



NORTHEASTERN REGIONAL ASSOCIATION  
of COASTAL OCEAN OBSERVING SYSTEMS

# ANNUAL IMPACT REPORT

## 2017



Your Source for Ocean Information

# NERACOOS

NORTHEASTERN REGIONAL ASSOCIATION  
of COASTAL OCEAN OBSERVING SYSTEMS

## SYSTEM OPERATORS

**77%** of NERACOOS funds go directly to our partners to produce and integrate ocean information.



“ We’re responsible for all the commercial shipping that comes and goes to this coast’s ports, so it’s a hugely important part of the state’s economy. [NERACOOS] helps us do the job safely, protect the environment, protect ourselves but also to make commerce move as smoothly as possible. ”

Captain Dave Gelinas  
Penobscot Bay and River Pilots

## LETTER FROM THE DIRECTOR

Dear Members, Partners, and Friends:

Over the last year we have had many opportunities for growth and collaboration, for which we are very grateful. The staff and myself have dedicated ourselves to continuing to provide and expand our ocean observing capabilities in the Northeast, based on the needs of our many and diverse stakeholders. Below I have shared a few personal highlights of events that occurred this past year.



U.S. IOOS Director Carl Gouldman (left) presents RICE certification to Executive Director Ru Morrison.

In October, a new NERACOOS wave buoy was deployed by Woods Hole Group to replace the existing USGS wave buoy in Cape Cod Bay. Efforts for this project have been supported by the Massachusetts Department of Environmental Protection and NOAA PORTS (Physical Oceanographic and Real-Time System), and we thank them for their continued support. The information from this buoy is critical for shipping, emergency response, and even tourism and recreation.

NERACOOS also partnered with a new organization, SeaTrac Systems, Inc., to release a request for proposals, which provided a scientific opportunity to conduct ocean observations on the maiden voyage of SeaTrac’s new autonomous boat platform. Two projects were successful in this competition, proposed by Mark Brosnahan from Woods Hole Oceanographic Institution and Prassede Vella from Massachusetts Bays Program. We look forward to continuing these efforts with SeaTrac and our partners in 2018.

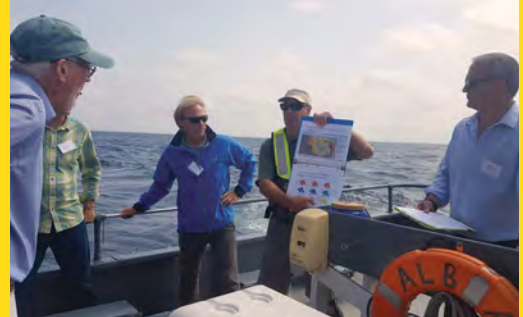
We are deeply committed to the NERACOOS vision and grateful to all of our partners and members, without whom none of this would be possible. Thank you for your continued dedication. You have helped make 2017 another successful year, and we are looking forward to 2018!

J. Ru Morrison, Ph.D.  
Executive Director, NERACOOS

## BECOME A MEMBER

Become a member of NERACOOS to support the production, integration, and communication of high-quality ocean information:

[WWW.NERACOOS.ORG/MEMBERSHIP](http://WWW.NERACOOS.ORG/MEMBERSHIP)



Chris Sherwood, USGS, speaks to the NERACOOS Board of Directors and stakeholders about how he uses the data from the wave buoy in Cape Cod Bay.



## HIGHLIGHTS FROM 2017

### Federal Data Certification

Based on detailed review and assessment, the U.S. Integrated Ocean Observing System certified NERACOOS as a Regional Information Coordination Entity (RICE). The certification verifies that the organizational practices of NERACOOS, including data management, meet recognized and established standards set by the National Oceanic and Atmospheric Administration.

### Storm Preparedness

NERACOOS and its collaborators recently completed the development of a new tool for predicting wave run-up, which can cause severe damage to roads and property during storms. The new tool will improve the ability of the National Weather Service and emergency managers to predict and respond to damage caused by coastal storms.

