2017 Annual Accomplishments Report
NOAA Regional Collaboration

National Oceanic and Atmospheric Administration

U.S. Department of Commerce

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Members of Regional Collaboration meet at the NOAA Southwest Fisheries Science Center in La Jolla, CA to discuss ways to create a unified and regionally relevant NOAA.

MESSAGE FROM THE DEPUTY UNDERSECRETARY FOR OPERATIONS

Dear Readers,

It is with great pleasure that I introduce the third annual accomplishments report for the NOAA Regional Collaboration Network (the Network). The Network's mission is to identify, communicate and respond to regional needs, catalyze collaboration, and connect people and capabilities to advance NOAA's mission and priorities.

Over 165 individuals serve on eight regional teams across the United States and Territories representing each of the NOAA Line Offices and NOAA's core partners. With such diversity, teams are able to see connections between NOAA's projects and initiatives that might otherwise go unnoticed.

Highlighted in this document are key accomplishments undertaken within each region in 2017, including hosting four congressional roundtables, taking steps to create regional emergency response plans, participating in tribal engagement, and much more. These accomplishments support NOAA's priorities of leading the world in Earth system observation and weather prediction, minimizing impacts from severe weather, and increasing sustainable economic contributions from U.S. fisheries and oceans.

I continue to champion the work of the Regional Collaboration Teams as they connect NOAA leadership with regional issues and opportunities. Over the past year I have had the opportunity to meet with team members and see firsthand the benefits of the Network, which has done an outstanding job of establishing NOAA's cross-cutting work across the country and focusing on the regional needs of our organization.

DUSO Ben Freidman (3rd from left) meets with Gulf of Mexico Regional Team Lead, Brian LaMarre, and Regional Coordinator Kristen Laursen at the Tampa Bay Weather Forecast Office.

Please join me in applauding the dynamic work of the NOAA Regional Collaboration Network, showcased in this 2017 Annual Accomplishments Report.

