News from
NOAA in the North Atlantic

Photos from the Mashpee Wampanoag Tribal Roundtable held in March.

NOAA and Mashpee Wampanoag Hold First Tribal Roundtable

"Adapting to the Changing Climate" was the theme for a day-long meeting on March 22 attended by NOAA scientists and staff from various line offices and by members of the Mashpee Wampanoag Tribe.

The roundtable, organized by NOAA's North Atlantic Regional Team, was held at the Tribal Community and Government Center in Mashpee, MA, and attracted nearly 40 people, including 17 members of the Mashpee Wampanoag Tribe.

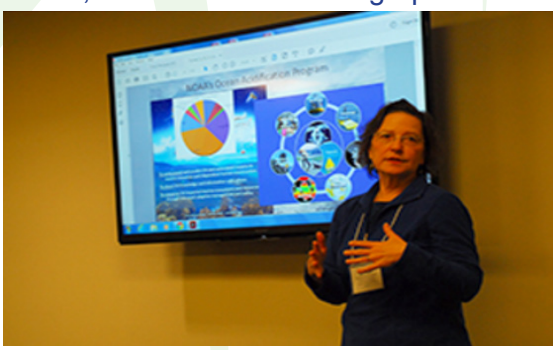
Jessie "Little Doe" Baird, vice chairwoman and natural resource liaison of the Mashpee Wampanoag Tribe, gave an invocation and welcome to the group. George "Chuckie" Green Jr., assistant director of natural resources, then provided an overview of the Tribe's history and culture. NOAA's Fisheries tribal program and the consultation process were presented by Linda Belton, NOAA Tribal Liaison in the NOAA Office of Legislative and Intergovernmental Affairs.

"The Mashpee Wampanoag Tribe has had a 12,000-year relationship with the land and waters here. Our desire to form a close collaborative relationship with NOAA is critical to exercising our responsibilities to both land and water as well as the protection of the Wampanoag practice of aboriginal rights," said Baird. "As fellow recipients of these privileges, both the Native and non-Native communities can and must work together to ensure the future of our children yet unborn. I look forward to future collaboration."

During the day, the Tribe expressed interest in issues related to fish and shellfish, habitat and water quality. Members spoke of their desire to bring traditional ecological knowledge to NOAA partnerships and to participate in the resource-management process in some way.

"It was an opportunity to meet with tribal leaders, including those involved in natural resources, learn more about their history and culture, and share with them some of our research findings," said Jon Hare, Northeast Fisheries Science Center Science and Research Director. Hare spoke briefly about climate impacts on fisheries and the changing conditions in the Northeast.

Staff from NOAA's National Weather Service, National Centers for Coastal Ocean Science, and NOAA Intergovernmental Affairs also gave presentations, as did representatives from the Massachusetts Department of Fish & Wildlife and the Office of Coastal Zone Management, Woods Hole Oceanographic Institution, and private industry. In addition to climate and fisheries, topics included aquaculture and ocean acidification, harmful algal blooms and ecological forecasting, and extreme weather preparedness. Tribal members addressed aboriginal rights and fishing in local and offshore waters.



NART Member Beth Turner (NCCOS) presenting at the Mashpee Wampanoag Tribal Rountable.

"These kinds of opportunities are valuable for all of us," said Hare, who would like to see the dialogue continue. "Tribal members have traditional ecological knowledge about the local ecosystem and environment that we can learn from. More broadly, we want to understand what the tribe's needs are, how NOAA can best address those needs, and how we can expand our interactions and collaborations."

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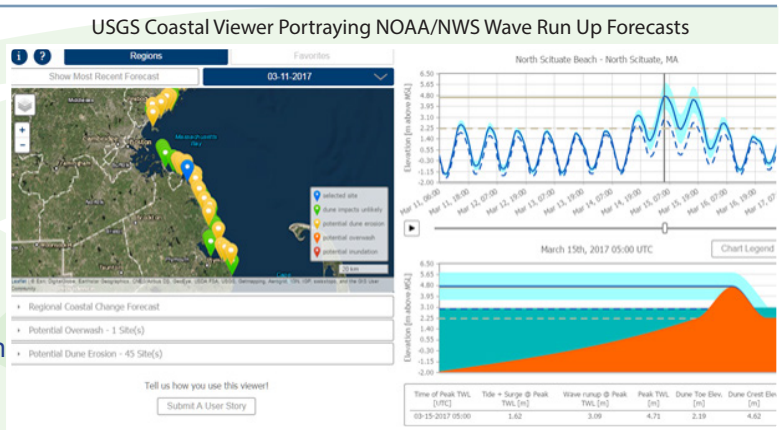
Article provided by: Shelley Dawicki

NOAA's North Atlantic region includes all or part of twelve states and the District of Columbia. The quarterly North Atlantic Regional Team (NART) newsletter highlights recent NOAA collaborative activity in our region.

