

NOAA Regional Collaboration Network
Improving NOAA's service to the Nation through collaboration

2018 Annual Accomplishments Report



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In FY 2018, the National Weather Service (NWS) operationalized wave run up inundation forecasting. This project was championed by the North Atlantic Regional Collaboration Team and is now used in almost every NWS forecast office in the northeast.



Dear Readers,

NOAA's mission spans the entire globe, from the depths of the oceans to the surface of the Sun. With such a wide-range of responsibilities, it can be challenging to see the connections between NOAA's multitude of projects and activities. NOAA's Regional Collaboration Network works to mitigate this issue. The Network is comprised of over 165 NOAA employees and core partners serving on eight regional teams. The teams are made up of individuals from each NOAA Line Office and are located throughout the United States and Territories.

With such diversity, teams are able to see relationships between NOAA's programs and initiatives that might otherwise go unnoticed. I am proud to support them as they improve NOAA's service to the Nation through collaboration.

In FY 2018 I visited several regions, interacted with dozens of team members, met hundreds of NOAA staff, and observed our mission being executed across NOAA's disciplines. On a trip to Alaska, I journeyed around the state experiencing its unique character first hand. One of many high-

lights was spending time with staff learning about how NOAA's science and enforcement activities promote Alaska's fishing industry—the state's largest private employer.

During a trip to the Great Lakes and the state of Michigan, I drove more than 1,000 miles visiting staff at the Thunder Bay National Marine Sanctuary, the Great Lakes Environmental Research Lab and its Muskegon Field Station, and the Grand Rapids Weather Forecast Office, learning about how NOAA aids the Great Lakes economy.

Last fall I traveled to the North Atlantic where I visited with staff from multiple facilities that support the region, including the Northeast Fisheries Science Center, the Taunton, N.Y. Weather Forecast Office, and the Greater Atlantic Regional Fisheries Office.

Over the course of my travels I have seen how the Regional Collaboration Network contributes to the success of NOAA as a whole. This document describes some of these successes, highlighting key accomplishments undertaken within each region in 2018, including collaboration with Sea Grant in the Gulf of Mexico and Central Regions, disaster preparedness work in the Southeast and Pacific Islands, and the hosting of three Congressional Roundtables in the North Atlantic, Great Lakes and NOAA West regions.

Please join me in applauding the dynamic work of the NOAA Regional Collaboration Network that is showcased in this Report.

Sincerely,

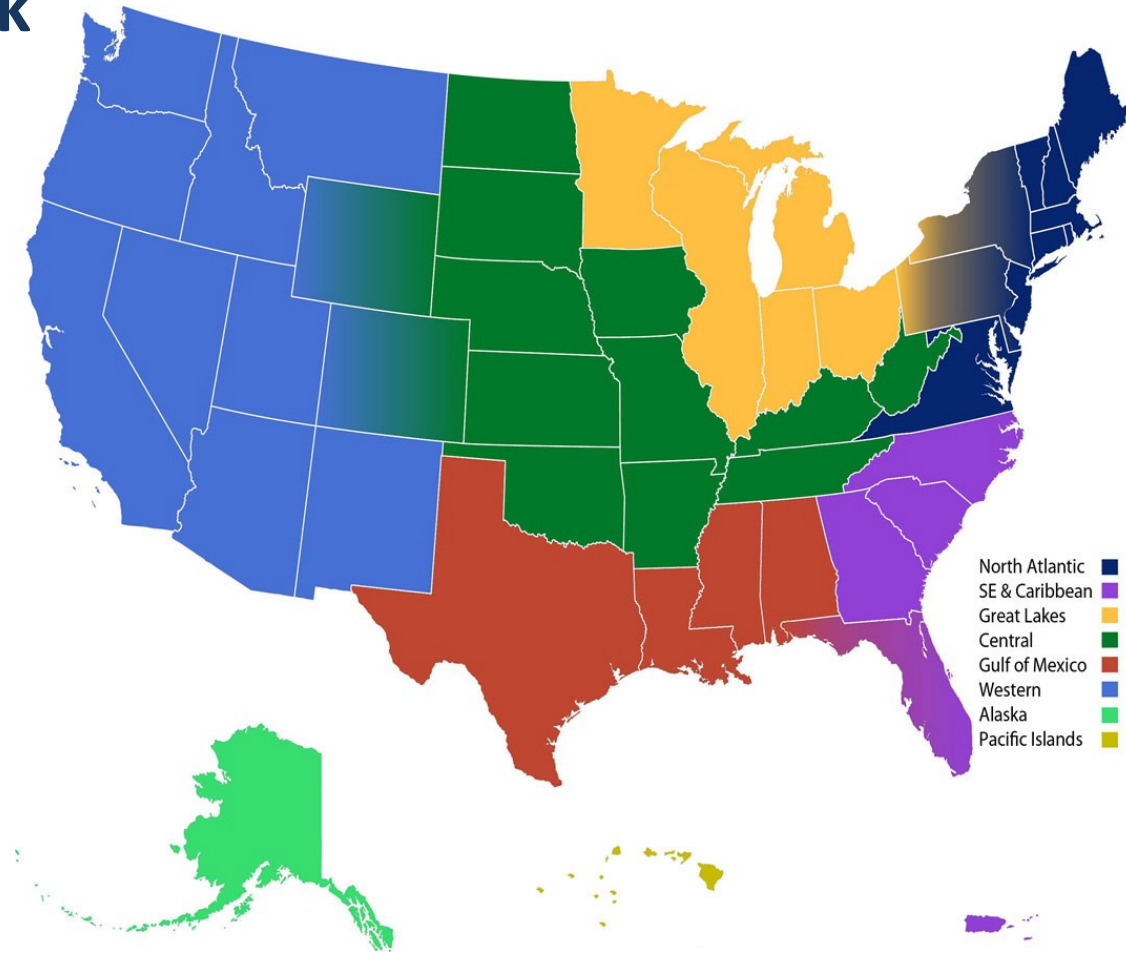
Ben Friedman

Deputy Under Secretary for Operations, NOAA



From left to right: Alaska Regional Team Lead Carven Scott, Alaska Regional Coordinator Amy Holman, Deputy Under Secretary for Operations Ben Friedman, and Deputy Science Director for the Alaska Fisheries Science Center Jeremy Rusin, visit the Mendenhall Glacier in Juneau, AK.

Our Network



9

*Regional Team
Leads & Co-Leads*

8

*Full Time
Regional
Coordinators*

6

*Advisory
Group Mem-
bers*

165

Team Members

Our Strategy

Regional Collaboration Vision

A unified and regionally integrated NOAA

Regional Collaboration Mission

To identify, communicate, and respond to regional needs; catalyze collaboration; and connect people and capabilities to advance NOAA's mission and priorities

GOAL #1: Address regional challenges by connecting people and resources

- ◆ Gather information on place-based issues and impacts.
- ◆ Identify and fill data, communication, coordination, and resource gaps.
- ◆ Develop and extend NOAA's interdisciplinary capacity to improve regionally tailored cross-line office activities.