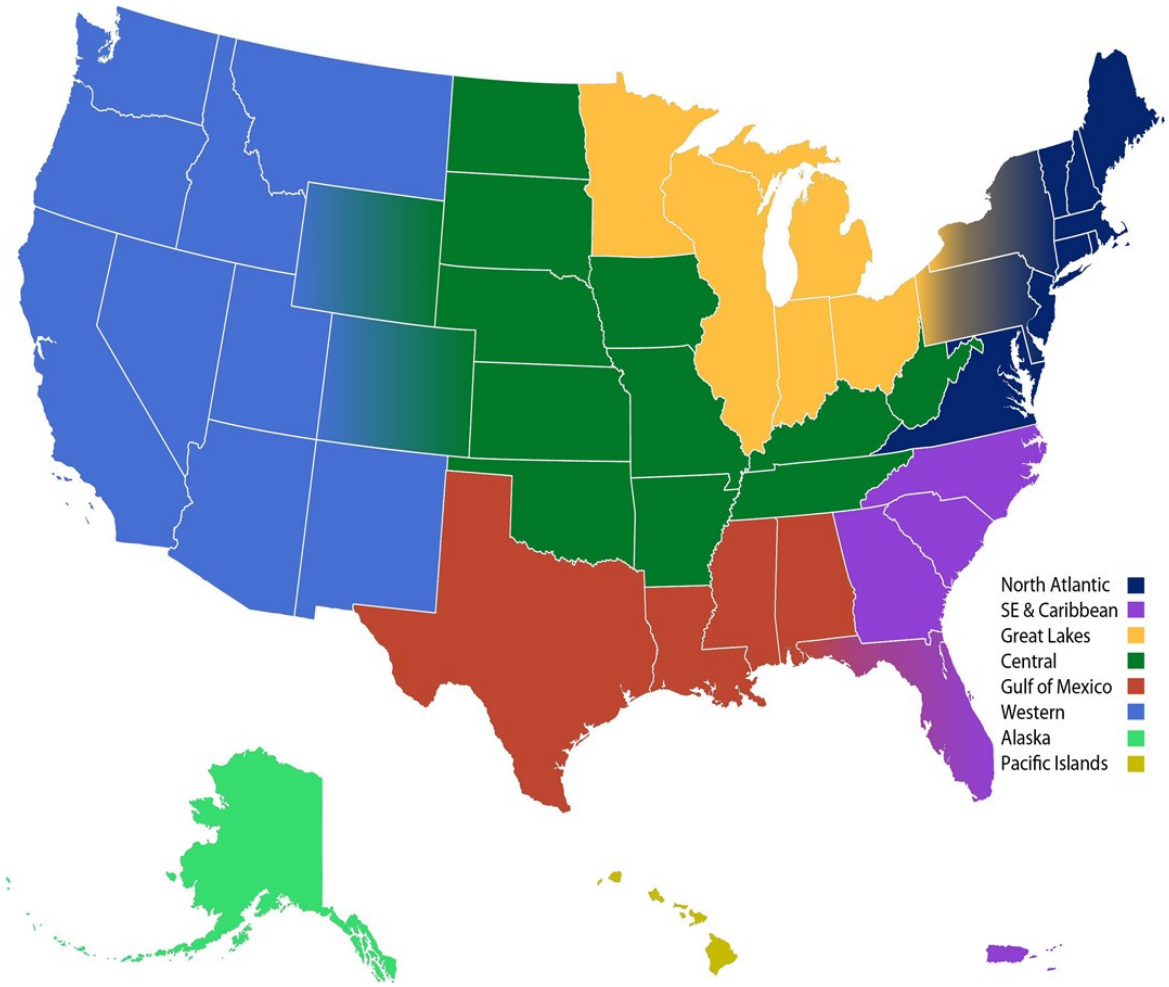
Sincerely,

Ben Friedman
Deputy Under Secretary for Operations, NOAA

OUR NETWORK

Regional Collaboration consists of NOAA employees and core partners working together to represent eight unique geographic regions charged with unifying and integrating NOAA across the United States and Territories.

- Six Advisory Group Members representing the Line Offices
- Eight Regional Team Leads who are senior leaders in the field
- Two Regional Team Co-Leads
- Eight Regional Coordinators dedicated full-time
- Team members from across the Line Offices and core partners
- National Team Lead and HQ Liaison supporting the efforts from D.C.



OUR STRATEGY

NOAA Engagement Objective

Integrated services meeting the evolving demands of regional stakeholders

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 interconnect-edness 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

ALASKA

Reducing Conflict Between Research Vessels and Arctic Communities

Vessel traffic in the Arctic has been increasing greatly over the past decade with industry and research constituting the largest influx. Alaskan Native communities have asked for restrictions on those vessel activities that may conflict with subsistence hunts. In response, the Alaska Regional Collaboration Team has helped develop a Standard of Care for Research Vessels in the Arctic.

In many Alaskan communities the environment is the grocery store. NOAA recently helped to create a plan to mitigate disturbance from research vessels during hunting season.

Working with Arctic Waterways Safety Committee (AWSC), Federal research agencies and Alaskan Native communities, the Alaska Regional Collaboration Team has developed strategies and communication protocols to reduce the risk of research vessels interfering with Alaska Native subsistence hunts in the Arctic. The Standard of Care addresses pre-project planning and notification, in-season procedures, and post-season review and presentation of research results. Operating or chartering research vessels in the Arctic can cost tens of thousands of dollars a day. Following the Standard of Care will ensure researchers won't lose any of their precious days at sea and Native communities will not suffer economic hardship of having to replace subsistence foods with highly expensive store bought food.

The Standard of Care is a keystone of the Arctic Waterways Safety Plan. Since the establishment of the Standard of Care, the number of adverse interactions with the U.S. research fleet has been reduced to zero. Based on this record, and a review at the Arctic Waterways Safety Committee meeting in March 2017, the Standard of Care was formally adopted in December 2017 by the AWSC.

Working Together to Move from Information to Action in Coastal Alaska

With coastal communities experiencing unprecedented environmental change, the latest information and new tools and approaches are desperately needed by resource managers and community planners. In December 2016 a coalition of 14 organizations, including the Alaska Regional Collaboration Team, concluded a series of workshops to provide regional residents and resource managers with the information and tools they need to better respond to coastal environment changes, and to support healthy habitats and resilient communities.

Over 200 science and management questions were gathered at the workshops falling into eight cross cutting issues including the need for increased local emergency response capability and adaptive harvest regulations. To address the issues on a continuing basis, AdaptAlaska was launched as a statewide resilience and adaptation forum and partnership.

"We are not alone in this. There are people out there looking out for our interests as well."
- Millie Hawley, Kivalina, Alaska

AdaptAlaska.org is a central resource bringing case studies, tools, and other resilience information together in one place for Alaska. The website provides a place where the public and decision makers can learn about resilience efforts and find the tools to mitigate effects in their communities. The website ensures that research results are

brought back to the affected communities. It also works to help regional officials to identify, provide access to, and evaluate all tools, information, and case studies relevant to their local priorities.