Update on Wave Run Up



USGS Coastal Viewer Portraying NOAA/NWS Wave Run Up Forecasts

The wave run up project continues on a two-pronged approach providing total water-level guidance along the mid-Atlantic and northeast coastlines. Local National Weather Service (NWS) offices are in the process of implementing local Total Water Level (tide) forecasts for numerous coastal sites along the coast, many associated with National Ocean Service (NOS) and United States Geological Survey (USGS) tide gages. The Total Water Level tide program is the first step in establishing accurate water-level conditions near the coast from which to apply waves and beach morphology for calculating wave run up. The wave run up forecasts will help ascertain the extent of shoreline damage during coastal storms. Beach data has been collected by local NWS offices at over 60 high-impact and vulnerable locations, setting the foundation for local wave run up calculations. Wave run up forecasts are currently being routinely generated at NWS offices in Wakefield, VA, Taunton, MA, Caribou ME and Gray, ME. The local forecast technique will be expanded to both Upton, NY and Morehead City, NC later this summer and fall.

In regards to upcoming changes to the modeling of wave run up, Nation Centers of Environmental Predictions (NCEP) is testing new unstructured high-resolution Near Shore Wave Prediction (NWPS) model domains running on the Weather and Climate Operational Supercomputing System (WCOSS) for 10 NWS offices encompassing a large portion of the mid-Atlantic and Northeast. The new WCOSS modeling approach utilizes forecast data from NWS offices and NOS calculating wave conditions, applying waves and water levels. These NOAA data are then applied to beach morphology profiles provided by the USGS. The result is a seamless calculation of wave run up forecasts along the coast providing users information regarding the timing and extent of coastal damage. Wave run up forecasts from WCOSS are being shared with the USGS for visualization within the USGS Coastal Inundation Viewer. WCOSS data assimilation and viewing of wave run up output is already being provided for three domains in the mid-Atlantic and Northeast available online https://coastal.er.usgs.gov/hurricanes/research/twlviewer/. The additional NWS office domains will become operational by the end of the FY. The collaborative approach to wave run up leverages the best capabilities of local NWS offices, NOS, NCEP and the USGS.

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NOAA Place in the North Atlantic Profile

Climate Program Office

The Climate Program Office (CPO), in NOAA's Office of Oceanic and Atmospheric Research, manages NOAA's largest competitive research program that funds high-priority science to advance understanding of the causes and effects of climate variability and change. The office is located in Siver Spring, MD, at NOAA Headquarters and is under the leadership of Dr. Wayne Higgins.

CPO manages a balanced portfolio of climate research, observation, monitoring, modeling, and decision science across a weather-to-climate time continuum to help communities and businesses better manage risks, build resilience, and adapt to a changing environmental conditions. CPO's science and services are integrated with NOAA's Line Offices, laboratories, and external partners.

CPO's robust portfolio provides information on weather and climate phenomena from days to decades into the future, ensuring our country will be resilient tomorrow, next year, and for centuries to come. They collaborate with a wide range of partners - including (but not limited to) the U.S. Global Change Research Program, NASA, the National Science Foundation, the National Academy of Sciences, the National Snow and Ice Data Center, the U.S. Departments of Interior and Agriculture, the National Institutes of Health, the National Science Teacher Association, and many others.

To learn more about CPO's science and services and how they're benefitting society, visit www.cpo.noaa.gov.

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Simkins Dam before (a) and during (b) the late-2010 removal; Merrimack Village Dam (MVD) in 2003 (c) and during the 2008 removal (d). Credit Mary Andrews and Mathias Collins.

How Dams Removal Changes River Channels

Around the Northeast and throughout the country, aging dams are being removed to improve public safety and restore river ecosystems. Dam removal in coastal watersheds also opens access to spawning and rearing habitats for migratory marine fish such as Atlantic salmon, river herring, and American shad.

Dams transform rivers immediately upstream into pond-like environments called “reservoirs” or “impoundments.” These reservoirs trap and accumulate river sediments (e.g., gravel, sand, silt, and clay) that travel from further upstream. At the same time, rivers downstream of dams continue to transport the sediments that compose their channel beds without resupply of sediments from upstream, so they erode and become coarser.

When dams are removed, what happens to the sediments stored behind them? How are the river channels upstream and downstream affected? Project planners and local community members worry that sediments in the former reservoir area will remain indefinitely and create an area that resembles a mudflat more than a river. They may also be concerned that the river downstream will fill with sediment causing flooding, degrading fish and wildlife habitat, and restricting navigation and other human uses.

One way to address these concerns is to remove the sediments from the reservoir area before removing the dam. Removal is usually required when sediments are contaminated. But if the sediments are clean, dredging makes the project more expensive and time consuming—sometimes prohibitively so. Dredging can also be impractical if the reservoir area is large and the upstream watershed delivers new sediment faster than the dredging rate. Also, dredging clean sediments can diminish a project benefit: returning sediments to downstream areas deprived of them for decades because of the dam.

