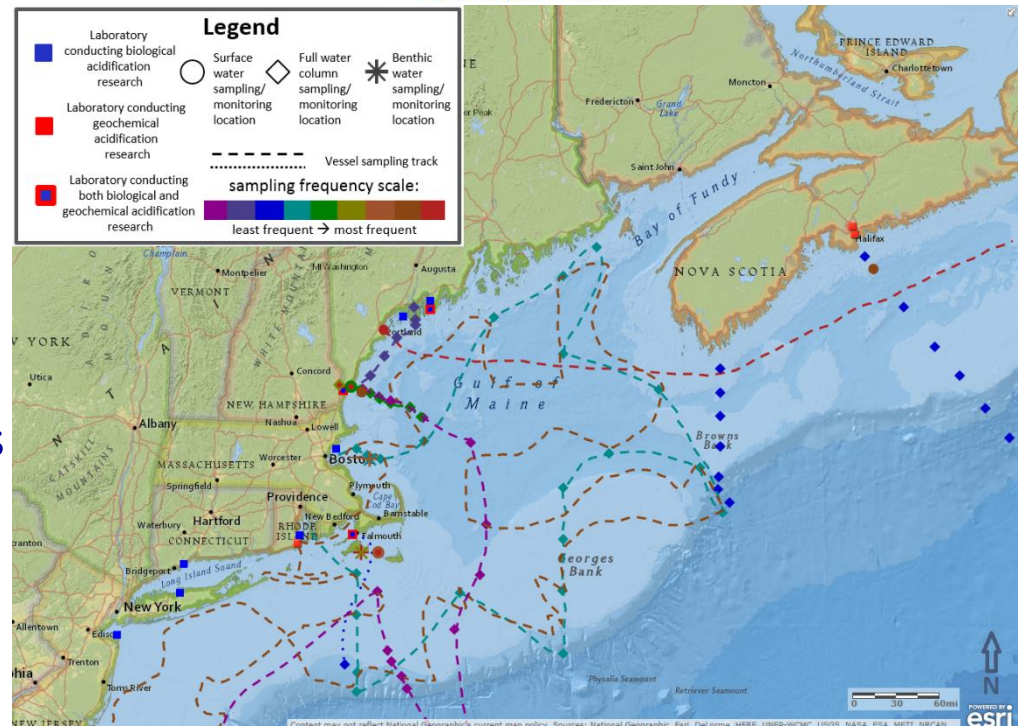
[www. http://neracoos.org/necan](http://neracoos.org/necan)



NE-CAN is a nexus of scientists, federal and state agencies, and industry partners that works to coordinate regional observing and research to identify and communicate critical vulnerabilities to ocean acidification in the Northeast Atlantic