### Search and Rescue

Measurements of surface currents in the Northeast expanded with the installation of a new high-frequency radar (HFR) on Cape Cod by Woods Hole Oceanographic Institution. The HFR data enhances coverage and accuracy of current speed and direction. The data are critical to the U.S. Coast Guard for search-and-rescue operations and for oil spill response.

### Local Communities

NERACOOS traveled to Cape Cod, Massachusetts, and Bar Harbor, Maine, to meet with stakeholders. At these events users shared their stories about how they depend on NERACOOS information to perform their jobs and discussed other ways NERACOOS could meet their needs. NERACOOS thanks everyone who made these trips possible, especially Bar Harbor Whale Watch.



An online tool developed by NERACOOS supports forecasting of wave run-up, a major cause of storm damage. The tool is used by emergency response managers to effectively prepare for approaching storms.



Congressman Bruce Poliquin (center) receives a research update from Dr. Neal Pettigrew of the University of Maine during a stakeholder event in Bar Harbor, Maine.

Below: A new high-frequency radar transmitter (at left) in Provincetown, Massachusetts, expands ocean surface current measurements in the Gulf of Maine.

## Ocean Health

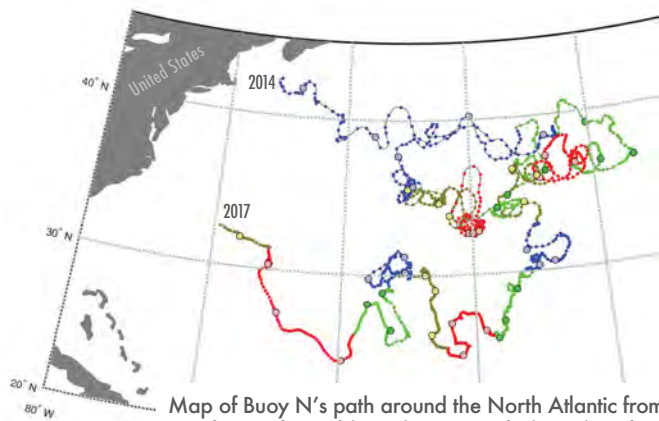
NERACOOS and its partners (see System Operators map) successfully deployed an automated nutrient monitoring observatory covering the Gulf of Maine, Great Bay, Narragansett Bay, and Long Island Sound. The sensors (provided by WET Labs, Inc., a division of Seabird Scientific) deliver data to scientists, managers, and policy makers across the Northeast, helping them identify and respond to nutrient pollution and changes that cause hypoxia, habitat loss, ocean acidification, and harmful algal blooms.



Coastal businesses such as aquaculture farms growing oysters (above) benefit economically from NERACOOS data on nutrient pollution.

## A Lost Buoy Comes Home

In January 2014, Buoy N broke loose from its mooring in the Northeast Channel during a storm. The buoy circumnavigated the North Atlantic, continuously recording and delivering data along the way. Dr. Neal Pettigrew from the University of Maine and the crew of the R/V *Atlantic Explorer*, from the Bermuda Institute of Ocean Sciences, successfully recovered the buoy in October 2017 near Bermuda and returned it home to Maine.



Map of Buoy N's path around the North Atlantic from the Northeast Channel (2014) to Bermuda (2017). Colors indicate winter (blue), spring (green), summer (red), and fall (brown). Map by Neal Pettigrew and Mark Neary (University of Maine).

## Coastal Economy

Fishermen in the Northeast like Dave Casoni (right), past president of the Massachusetts Lobstermen's Association, depend on NERACOOS buoy data to compare current and historical conditions. The Ocean Climate display and other NERACOOS tools help fishermen make safety decisions on a daily basis.