GOAL #2: Exchange both national and regional insights that inform action

- ◆ Enhance leadership understanding of regional issues and the interconnectedness of NOAA expertise.
- ◆ Search, gather, integrate, and disseminate information.
- ◆ Provide guidance and support of NOAA-wide, cross-line regional programs.

GOAL #3: Improve the understanding of and respect for NOAA's broad mission and regional capabilities

- ◆ Foster interaction among NOAA and with partners by serving as effective liaisons.
- ◆ Elevate awareness and value of NOAA in the region.
- ◆ Build a more informed NOAA workforce.

Core Values

Regional knowledge & context matter

Partnerships & shared responsibility are foundational

Relationships are based on mutual trust and respect

Collaboration is essential to successful leadership

Innovation & creativity are integral to executing NOAA's mission

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Thank you to our Network and partners who made this report possible.

Congressional Roundtables:

Showcasing NOAA's Work in the Regions to Congressional Staff

A hallmark for Regional Collaboration Teams are the regional Congressional Roundtables. These events focus on exposing district Congressional staff to cross Line Office work on regional issues. In the field, it can be challenging to understand the wide breadth of NOAA and how the different programs work together to solve challenges. The key to these events is using NOAA partners to tell the NOAA story and help make the connection between government work and local benefit.

In FY 2018, three regions held Congressional Roundtables.



NOAA scientist Steve Ruberg shows off the Great Lakes observation capabilities during a tour with Michigan Congressional staff.

GREAT LAKES

In FY 2018 the Great Lakes Team held its first Congressional Roundtable ever. The Michigan Congressional Roundtable included staff from the offices of Representatives Kildee (D-MI-5), Moolenaar (R-MI-4), Lawrence (D-MI-14), Mitchell (R-MI-10), Dingell (D-MI-12), Huizinga (R-MI-2), and Trott (R-MI-11) and Senator Peters (D-MI). The Team provided short presentations and full discussion of NOAA work, centered under the themes of blue economy. The roundtable focused on maritime commerce, transportation, and safety; vibrant coastal com-

munities; and last, healthy habitats, healthy waters, which were used to bin NOAA's work and are areas that are of particular interest to Congressional staff in the state of Michigan. As a result of the meeting there was follow up communication from several congressional office and additional tours with members that NOAA in the Great Lakes had not engaged in the past.

WEST

NOAA West hosted a Congressional Roundtable with representatives of the Washington State Delegation. The Congressional roundtable drew nine Congressional staffers from the Offices of Representatives Herrera Beutler (R-WA-3), Smith (D-WA-9), Jayapal (D-WA-7), Larsen (D-WA-2), Kilmer (D-WA-6), Heck (D-WA-10), and DelBene (D-WA-1), and Senator Cantwell (D-WA). Discussion focused on NOAA's work to strengthen economic and community resilience and ensure food security

for the citizens of Washington and our Nation. The thematically focused sessions included six partner presenters from the private sector, academia, state and local government, and non-governmental organizations, paired with seven NOAA presenters representing three Line Offices.

The event coincided with a NOAA Open House for the public organized at the Western Regional Center. Congressional staff enjoyed the opportunity to engage directly with NOAA personnel and partake of the tours.

“When you think of NOAA, you think of a lot of things. This [roundtable] is very valuable and we recognize the benefit of NOAA in our communities.”

—Staffer from Office of Senator Benjamin Cardin

NORTH ATLANTIC

The North Atlantic Regional Collaboration Team hosted a Maryland Congressional Roundtable for staff from the Offices of Representatives Harris (R-MD-1), Brown (D-MD-4), and Sarbanes (D-MD-3), and Senators Cardin (D-MD) and Van Hollen (D-MD). The Roundtable focused on the theme of partnering to support coastal communities in Maryland. Topics included oyster aquaculture, marine habitat restoration, and climate resilience.

A particular focus on the oyster industry showed how NOAA's water quality data being collected at select sites along the Chesapeake Bay and its tributaries has allowed oyster farmers to make smart business decisions.

Alaska

Alaska Team Takes On Alaska's Mapping Woes

Ocean inundation models can not be run in Alaska because the seafloor is not stitched to the topography- there is a gap along the coast. Most of the "new" statewide topographic data is over five years old and Alaska still does not have a statewide terrestrial hydrological dataset to inform the region about river flows. Planners can not plan, engineers have to make educated guesses based on small amounts of data, and emergency managers fret over whether or not to evacuate residents during tsunamis. The state of coastal mapping in Alaska hinders economic development and public safety, and the Alaska Regional Collaboration Team is working to improve it.

During FY 2018 the Alaska Regional Collaboration Team recognized that if Alaska's maps are going to be better, NOAA needed to step into a leadership role. The Team focused on benchmarks and forged partnerships that created new models for storm surge prediction. The Team also took advantage of every opportunity to get more of the seafloor and coast mapped.

Recognizing that, without a clear focus, forums created to bring together funding would fade away and the players would default back to working on their own, the Team helped organize state, federal, and industry players committed to making progress on two areas- hydrology and the coastal interface. These pieces are important for development, natural resource management, and protection of life and property.



NOAA Assistant Secretary of Commerce for Oceans and Atmosphere Admiral Timothy Gallaudet (center) learns about mapping at the Port of Alaska from President of Cook Inlet Tug and Barge Ben Stevens (left), and NWS Port Meteorological Officer Larry Hubble (right).

To bring the seafloor, coast, and terrestrial communities together into a cohesive statewide approach the Team focused on:

- ◆ pooling funds across state, partner and federal stakeholders to hire a coastal mapping strategy expert to develop a coastal mapping strategy;
- ◆ generating content and buy-in for the strategy by conducting a second Alaska Coastal Mapping Summit;
- ◆ presenting the success of new water level measurement techniques to technical and policy audiences;

- ◆ and generating ownership from funding and coordinating bodies by bringing together the Alaska Geospatial Committee, the Hydrographic Services Review Panel, the Integrated Ocean Observing System Federal Advisory Committee, and the Alaska Mapping Executive Committee.

Currently, a new coastal nearshore working group is being formed to stitch the land to the sea and commitments have been made to focus agency investments in hydrological mapping. The planet Mars is still better mapped than Alaska, but the Alaska Regional Collaboration Team is helping Alaska and the Nation to leap forward.

The HABs are Coming – NOAA Responds to Concerns of Arctic Residents

Native Alaskans in the Bering Strait region rely on harvesting marine mammals, wildlife, plants, and berries as staples of their diets. In the Fall of 2017 unusual walrus and seabird deaths led to food safety questions. Concerns intensified when testing of carcasses found the presence of Paralytic Shellfish Poisoning (PSP) toxins and the winter brought unprecedented conditions increasing the potential for harmful algal bloom (HAB) events.

The regional Sea Grant agent called on the Alaska Regional Collaboration Team members for help.

Members pulled together a group of regional contacts, HAB experts, wildlife specialists, and human health officials to craft a quick plan.