- 16 Webinars
- State of the Science Workshop

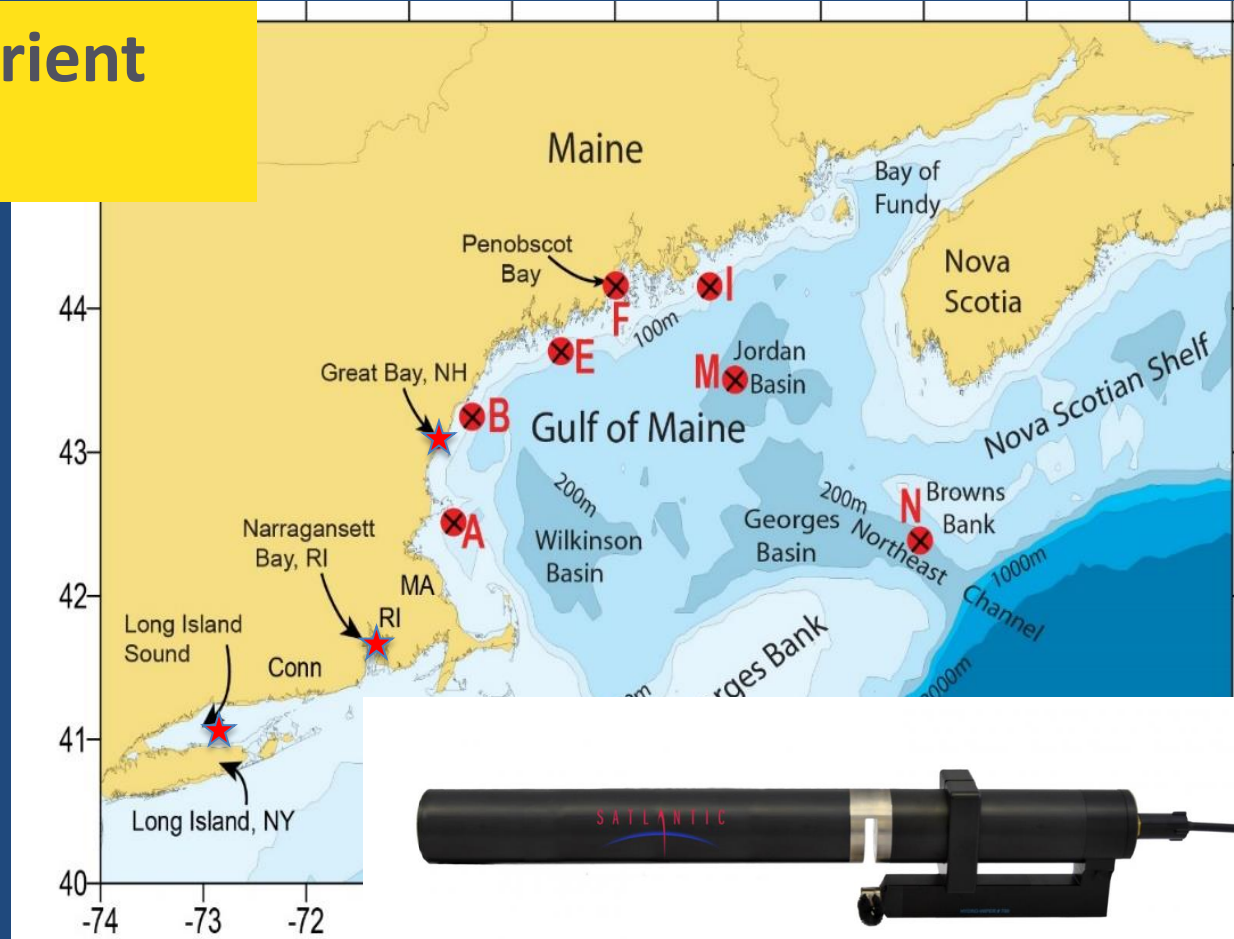
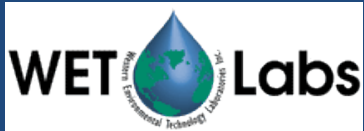
Sustainable Fisheries Partnership