“ I am just one representative of the industry, and everybody I know uses these [NERACOOS] buoys and they have them on their phones, so it's extremely important to us. ”

Jim Dow  
Maine Lobstermen's Association

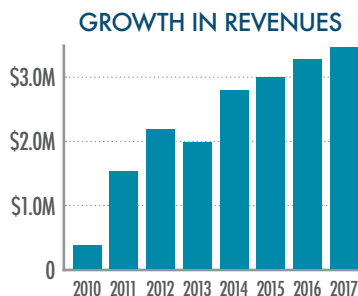


Photo: Massachusetts Lobstermen's Association

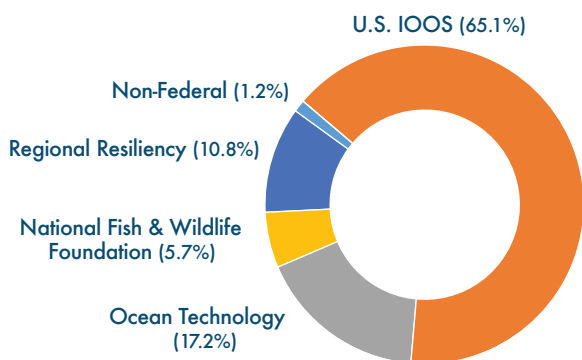


# 2017 FINANCIALS

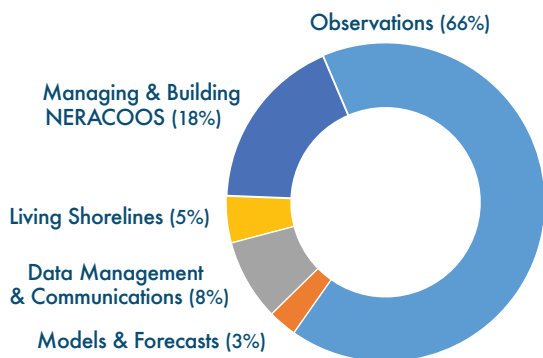
NERACOOS is funded primarily by NOAA through the U.S. IOOS Program. In 2017, NERACOOS successfully raised additional funding from the IOOS Ocean Technology Transfer Program, the National Fish and Wildlife Foundation, NOAA's Ocean Acidification Program, NOAA's Office of Coastal Management, and Massachusetts Department of Environmental Protection.



**REVENUES: \$3,462,922**



**EXPENSES: \$3,290,315**



The amounts presented here are derived from NERACOOS' audited financial statements for the year ending September 30, 2017. Complete copies of the audited financial statements are available at [www.neracoos.org](http://www.neracoos.org).



NERACOOS is the Northeast regional entity of the Integrated Ocean Observing System (U.S. IOOS), which is a federally authorized program and works with regional and federal partners to ensure compatible and consistent ocean and coastal data collection, management, and information products across the nation.



The IOOS Association is a non-profit organization formed by the Regional Associations (RAs) for Coastal and Ocean Observing in support of the U.S. IOOS. It works with the 11 RAs, the U.S. IOOS Program Office in NOAA, and other partners to address the nation's need for coastal observing and information.