The International Arctic Research Policy Committee's Environmental Intelligence team offered to help organize, Oceanic and Atmospheric Research's Arctic Research Program and the Alaska Regional Collaboration Team provided funds, the Alaska HAB Network (<https://aocs.org/alaska-hab-network/>) members provided advice and guidance, and researchers from National Marine Fisheries, National Ocean Service, and many other universities and agencies assisted with HAB collection and analysis.

As a result, water and tissue samples were collected to start establishing a baseline of information about harmful algae species in the Bering Strait Region and their geographic extent. Protocols and procedures were identified for collecting and testing the samples and NOAA learned many lessons about communicating back to the communities.

Ultimately, no human health problems occurred this year, but findings on PSP producing cyst concentrations and toxin presence in subsistence foods raise troubling questions. Team members will be meeting colleagues and community reps in 2019 to lay out a plan for monitoring, testing, and communications in the future.



HABs can devastate both subsistence and commercial harvesters. In 2018 NOAA and partners worked to ensure that a plan was in place to respond to a HAB threat. *Photo credit: Alaska Sea Grant*

Central

Shark Tank Events Recognize and Expand Innovative Research Ideas

NOAA has few mechanisms to improve communications between researchers and operational staff, especially early in the idea development process. Fostering research to operations has long been recognized as a challenge for the agency.

Responding to this challenge, the Central Regional Collaboration Team developed events modeled after the TV show “Shark Tank”. In FY 2018 the

team held two events using a format allowing researchers and forecasters to quickly present to subject-matter-experts and gain feedback on their ideas through dialogue. The panel of “sharks” was selected to provide insight, guidance, and make

valuable connections based on their experience in operations, dissemination, specific research areas, and policy.

From the two regional events, six ideas were se-

"Participating in Shark Tank gave us a chance to present our research in a non-traditional setting, and has also enabled us to pursue an innovative project that may have been difficult to fund otherwise."

—Burkely Gallo and Alexandra Anderson-Frey, Shark Tank winners



lected to compete for research funding in the Shark Tank Finals in Silver Spring, MD and showcase their ideas to NOAA leadership. The ideas presented included improving existing forecasting techniques, addressing observation gaps, applications of GOES-16 data, and techniques for evaluation of models.

The two winning ideas were awarded \$50,000 in research funding for FY 2019. These were “*EnSOMble Forecasting: What Machine Learning Can Teach Us About Tornado Prediction*” by Burkely T. Gallo and Alexandra Anderson - Frey and “*Quantitative Precipitation Estimates from GOES-16 in the Western USA*” by Don MacGorman and Kristin Calhoun. In addition, these Shark Tank events demonstrated a model that improved collaboration between Line Offices, provided an opportunity for scientists to learn a new method to communicate their work, and led to connections between staff in NWS and OAR within the National Severe Storms Lab and Earth System Research Lab.

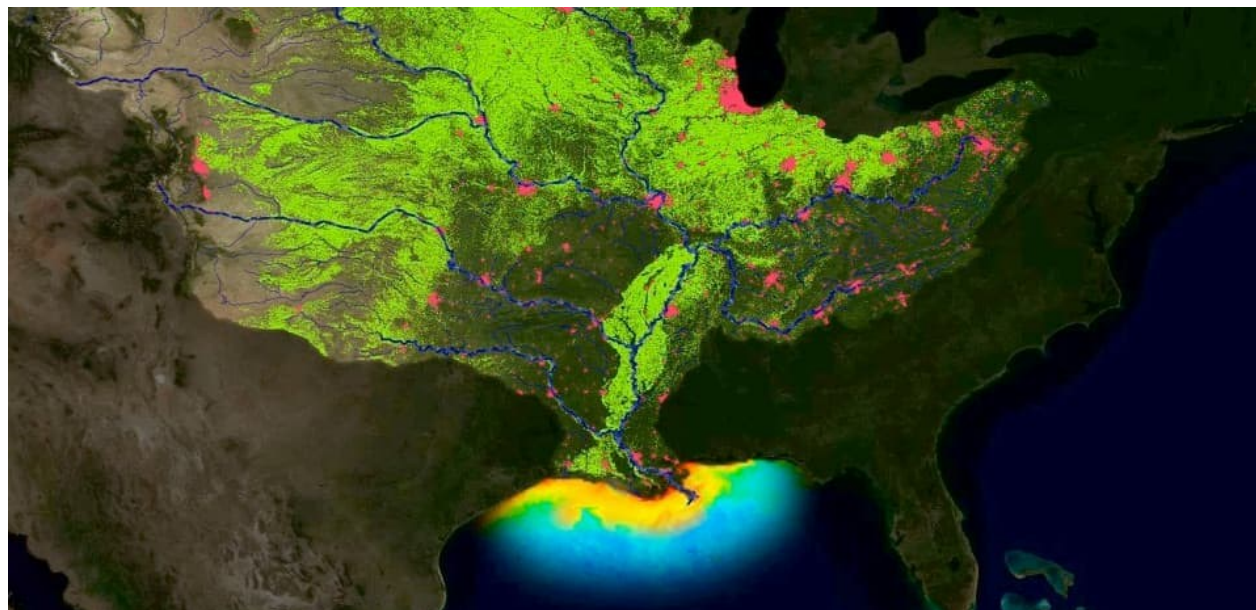
The winners of the Shark Tank Finals include: Alexandra Anderson - Frey (left) and Burkely T. Gallo (middle) for their presentation “EnSOMble Forecasting: What Machine Learning Can Teach Us About Tornado Prediction” and Kristin Calhoun (right) and Don MacGorman (not pictured) for their idea “Quantitative Precipitation Estimates from GOES-16 in the Western USA”.

Tools to Reduce Nutrient Runoff Bring Together Partners Focused on Water Quality

Throughout the Midwest, there is an increased need for tools to help Americans make informed decisions about issues that impact the environment. As an example, runoff from farmlands can wind up in the Mississippi River Basin and flow into the Gulf of Mexico, affecting water quality in the Gulf. Producers can also face significant economic loss when applied fertilizers are washed away.

In FY 2018, the NOAA Central Region Team collaborated with Sea Grant programs in Louisiana and Minnesota to extend awareness of tools designed to improve decisions on when to time nutrient application to decrease the amount of nutrient runoff. The Team brought together communication, outreach, and technical experts to ensure awareness and understanding of the runoff forecast tools. These partners worked together to not only increase interest in these tools, but also expanded their knowledge and network related to other water quality issues throughout the regions.

This collaboration led to the creation of a working group focused on strengthening cross-regional connections in the area of water quality, specifically for the Mississippi River Basin and the Gulf of Mexico. As a result, opportunities to showcase Sea Grant water quality outreach tools were made available through a NOS Science Seminar Series. Research projects were also developed to study best management practices and adoption rates, which will help quantify the savings of preventing



With the Mississippi River Watershed being home to much of America’s agriculture, run off from fertilizers and other nutrients washes down into the Gulf basin contributing to harmful algal blooms. The Central Regional Team helped to expand knowledge and availability of tools to help Midwest farmers lessen the impact.

nutrient and fertilizer runoff. The collaboration led to support of an exchange program between Midwest farmers and Gulf fishermen.