To Produce, Integrate and Communicate – 2015

Marine Sensor Innovation

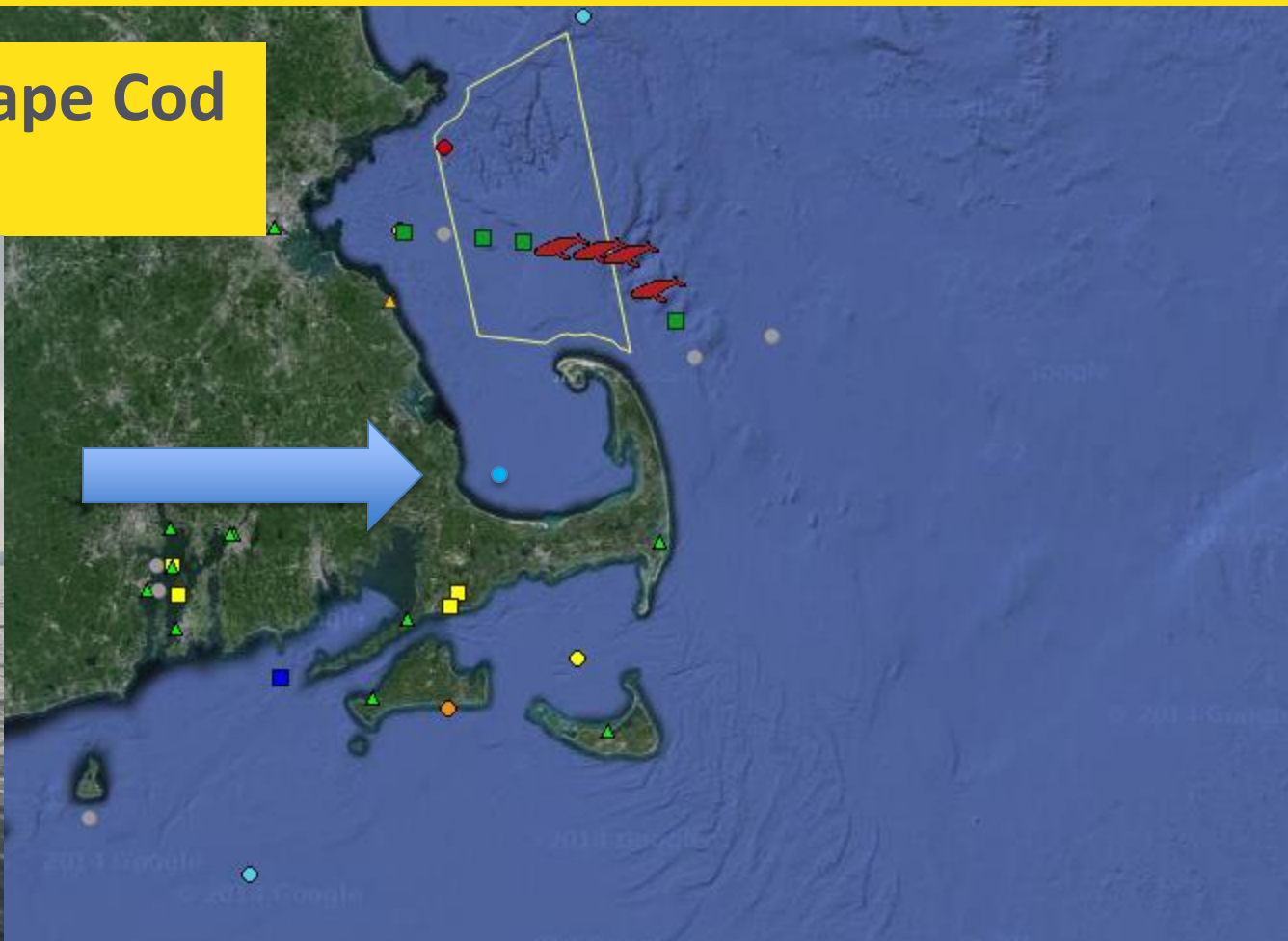
System wide nutrient sensors



To Produce, Integrate and Communicate – 2015

Marine Sensor Innovation

Wave Buoy in Cape Cod Bay - Hopefully



To Produce, Integrate and Communicate – 2015

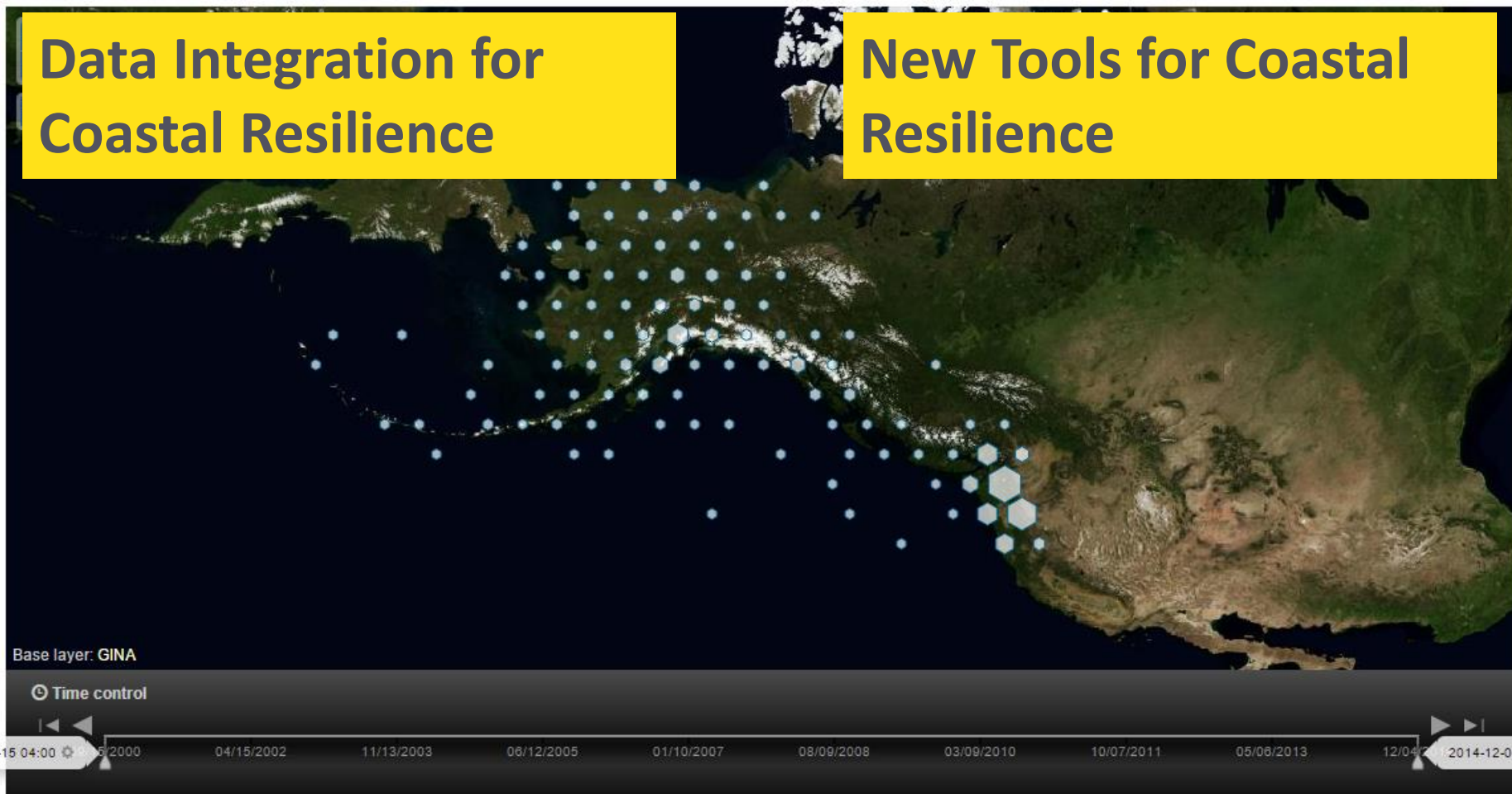
NFWF DOI Sandy Supplemental

AOOS Historical Sensors

Portal +

**Data Integration for
Coastal Resilience**

**New Tools for Coastal
Resilience**



To Produce, Integrate and Communicate – 2015

New Home Page

[Projects](#) [Community](#) [About Us](#)[Waves](#)[Water Level](#)[Wind](#)[Temperature](#)[Currents](#)

Real-Time Data Portal

Latest Conditions:

Highest winds:

27 knots (31 mph, 50 kph) |
NOAA 44150 - La Have Bank |
11:00 AM

Biggest waves:

12.6 ft (3.8 m) |
NERACOOS N01 - Northeast Channel |
09:00 AM

Hourly information developed for marine operations. Includes wind, wave, visibility, air temperature, water temperature at various depths and more. Real-time, forecast and historical data is available from NERACOOS partners, NOAA and other regional monitoring efforts.



[Like](#) You like this.

Maine ocean acidification commission recommends additional research and monitoring.

Study committee calls for Maine to act on ocean acidification - The Portland Press Herald /...

A report to legislators says more research and local efforts are needed to deal with the threat to shellfish, including lobsters and clams.

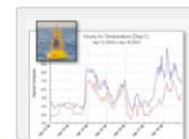
PRESSHERALD.COM

Share · [2](#)

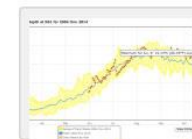
Data Products



[All Data From Station](#)



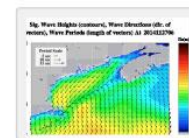
[Graphing and Download](#)



[Ocean and Weather Climate Display](#)



[Real-time Data Portal](#)



[Wave Forecast](#)



[Waves and Water Level Model Observation Viewer](#)

Member Highlight



[The Massachusetts Water Resource Authority](#)

The MWRA is a Massachusetts public authority established by an act of the Legislature in 1984 to provide wholesale water and sewer services to 2.5 million people and more than 5,500 large industrial users in 61 metropolitan Boston communities.