A research team led by the NOAA Restoration Center, a division of the National Marine Fisheries Service (NMFS), engaged in dam removal to restore fish habitat, wanted to learn more about how river channels respond to dam removal sediment releases—particularly how large the impacts are and how long they last. The team compared channel measurements and sediment data from two of the longest-running dam-removal monitoring studies in the country: Merrimack Village Dam in New Hampshire and Simkins Dam in Maryland. They found that these sites, where sediments eroded and moved downstream naturally, had similar upstream responses and proposed a model describing the changes.

Erosion of the stored sediments happens in two phases. During the first phase, rapid erosion removes about 50 percent of the sediments in less than six months. Interestingly, the high magnitude and rate of erosion in this phase happens even during periods of low river flow. When about half of the sediments remain in the former reservoir, the second, and longer, phase begins. Additional erosion happens most often with floods. Downstream responses at the sites depend on channel slopes and base flows.

Large quantities of sediment never persisted for long periods in the former reservoir areas or downstream channels of either site, suggesting that channel stabilization up and downstream is relatively rapid, within months or years—not decades. This echoes findings from many dam removal studies around the country across a range of dam sizes, physical environments, and climatic regimes.

NMFS and partners at the federal, state, and local levels are using this information to plan future dam removals and predict impacts. They also share their data with the National Weather Service river forecast centers so they can update their models with the latest channel changes.

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“We [The Northeast River Forecast Center] benefit in that once the removal occurs, and it is a location that impacted a river gage station, the USGS will usually go out and revise their rating and that is then shared with us to ensure our model reflects the most accurate stage to flow relationship.”

David Vallee
Hydrologist-in-Charge

NOAA People in the North Atlantic Region

Andy Lipsky

Northeast Fisheries Science Center

What are your duties and areas of responsibility?

As Science and Research Planning Officer, I lead and support strategic and annual science planning efforts across our Science Center enterprise—that includes all our science and operational divisions from our five laboratories—Sandy Hook, Milford, Narragansett, Woods Hole, and Orono. I facilitate priority-setting exercises within our Directorate and Executive Board to develop our annual Center Spending Plan, and also support the Center's proposal-development and review processes. Planning activities also include engaging with our stakeholders and outside collaborators to ensure input into these processes. In addition, I am responsible for leading and following up on our annual science and operational reviews where we bring in independent experts and scientists to review and make recommendations for improving our science and operations. I also serve as the Center's congressional engagement Point of Contact.

What do you consider your most significant achievements as a NOAA employee?

Since I have only been at NOAA for less than one year, I would have to say my most significant achievement would be contributing to the establishment of an inclusive and transparent research-planning process. This included leading web-based tool development as well as facilitating agreement on challenging budget discussion with our Executive Board. This fiscal year 2017 budget focuses on the Center Spending Plan that outlines over 145 science activities to fulfil our mission and science priorities—from aquaculture investments, ecosystem and fisheries monitoring, advanced technologies, stock assessments, to Atlantic Salmon.

NART Background

The NART is one of eight regional teams created by NOAA's Regional Collaboration effort. It is composed of 21 members from five line offices and is currently led by Jason Tuell. LCDR James Brinkley is on assignment as the NART Regional Coordinator. For more information on team members and activities visit: http://www.regions.noaa.gov/north_atlantic

How does what you do impact the public and why is it important?

We provide the underlying science to make decisions vital to securing our Nation's food security and conserving species and habitats critical to these services. Setting strong goals and objectives and planning how to best invest our limited resources across our science enterprise portfolio is key for meeting the many demands for our science.

What is your favorite part of your job that makes you feel most fulfilled?

When the "winch breaks are on" and we are waiting to haul back from a trawl- I am in my happy place. Yes I love to be out fishing for work or for recreation, but it's most rewarding working cooperatively with diverse scientists and fishermen to tackle problems of our time. Planning allows us to think about what type of future we want to shape, set goals for getting there, and align the money/resource we have available to invest with these values. That's cool to do working with people of diverse backgrounds.

What is your favorite motto?

My dad served as a supplies officer on the USS Midway during the Korean theater, worked the family farm as a kid, lost his first child in tragedy, and later ran businesses in the auto industry-he was a peaceful, kind, and hard-working human—He used to tell me and my three brothers "when life or problem is hard and you don't think you can solve it—work harder." This has always served me well in my private and work lives.

What would you recommend to those who want to begin a career at NOAA?

Never think you might not be qualified to do something you have never done. Figure out how to do it and be persistent to follow up with people who are doing the kind of work you are interested in. Talk to them and stay in touch with them and keep your eyes open for opportunities.

Andy Lipsky (left) together with colleagues from the AMOS house prior to joining NMFS. The fish they caught was going to the largest soup kitchen in Rhode Island.