Another benefit included expansion of an educational tool that is valuable in engaging local communities, municipal governments, planners, and classrooms to understand how decisions in their

areas impact water quality downstream. These efforts combined to create a new network of NOAA partners committed to better connecting the upper and lower portions of the Mississippi River Basin.

“Never have I seen a single workshop result in so many new initiatives and collaborations so quickly! We've had new opportunities to help communities understand nutrient issues, and to connect fishermen and farmers.”

—Jesse Schomberg, Minnesota Sea Grant

Great Lakes

Great Lakes Climate Information Providers Improve Services to the Region

Across NOAA employees, especially the climate focal points residing in the Weather Forecast Offices (WFOs), and our core partners, such as Sea Grant, Regional Climate Centers, state climatologists, Great Lakes Regional Integrated Science and Assessments (GLISA) from the Great Lakes Region, are tasked with collecting and providing climate data and information. However, there is no forum or network for sharing information and data tools among these sources. This is compounded by the fact that no organizational regional footprint takes in the entire Great Lakes region as a whole, leading to information gaps.



To address these issues, in FY 2018 the Great Lake Regional Collaboration Team partnered with the Midwest Regional Climate Center to host the Great Lakes Regional Climate Services Workshop. The workshop included Climate Focal Points from eight NWS WFOs and River Forecast Centers, State climatologists from Michigan and Ohio, and representatives from the National Drought Mitigation Center, Great Lakes Integrated Sciences and Assessments Center, Great Lakes Sea Grant, National Center for Environmental Information, Midwest Regional Climate Center, and

the USDA Climate Hub. The purpose of the workshop was to familiarize the attendees with the tools available and how to use them. The workshop also provided an opportunity for the users to interact with the people developing each tool.

One example of the workshop's value was introducing the NWS WFO Climate Focal Points to the GLISA organization and all of the tools for regional climate data and climate information. It is important that climate service providers not only

“[I] saw how multiple other offices are dealing with the climatic issues the Great Lakes experiences.”

—Climate Focal Point Provider

know those involved in sharing this information and what they can tap into, but that they know the experts and they are part of a familiar network that they can rely on and continue to work with in the future.

The workshop also provided a detailed notebook of information, tutorials, links and people that can be passed on to new staff and those coming into positions that need this information.

As a result of this workshop, participants are better able to address stakeholders needs and to identify gaps that might be addressed by new tools and approaches. The Team is building the capacity of participants in the Great Lakes region to use NOAA information for decision making across time scales and to benefit resilience and adaptation

Flooding is a major concern for the area as demonstrated by this photo of a Chicago suburb. The Great Lakes team is working with climate providers to help coordinate climate tools.

planning. Better interpretation and communication of climate outlooks at the regional and local scale allow NOAA field offices to help customers requesting information, such as drought monitoring and drought planning, better recognize events and mitigate some of the effects of drought long before severe damage begins.

Regional Team Provides Communication Tools for NOAA Employees Working with the Public

“Can you tell me what is happening with the proposed Marine Sanctuary in Lake Michigan?” Or, “what is happening with the Great Lakes Restoration Initiative?” These questions and others have been posed to staff from the National Weather Service during meetings with local community groups about weather service products and services.

While these questions represent important topics making headlines, NOAA meteorologists, for example, are not necessarily familiar with the details of the proposed sanctuary or the Great Lakes Restoration Initiative. Nor should they be. Others in the room might not know that the National Weather Service is affiliated with NOAA, or indeed, what NOAA is! NOAA’s mission is sufficiently broad with products and services across many very different areas of work that it would be unreasonable for those with specific expertise in one area to have knowledge of all parts of NOAA operating at a local level.

To solve this problem the Great Lakes Regional Collaboration Team developed tools for NOAA

employees working with the public. Now, when meeting with a local group about a specific aspect of NOAA’s work, a staff member can show a short 2:30 minute video (https://www.youtube.com/watch?v=ZcF07_fPmJ8&feature=youtu.be) about NOAA’s work in the region and can provide handout information to a website (<https://www.regions.noaa.gov/great-lakes/>). Staff were also provided an email address (great.lakes@noaa.gov) to hand out to those asking specific questions. Those questions are then connected to NOAA experts in that field. Increasing the understanding of NOAA and what NOAA does in the region and being responsive to questions from the public increases NOAA’s reputation and positive feelings about the services NOAA provides for the American public.

These cards were developed to introduce NOAA to people in the Great Lakes.

NOAA in the Great Lakes
regions.noaa.gov/great-lakes

NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NOAA
U.S. DEPARTMENT OF COMMERCE

Connecting people with the Great Lakes and achieving our mission of science, service, and stewardship.

Weather
Forecasting, preparing, and building a weather-ready nation

Research
Driving innovative research and technology

Coasts
Protecting maritime heritage, supporting coastal communities, and providing nautical charts

Habitat
Restoring habitat for a healthy fishery, clean water, and recreation

Climate
Preparing communities for changing conditions

NOAA provides products & services in 5 key areas

regions.noaa.gov/great-lakes

Gulf of Mexico

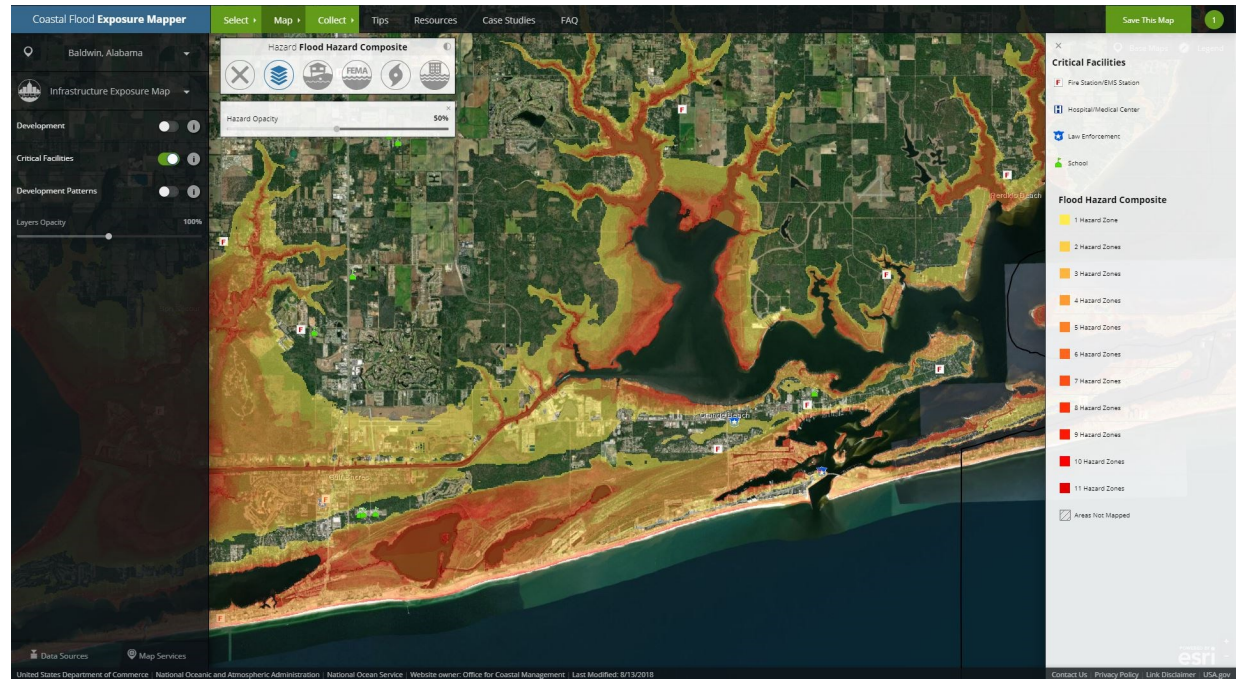
Enhancing how Coastal Communities Assess their Resilience