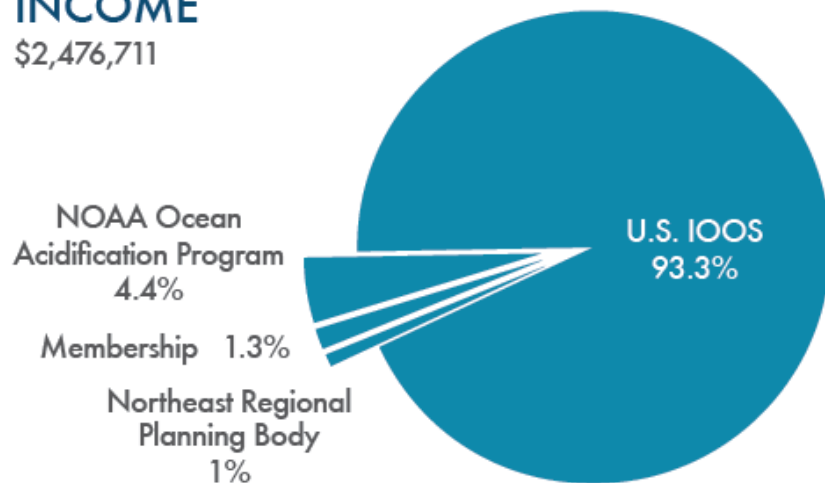
The Money

2013 FINANCIALS

NERACOOS is funded primarily by U.S. IOOS. In 2013, we began a membership program, and we are grateful for the generous support from our members.