Other significant results include 1) establishing a Tribal Climate Science Liaison position for Alaska; 2) forming a resilience group in Kotzebue to bring together communities in the Northwest Arctic Borough; and 3) holding an information meeting to kick start the formation of the Aleutian Waterway Safety Committee.

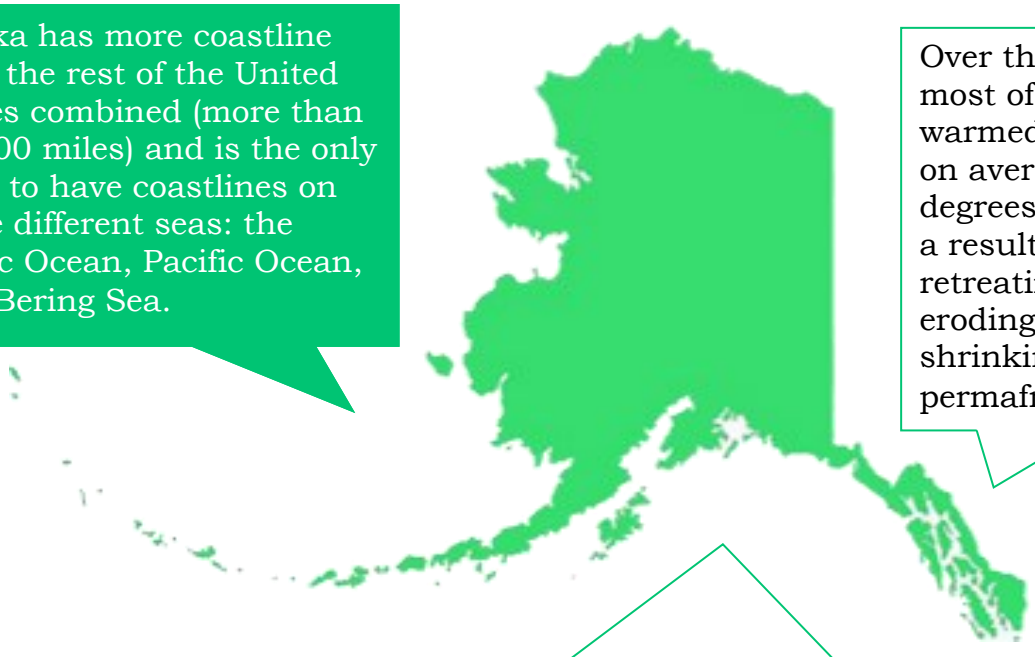
Bringing Reality & Depth to the Arctic One-Health Exercise

Those living in the Arctic, where the environment is the grocery store, understand the connection between the health of food sources and human health and strive to ensure a safe food supply. OneHealth, a new way of thinking about the connection between the environment, plant, animal and human health, was selected as a priority of the U.S. Arctic Council Chairmanship. In response to this priority, the Arctic Council Sustainable Development Working Group decided to hold an emergency response exercise to test, evaluate, and provide recommendations for international responses to incidents affecting health. The Alaska Regional Collaboration Team worked with the State Department to identify appropriate scenarios for the exercise and provide expertise to the effort.

During the February Arctic Council exercise, Alaska Regional Collaboration team members mapped out the process of responding to a harmful algal bloom induced food shortage and wildfire incidents. The team held an internal table top discussion and brainstorming on several health related scenarios in preparation for the exercise. Alaska Regional Collaboration Team members were leaders in the exercise. They came prepared with detailed information about how the response to the scenarios would unfold and helped make the event a success as they had more cross-organizational understanding than other participants.

The findings of the exercise are being used by the Sustainable Development Working Group to inform the creation of OneHealth Hubs and international, intersectoral teams engaged in Arctic OneHealth Collaborative Projects.

Alaska has more coastline than the rest of the United States combined (more than 34,000 miles) and is the only state to have coastlines on three different seas: the Arctic Ocean, Pacific Ocean, and Bering Sea.



Over the past 60 years, most of the state has warmed three degrees (F) on average and six degrees during winter. As a result, Arctic sea ice is retreating, shores are eroding, glaciers are shrinking, and permafrost is thawing.