Coastal towns, counties, and other communities want to look at their resilience to coastal hazards so they can better plan for and act on ways to minimize the potential damage from storms, flooding, or other disruptive events. The Coastal Community Resilience Index (CRI), developed by Mississippi-Alabama Sea Grant Consortium, is an in-person, facilitator-guided self-assessment that helps communities look at their potential risks and needs in such events. It has been implemented in over 55 communities across the five Gulf of Mexico states.

In FY 2018, the NOAA Gulf of Mexico Regional Collaboration Team and Louisiana Sea Grant partnered to enhance the CRI with interactive mapping and to share information about online tools developed by NOAA and partners. After completing an assessment, communities can use these tools to better identify risk. This project is closely connected through a combined working group with two other projects that will: 1) update the CRI overall and provide on-line training for the people that facilitate CRI sessions and 2) include questions and topics on the value of what local ecosystems provide to the communities.

“Interactive mapping is a vital tool for decision makers to mitigate the impacts from a variety of natural disasters. The Team's work further enables this capability for people across the Gulf of Mexico states.”

—Brian LaMarre, Gulf of Mexico Regional Team Lead and Meteorologist-In-Charge, Tampa Bay, Florida, Weather Forecast Office



The Gulf of Mexico Team and Louisiana Sea Grant partnered to evaluate tools like the Coastal Flood Exposure Mapper from the Office for Coastal Management’s Digital Coast that provide beneficial visualizations and can be used as a part of an enhanced Coastal Community Resilience Index assessment. Understanding potential risk areas in their communities can help decision makers prepare for a variety of natural disasters.

Through pilot tests in Rockport, Texas, Orange Beach, Alabama, Jean Lafitte, Louisiana, and Santa Rosa County, Florida, the group refined how to

incorporate interactive mapping of locally-important places and information into the enhanced CRI, and ensure the online tools selected for inclusion are the best ones to meet the needs of participating communities.

These enhancements and techniques will become part of online training to be shared with CRI facilitators across the Gulf region. This will expand opportunities for communities to think about, plan for, and protect against the impacts of major events before they happen.

Helping Resource Managers Improve How They Use Water Level Data

Many central Gulf of Mexico coastal areas show little elevation change over a long distance and are crisscrossed with water. This makes proper use of water level data very important for planning how the rise and fall of water may impact communities, natural resources and restoration or development projects. Beyond real-time monitoring of water

levels, resource managers don't always have the tools, knowledge, or skills available to fully analyze and produce tidal and flooding information.

The Gulf of Mexico Regional Collaboration Team, with the National Ocean Service, specifically Center for Operational Oceanographic Products and Services, Office for Coastal Management, National Geodetic Survey, and NOAA partners including the Northern Gulf of Mexico Sentinel Site Cooperative, and the Grand Bay and Weeks Bay National Estuarine Research Reserves (NERRs), supported

two trainings in how to use water level data. These FY 2018 trainings reached more than 50 participants who learned how to access, process, and analyze water-level data and apply it to case studies.

Being a fairly new course and the first sessions held outside of the Chesapeake Bay, the trainers incorporated feedback overnight to meet student needs. Coastal resource managers and engineers, local government staff, and NERRs staff learned how to connect water levels to land elevations, and how these link to reference values to compare the data to other places nearby.

In a quickly-changing area like the central Gulf Coast, understanding how the water and land levels relate to each other can inform decisions for resilient community planning and help resource managers understand how water levels and flooding patterns may impact their areas over time. Partners in Florida and elsewhere in the country are interested in future opportunities to receive this training.



Coastal flooding is a serious concern for communities across the Gulf of Mexico region. Tools to better model water level data were recently included in a training for coastal resource engineers, local government staff, and estuarine research reserve managers. Being better equipped to fully utilize data available from NOAA and partners equips coastal communities to prepare for such flood events. *Photo credit: Weeks Bay National Estuarine Research Reserve/Angela Underwood*

North Atlantic

Wave Run Up Tool Expands into Eastern Region and Goes Operational

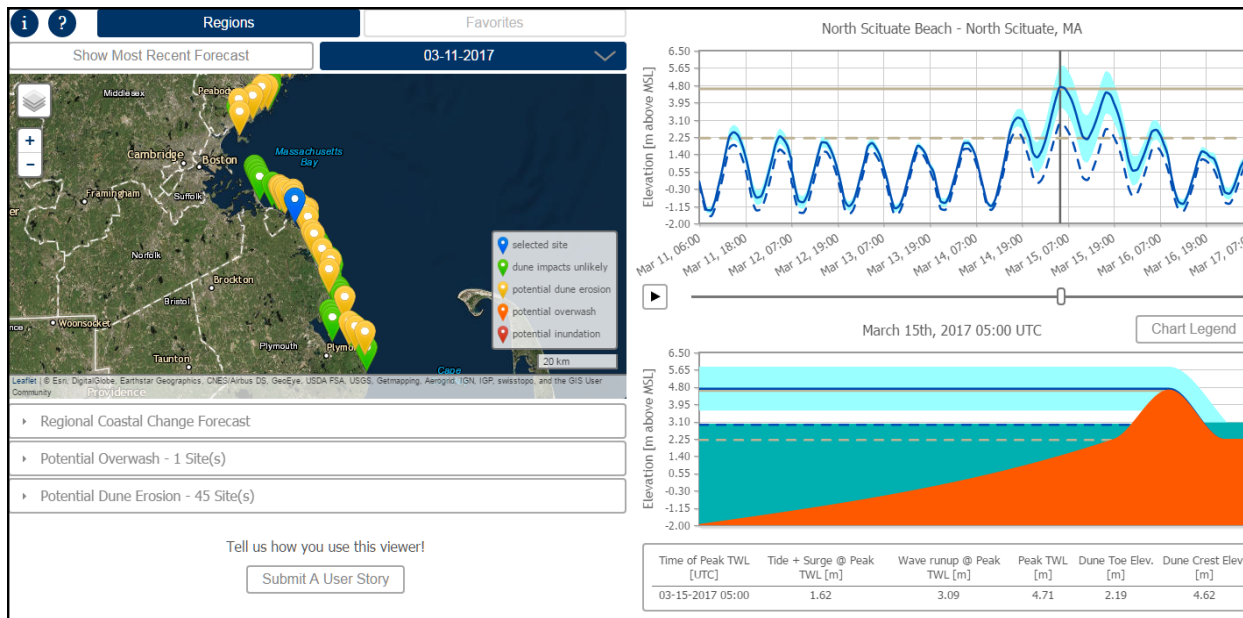
A 2012 service assessment following Hurricane Sandy found that the National Weather Service (NWS) lacked sufficient forecast guidance on inundation associated with wave run up and coastal river making it difficult to forecast impacts from coastal storms. To address this critical issue the North Atlantic Regional Team (NART) funded work to develop the first operational, NOAA run, wave run up model in cooperation with the National Center for Environmental Prediction (NCEP) and the United States Geological Survey (USGS). Using post storm studies from Sea Grant and National Ocean Service data from water level