## BOARD OF DIRECTORS

- Steven Lahrenz** University of Massachusetts Dartmouth *President*
  - Steven Couture** New Hampshire Dept. of Environmental Services *Vice President*
  - Matthew Lyman** Connecticut Dept. of Energy and Environmental Protection *Treasurer*
  - Anthony Kirinich** Woods Hole Oceanographic Institution *Secretary*
  - David Ullman** University of Rhode Island
  - David Townsend** University of Maine
  - Michael Whitney** University of Connecticut
  - Joseph Salisbury** University of New Hampshire
  - David Hebert** Bedford Institute of Oceanography
  - Todd Callaghan** Massachusetts Office of Coastal Zone Management
  - Janet Freedman** Rhode Island Coastal Resources Management Council
  - Carl Wilson** Maine Department of Marine Resources
  - Justin Manley** Just Innovation, LLC
  - John "Jack" Conway** Sikorsky Aircraft Corporation
  - Arthur "Sooky" Sawyer** Massachusetts Lobstermen's Association
  - Thomas Taylor** Cooke Aquaculture
  - Steven Withrow** Marine and Oceanographic Technology Network
  - Andrew Pershing** Gulf of Maine Research Institute
  - Jason Goldstein** Wells National Estuarine Research Reserve
  - Pamela DiBona** Massachusetts Bays National Estuary Program
  - Regina Lyons** Environmental Protection Agency *(Non-voting Member)*
  - Nicole Bartlett** NOAA Northeast Fisheries Science Center *(Non-voting Member)\**
  - Lt. James Brinkley** NOAA Northeast Fisheries Science Center *(Non-voting Member)\*\**
- \*Board Member until December 2017 \*\*New Board Member as of December 2017

## MEMBERS

### Sustaining

- Kelly Cove Salmon
- Massachusetts Water Resources Authority
- University of Connecticut, Marine Sciences Program
- University of Maine, School of Marine Sciences
- University of Massachusetts Dartmouth
- University of New Hampshire, School of Marine Science and Ocean Engineering

### Supporting

- Bar Harbor Whale Watch
- Bigelow Laboratory for Ocean Sciences
- Gulf of Maine Research Institute
- Onset Computer Corp.
- Provincetown Center for Coastal Studies
- Woods Hole Group
- Woods Hole Oceanographic Institution

### Associate

- |   |   |
|---|---|
| <ul style="list-style-type: none"> <li>Connecticut Dept. of Energy and Environmental Protection</li> <li>Educational Passages</li> <li>Fisheries and Oceans Canada</li> <li>Footprints in the Water</li> <li>J. Ru Morrison</li> <li>Maine Dept. of Marine Resources</li> <li>Malcom Spaulding</li> </ul> | <ul style="list-style-type: none"> <li>Marine and Oceanographic Technology Network</li> <li>Marine Renewable Energy Collaboration</li> <li>Massachusetts Lobstermen's Association</li> <li>Melville Coté</li> <li>Scott C. White</li> <li>St. Lawrence Global Observatory</li> <li>Waterview Consulting</li> <li>Wells National Estuarine Research Reserve</li> </ul> |
|---|---|

## AFFILIATES

- Gulf of Maine Council on the Marine Environment
- Massachusetts Bays National Estuary Program
- Massachusetts Office of Coastal Zone Management
- Narragansett Bay National Estuarine Research Reserve
- New Hampshire Department of Environmental Services
- U.S. Environmental Protection Agency

## STAFF

- J. Ru Morrison *Executive Director*
- Tom Shyka *Product and Engagement Manager*
- Rob Cardeiro *Finance Director*
- Jackie Ball Motyka *Operations Manager*
- Kelly Canesi *Program Coordinator*
- Emily Silva *Administrative Assistant*

## CONTACT US

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- Web** [www.neracoos.org](http://www.neracoos.org)



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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.

## SELECTED 2017 STATISTICS



**32.8 FEET**

Highest significant wave height.  
Buoy N, Northeast Channel,  
March 15.



**69.1 MPH**

Strongest wind gust.  
Buoy M, Jordan Basin,  
Gulf of Maine, February 10.



**2,041,934 PAGE VIEWS**

Annual usage of NERACOOS.org  
and NERACOOS assets on NDBC



**31.8°F**

Coldest water temperature.  
Buoy N, Northeast Channel,  
March 12.



**-0.3°F**

Coldest air temperature.  
Buoy F, Penobscot Bay,  
December 28.



**4:00 A.M. WEEKDAYS**

Busiest time of day for  
NERACOOS website

## STAY CONNECTED

Visit [NERACOOS.org](http://NERACOOS.org) for ocean and weather data  
and updates on NERACOOS activities.



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Follow us on Twitter.

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