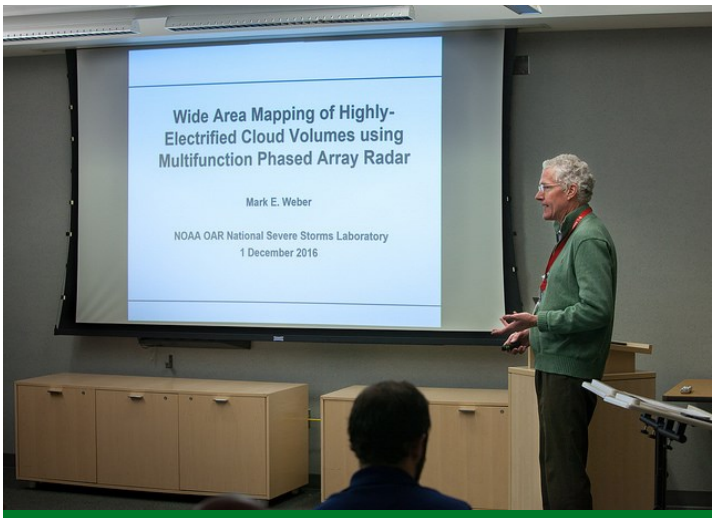
Alaska leads the nation in volume of U.S. seafood landings with 5.6 billion lbs worth $1.6 billion in 2017. This was down 7% in volume, due mostly to a decline in pink salmon and crab landings.

CENTRAL

Using Shark Tank Events to Build NOAA's Interdisciplinary Capacity

To foster early collaboration and communication between Oceanic and Atmospheric Research (OAR) researchers and National Weather Service (NWS) operations staff, the NOAA Central Region Collaboration Team developed and hosted two "Shark Tank" events during Fiscal Year (FY) 2017. The objective was to provide an opportunity to bridge the gap between research and operations by making connections between researchers, forecasters, and NOAA decision makers.

Much like the popular "Shark Tank" TV show, specific subject matter experts were recruited to serve as "sharks" and listen to participants present pitches in an environment designed to nurture ideas. Selected OAR researchers and NWS forecasters made a three minute pitch to the panel. Sharks then had seven minutes to provide feedback and insight on operational and/or research merits of the pitch.



A panel of five "sharks" heard a variety of research ideas for improving NWS forecast operations, such as a pitch on radar products from Mark Weber from the National Severe Storms Lab.

One of the outcomes of these events has been the connections made between those with a good idea and those who can help to move an idea along. At a Shark Tank at the Earth Systems Research Lab in Boulder, Colorado, a researcher performing high-resolution smoke modeling received an invitation from National Weather Service Headquarters to attend a smoke modeling workshop at the National Center for Atmospheric Research. In Norman, Oklahoma, a pitch on radar sampling methods for improved tornado detection caused a shark to exclaim, "Why aren't we doing this already?!"

"Shark Tank series provide a missing link between concept and deployment, where program managers can receive relevant feedback and next step suggestions to progress projects more quickly towards funding leading to ultimate deployment."

- Tim McClung,
NWS Office of Science and Technology Integration

These connections did not just happen between the sharks and the participants. Time was reserved for audience members to ask questions--both of the sharks and participants. Every break was filled with dialogue on how researchers can move ideas into operation and discovery of similar needs for particular products.

Due to the overwhelming interest in application of this model, work is underway to hold similar events in other NOAA labs. For FY 2018, the Central team is working to host Shark Tank events again in Norman and Boulder, as well as a national event at NOAA Headquarters where participants will have increased exposure to resources and decision makers.

Informing Farmers About Nutrient Loss through Runoff Risk Tools

Runoff risk decision support tools identify when and where there is a high likelihood of nutrient runoff from fields, allowing farmers to make informed decisions. These tools continue to grow in popularity as states explore methods to address nutrient loading. The Central Region Collaboration Team continues to serve as a natural conduit to help build a robust network of key partners from the Great Lakes to the Gulf of Mexico. Runoff risk

Nutrient runoff is a cause of harmful algae blooms like this one in Lake Erie. New forecasts will help farmers to know when to spread nutrients.

decision support tools provide information for short-term planning to reduce the amount of recently applied nutrients being transported off the fields and into nearby water bodies.

In January 2017, the Central Regional Collaboration Team released a runoff risk video and short trailer to over 10,000 colleagues and partners. The video and trailer raise awareness of these runoff risk decision support tools as well as explain hypoxia, harmful algal blooms, impacts to watersheds, and the role agricultural practices can play to help reduce nutrient runoff.