models and tide gauges, this information provided NWS forecasters with the tools to predict wave run up.

In 2018, the NART Wave Run Up Team expanded the Wave Run Up program to nearly all NWS offices in the Eastern Region while also developing the first seamless high resolution, real-time, visualization tool utilizing resources from NWS offices, NCEP and USGS (<https://coastal.er.usgs.gov/hurricanes/research/twviewer/>). This provides local NWS offices and coastal officials a better understanding and anticipation of coastal impacts resulting from the combination of tidal flooding and large waves. The creation of this tool and its expansion has allowed NOAA, for the first time, to communicate direct threats and impacts to coastal communities due to wave run up, leading

to improved decision making along portions of the coast, especially in areas of high vulnerability to wave run up and coastal erosion.

Since 2014, NART has invested \$5,000 a year in this project. With the latest expansion, the wave run up model has transition into NWS operations though NCEP's server. Currently, almost all of the weather forecast offices in the NWS Eastern Region are utilizing the tool though the Advanced Weather Interactive Processing System.



In March of 2018 back to back nor'easters scoured protective dunes leading to home damage such as this on Fire Island, New York. Often it is the waves on top of the storm surge that cause the most damage. The NART has championed modeling that will allow communities to better predict the inundation from wave run up. This will ultimately allow home owners and businesses to better prepare for possible damage.

Scientists Explore New Applications of Satellite Data on Fisheries

The waters off the northeast U.S. coast are changing at an unprecedented rate, which is affecting fish populations, migratory patterns, and U.S. fisheries. Satellites are able to measure several physical and even some biological properties of the ocean, at spatial and temporal resolutions not attainable by ship based measurements alone. With more than 20 years of ocean color satellite data and almost 40 years of sea surface temperature data, fisheries scientists are looking to use these data to expand their fisheries research.

As part of NOAA's plan for making data more readily accessible and informing scientists, the North Atlantic Regional Coordination Team helped organize the inaugural FY 2018 East Coast Satellite Data Training Class, taught by NOAA CoastWatch. The three-day course focused on how to access and use various types of environmental satellite data. Participants gained hands-on experience working with data of interest to them including:

- ◆ developing water quality indicators;
- ◆ comparing the movement of Atlantic Salmon with oceanographic conditions;
- ◆ monitoring changes in temperature in right whale critical habitat;



The NART sponsored a workshop to help users understand data from satellites hundreds of miles above the Earth. This environmental satellite data could help NOAA to understand issues such as changes in phytoplankton, an important food web driver.

- ◆ identifying suitable aquaculture farm locations;
- ◆ measuring the effects of Superstorm Sandy on oceanographic conditions and scallop recruitment.

The participants left with the knowledge and tools needed to incorporate satellite data into their research and management projects.

Pacific Islands

Tabletop Exercise Increases Preparedness During Hurricanes Victor, Lane, and Olivia

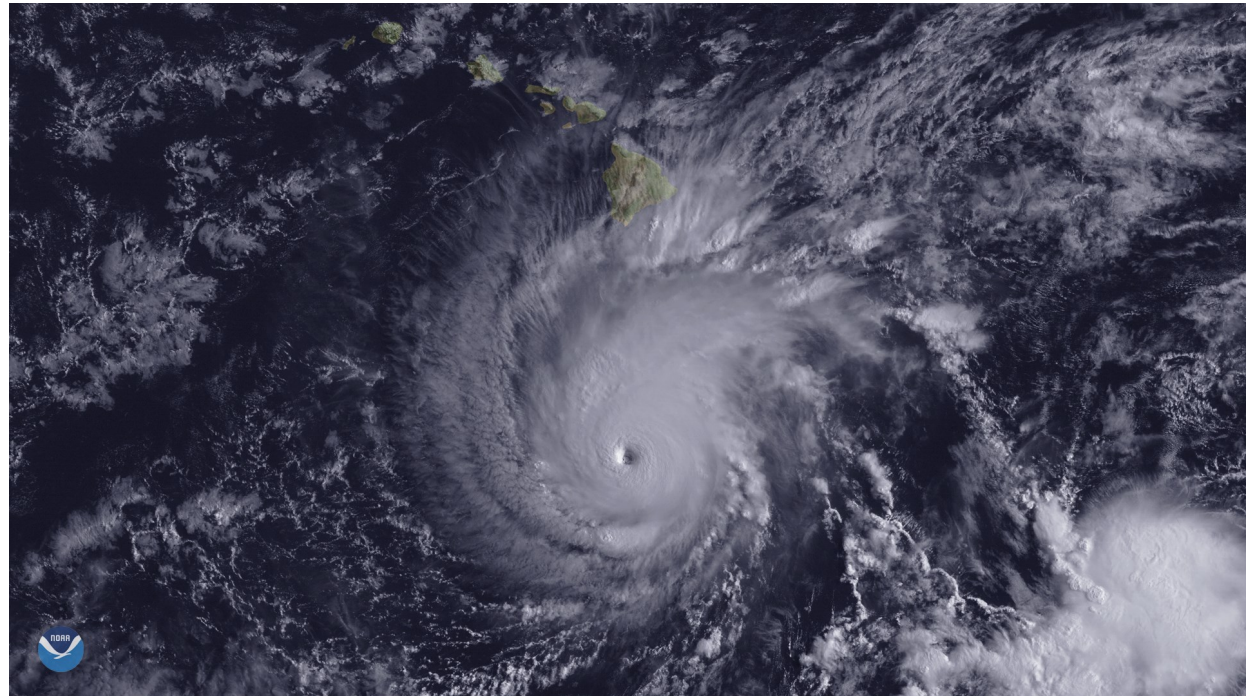
Given the isolation of the State of Hawai'i and the challenges that brings when being faced with a large-scale catastrophic event, NOAA's Pacific Region Executive Board (PREB) recognized that cross-NOAA procedures should be developed and implemented that would both address the safety of NOAA employees, and enable NOAA to carry out its mission at all times.