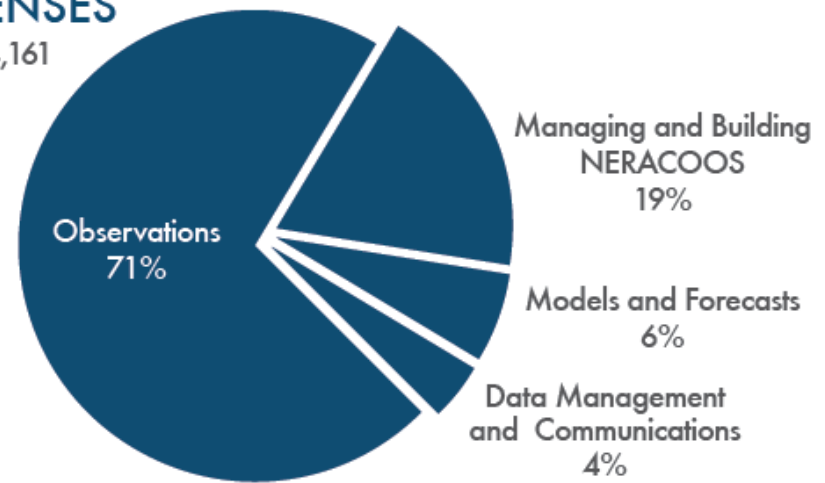
INCOME

\$2,476,711



EXPENSES

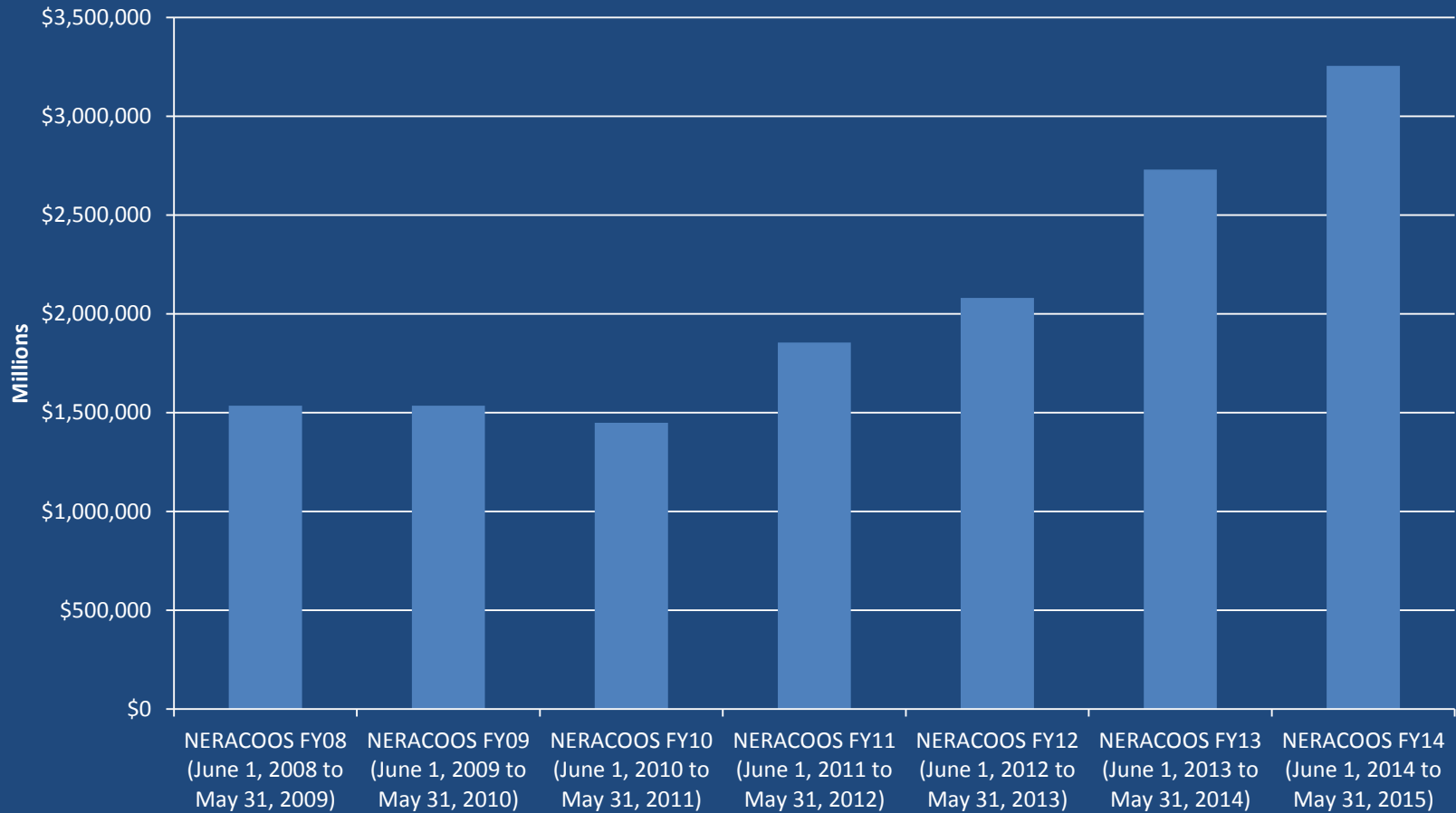
\$2,444,161



The financial information above represents funding allocated in 2013 and how these funds were budgeted to be spent. Our financial year ends September 30th and audited financials are available at www.guidestar.org.

Funding since Establishment

Funding to NERACOOS



Thank you to our Members

Sustaining



Northeastern
University



Malcolm Spaulding



Associate

Casco Bay Estuary Partnership

Connecticut Department of Energy and
Environmental Protection

Melville Cote Jr.

Fisheries and Oceans Canada

Maine Department of Marine Resources

Maine Coastal Program

Maine Lobstermen's Association

Marine & Oceanographic
Technology Network

Massachusetts Lobstermen's
Association

RPS Group

Ru Morrison

St. Lawrence Global Observatory

Waterview Consulting

Affiliate

Gulf of Maine Council

Massachusetts Office of Coastal Zone
Management

Massachusetts Bays National Estuary Program



Narragansett Bay
Research Reserve



U.S. Environmental Protection
Agency

Supporting

Become a Member of *NERACOOS*

- **Why should I become a member?**
 - With your Membership NERACOOS can:
 - Maintain and repair infrastructure, ensuring observations and forecasts continue
 - Develop new tools to make it easier for people to access and understand the information
 - Advocate for the national IOOS program to continue base support.

Become a Member of *NERACOOS*

- **What benefits do I receive?**

- Participate in research and development of ocean information products
- Leverage and enhance existing monitoring/observation activities
- Easily deliver data and information to target audiences
- Discover collaborative project opportunities and networking events
- Determine the direction of NERACOOS activities

A satellite map of the Northeastern United States coastline, showing the Atlantic Ocean, the Chesapeake Bay, and the Long Island Sound. The land is green and brown, and the water is blue. The map is used as a background for the slide.

NERACOOS

NORTHEASTERN REGIONAL ASSOCIATION
of COASTAL OCEAN OBSERVING SYSTEMS

NERACOOS is a robust regional ocean observing system that consistently delivers high quality information relied upon to protect lives and property, empower coastal economies and improve the health of our oceans.