Building on their FY 2017 planning document *Guide to Integrated NOAA Response and Communication Protocols for Human Caused and Natural Disasters in the Pacific*, the PREB hosted a three-day workshop in FY 2018 to assist the region in preparing to respond to emergency events. The workshop included a two-day table-top exercise, held in partnership with the Gulf of Mexico Disaster Response Center, to practice the Inouye Regional Center's response to a Category 4 hurricane that could potentially impact Hawai'i. The workshop also included a one-day Partners Meeting to help integrate NOAA into the larger Hawai'i-wide emergency preparedness effort.

NOAA staff were tested immediately after the workshop as three successive hurricanes approached Hawai'i. As a result of the exercise, NOAA staff were able to implement newly devel-

“Because of the training, I was afforded the opportunity to meet key players in Emergency Preparedness that I would be working with and it helped us immensely with hurricane preparedness at the IRC.”

—Vasco Espinoza, Site Manager, NOAA Inouye Pacific Regional Center



2018 was a big weather year for the Pacific Islands. This photo shows Hurricane Lane skirting the islands. The PREB's focus on emergency response will help NOAA to be more prepared for similar events.

oped communications and response protocols, such as holding daily briefings for Working Group members that included National Weather Service updates, and initiating their first Incident Command System structures internally within NOAA.

While there is still a significant amount of work to

be done in the region to prepare NOAA for catastrophic events, the workshop moved NOAA forward considerably in the process.

As next steps, NOAA in Hawai'i will update the Response and Communications Protocols with the additional information learned from the workshop and subsequent 2018 hurricanes, and develop an Action Plan to address the existing gaps in the preparedness process.

Cross Line Office Collaboration to Address Climate Data Gaps

The Pacific Region Executive Board and the National Weather Service (NWS) Climate Prediction Center (CPC) organized a multi-day, two part conference for NOAA Pacific Region offices and external partners, focused on the understanding and application of climate data to the Pacific Region. These CPC products have the potential to address existing gaps in research and management efforts to incorporate climate data into the region's models and outputs.

“It was a great opportunity to understand Climate Prediction Center resources and what our science partners at PIFSC would find useful for their research.”

—Workshop Participant



CPC had not previously worked with the National Marine Fisheries Service and the National Ocean Service on these issues, and recognized that this workshop could be a pilot project to assess the viability of reaching out to new audiences and improving the accessibility and use of CPC data and forecasts within NOAA and beyond.

The workshop was held over three days, with the first two designed to build awareness of the products and services that the CPC provides related to climate variability, specifically to NOAA Fisheries and National Ocean Service staff in the Pacific Islands region. Additionally, the NESDIS National Centers for Environment Information and the

OAR's Geophysical Fluid Dynamics Laboratory provided training modules on climate communications and NOAA climate change data. Day three was focused on providing similar information to NOAA partners in climate change and ocean conservation, as well as in emergency response.

As a result of the workshop, a summary report and a targeted list of priorities was developed to address the needs identified by NOAA staff and partners during the workshop. These priorities include:

- ◆ developing specific climatological data for Pacific Region applications;
- ◆ revamping CPC's sub-seasonal to seasonal products, including the presentation formats; and
- ◆ increasing fidelity of observations across the region.

The CPC has already begun discussions with the Pacific Disaster Center in Honolulu on how to improve the content of their system, and additional conversations are planned with other partners to follow up on ideas suggested at the workshop.

Tools developed at the 2018 workshop will help identify areas of increasing sea surface temperatures that affect coral reef health.

Southeast and Caribbean

Mapping the Seafloor of the Southeastern United States

Seabed 2030 established international goals to map the entirety of the ocean seafloor within the next decade. Toward this goal, the Southeast and Caribbean Regional Team (SECART), National Centers for Coastal and Ocean Science, and Office for Coastal Management hosted the second in a series of workshops to improve coordination among agencies in mapping seafloor habitats in the Southeastern U.S. Continental Shelf. Covering North Carolina to Florida, over 40 representatives from federal and state agencies, and academic and non-governmental organizations shared seafloor-mapping activities in the region, including updates

to publicly accessible data portals. Opening channels for data sharing has already saved significant funds within federal agencies by eliminating unnecessary duplication of seafloor surveys.

resource assessments, sand resources as valuable fish habitat, and preserving sensitive deep-sea ecosystems as key ecosystem and economic drivers and requirements for seafloor habitat mapping information. Breakout groups summarized the current state-of-science for collecting and interpreting

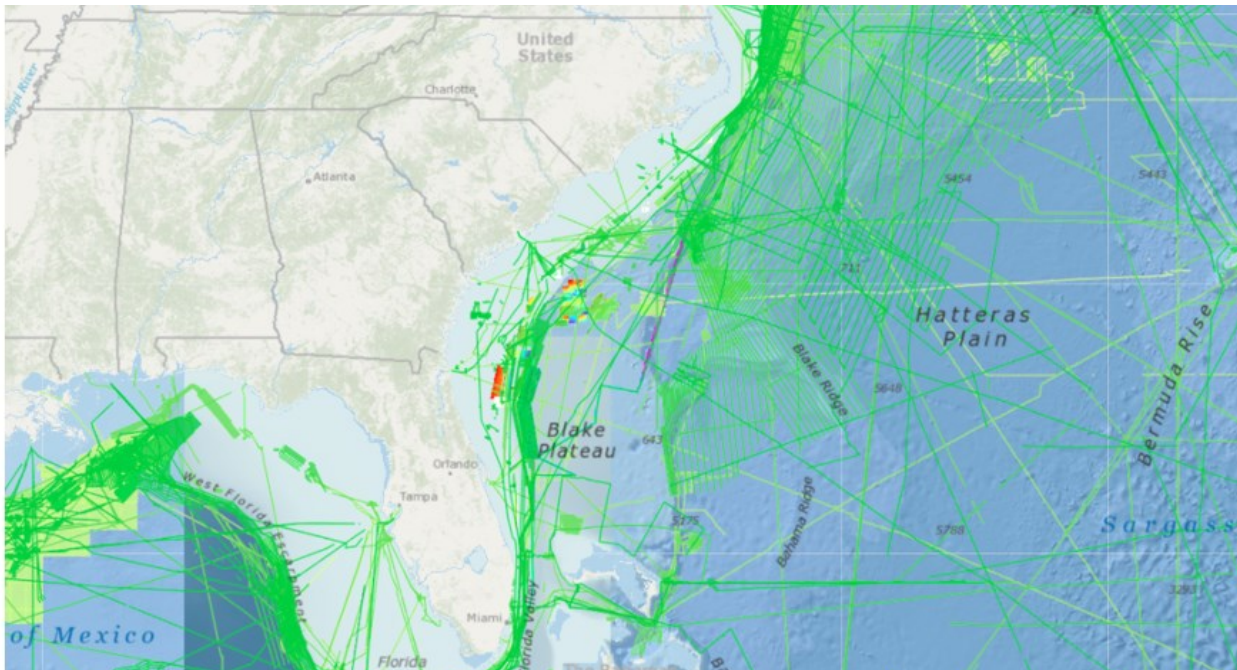
“From the diverse expertise present, I learned that we can map and meet requirements for a variety of resource management needs”

-K. Luciano, South Carolina Department of Natural Resources

With less than 15% of the Southeastern U.S. Continental Shelf mapped, closing this mapping gap has long been a goal for numerous federal agencies and the region. Participants identified fishery

seafloor imagery in estuarine habitats, nearshore ocean sand resources, and outer shelf rocky and deep coral reefs. The group discussed a formal approach to identify gaps and prioritize resources to map new areas of the seafloor in the region. Participants provided valuable input to the appearance and functionality of a prioritization tool.

Workshop organizers will roll out a draft prioritization tool in FY 2019 and conduct a usability test with a subset of workshop participants before distributing widely to regional stakeholders. Plans are already underway for the next workshop in FY 2019.



SECART and partners compiled an extensive inventory of existing seafloor mapping data in the Southeast region.

Improving NOAA's Emergency Response Posture in the Region

Coming off the devastating 2017 Hurricanes Irma and Maria, SECART hosted NOAA personnel from across the Southeast and Caribbean region to work together to improve NOAA's ability to respond to future disasters. The focus of this FY 2018 workshop was the collection and application of lessons learned from Hurricanes Irma and Maria. Twenty-one workshop participants reviewed decisions and actions during the threat, impact, and recovery phases of these two historic hurricanes. Participants also contributed to a spreadsheet of NOAA line office responsibilities and contacts, and provided input for development of a regional NOAA All Hazards Resource Guide.

The contact information from the draft resource guide was shared with NOAA offices and partners in the region so that they had the information available during the 2018 hurricane season. The awareness of roles, responsibilities and relationships developed during this project positions NOAA offices to better serve their own staff, as well as partners and constituents.

One outcome from the workshop is that Critical Incident Stress Management (CISM) was identified as an important component of the health and performance of NOAA team members during major hurricane threats and impacts. Following the workshop, SECART members initiated discussions concerning the incorporation of CISM into training and preparedness plans at local, regional, and national levels of NOAA.



Flooding after a hurricane can sometimes be the most damaging part of the event. Roads can be cut off by flooding, as in this photo of flooding caused by Hurricane Florence in Ringlewood, North Carolina. The Southeast and Caribbean region has been working to increase awareness of roles and responsibilities for NOAA staff during an event—making everyone safer. *(Photo Credit: Air National Guard)*

Leveraging of expertise and relationship building between NOAA personnel and NOAA's partners and stakeholders across the region will lead to better and more timely outreach, education, and risk

communication, resulting in higher quality decisions and actions that save economic and environmental resources.

“Last summer’s exercise provided me with new insights into how to best serve our partners and be creative in doing so.”

—Richard Okulski, Meteorologist-In-Charge, Columbia, South Carolina Weather Forecast Office, and SECART Team Member

West

Inspired by Stories of Service – NOAA West Produces the Historic Documentary “Women of the NOAA Corps: Reflections from Sea and Sky”

Although the NOAA Commissioned Officer Corps traces its heritage to the time of President Thomas Jefferson, it wasn't until September 1st, 1972, that the first female officer was commissioned. Since then, through their skill, strength and expertise, the women of the NOAA Corps have built and shaped a solid foundation for Women in Service.

To help tell the story of women in the NOAA Corps, the NOAA West Team with leadership support from NOAA's Office of Marine and Aviation Operations and NOAA Corps partnered with NOAA's Office of Communications to produce a documentary video. Film production was funded by the team and through a NOAA Preserve America Initiative award with additional financial and in-kind contributions by National Ocean Service Office of Coast Survey, NOAA Office of Communications, and NOAA Fisheries Office of Communications. This historic documentary reveals a rich history of the NOAA Corps through the stories of a small group of women from different walks of life who served at different points in

“I just watched and felt inspired to send you all a note. Your one-word to summarize your NOAA Corps experience: adventure, passion, independence, teamwork, interesting, resiliency, confidence, depth, command presence... well, you nailed it. Uniformed and civilian, it was my good fortune to know/work with you.”

—CDR (Ret.) Matt Wingate



Rear Admiral (Ret.) Evelyn Fields (left) shares a moment off camera with CDR. Briana Welton (right). Rear Admiral (Ret.) Fields was the first women and first African American to hold the rank of real admiral, upper half.

time, but who all share the same sense of dedication toward the pursuit of scientific understanding and call to public service.

The video is publicly available for download through the NOAA Central Library catalog and WorldCat database. The film is also posted to

www.corpscpc.noaa.gov/videos/women_of_the_noaacorps. It is an important and unique contribution to the history of the organization – captured at a time when the “firsts” to join and serve are still alive to talk about it. Viewers and NOAA employees have been inspired by the stories of women in service as well a renewed sense of pride, accomplishment and appreciation for this work. There are reports of people, inspired by this film, seeking to join the NOAA Corps.

Back by Popular Demand - NOAA West Watch: Connecting the Region Through Information Exchange

There is continued demand from NOAA programs and partners, academia, and resource management communities for summary information on regional environmental conditions that span the West coast to intermountain West. This year NOAA West met that demand with the provision of the NOAA West Watch webinar series. This information ser-

vice was offered in collaboration with the Western Regional Climate Center and the three West Coast Integrated Ocean Observing System Regional Associations.

These webinars brought together NOAA staff and partners from across the agency and region to share information about regional scale environmental observations and impacts on human systems. Over the year, NOAA West held five webinars. Each webinar included summaries of region-

“Having the snapshot is helpful, and it's efficient for my time to be able to sit down and get this information quickly versus having to dig around on the internet to get the same information.”
—Webinar Participant, State Government



al observations and seasonal forecasts for precipitation and temperature, an update on ENSO status, near shore observations and marine ecosystem dynamics, and highlights of regional impacts from environmental events including snow drought, wildfires, heavy rains, and mudslides. Invited speakers shared information on research efforts. The webinars are archived and publicly available through the Western Regional Climate Center: <https://wrcc.dri.edu/Climate/WestWatch/>

The webinars are not formal public releases of data but are a mechanism to facilitate interdisciplinary connections and the exchange of information among agency staff and partners on regional climatic and oceanic conditions, particularly departures from normal. The webinar audience is a mix of regionally based NOAA and NOAA funded partners, members of academia, and state and tribal resource managers. The webinar continues to grow by word of mouth with a current distribution of over 124 interested participants.

NOAA West Webinars explore topics important to the West such as the California wildfires that have impacted thousands of residents. The webinar creates an opportunity for NOAA staff and partners to exchange information.

NOAA Regional Collaboration Network

Improving NOAA's service to the Nation through collaboration