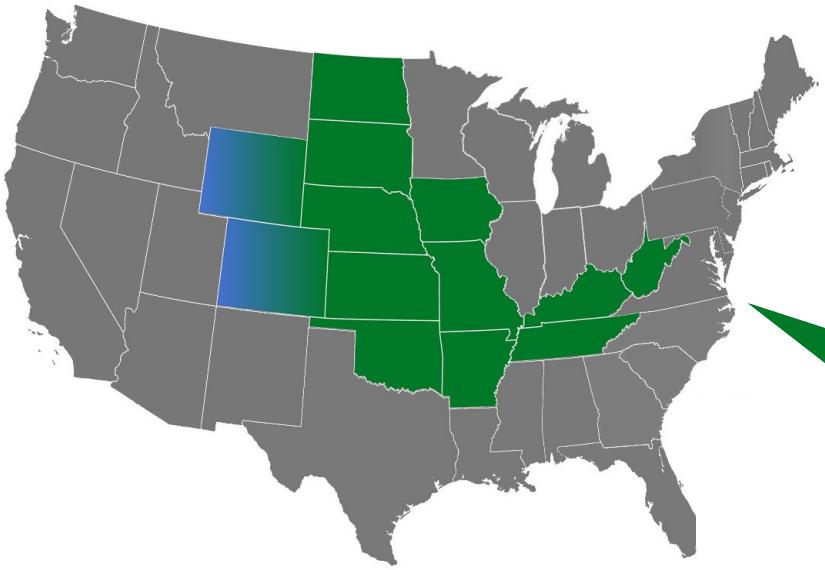
"Based on how rapidly the tool is being adopted by states in the Great Lakes watershed, the outlook is promising for impactful effects on reducing nutrient runoff at a watershed scale."

-Alan Lewitus, Director of Competitive Research Program, National Ocean Service

This increased awareness led to the Central Region Collaboration Team, along with Minnesota and Louisiana Sea Grant Programs, being awarded grant funding to engage with key regional partners to build on existing efforts to reduce nutrient loading and improve water quality. The area of effort will be expanded to the Gulf of Mexico and Great Lakes, both of which see the majority of negative effects from nutrient loading coming off of Central region areas. The results of this project will be highlighted in 2018.

By the end of July up to 46% of North Dakota experienced extreme or exceptional drought, resulting in an estimated $4 - $5 billion overall economic impact to the state in 2017.

The Mississippi River basin covers about 40% of the U.S. and the upper basin alone generates more than $345 billion annually and supports over 1million jobs.



Central Region had six billion dollar weather and climate disasters in 2017, more than any other region.

GREAT LAKES

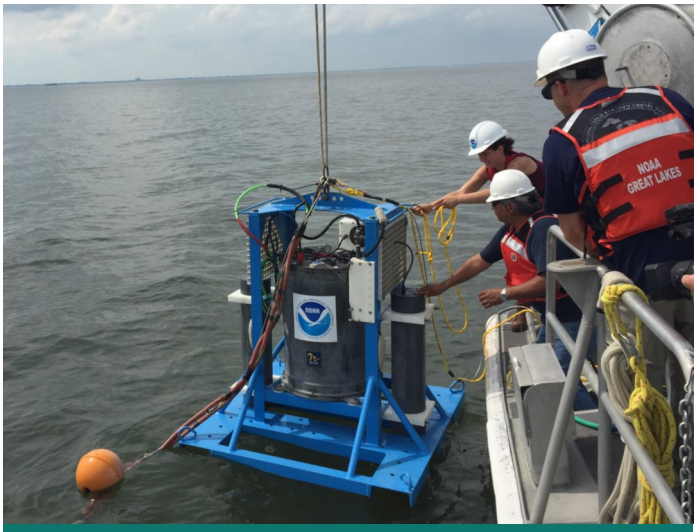
Investing in the Great Lakes Economy through Restoration

The Great Lakes are an integral part of America's economic portfolio. They directly support a $7 billion fishery, and $52 billion recreational industry, and drinking water to millions of Americans. Led by the EPA, the Great Lakes Restoration Initiative (GLRI) is funded by Congress to protect and restore the world's largest source of freshwater. This effort involves collaboration among 16 Federal agencies including NOAA, with input from the eight states bordering the lakes, tribes, and local governments. The Great Lakes Regional Collaboration Team (GLRCT) administers this program, on behalf of NOAA, providing funding management, expertise and coordination. Since 2010, the GLRCT has administered more than 250 projects for NOAA under the GLRI totaling $162 million.

During 2017, NOAA leveraged more than $9.5 million, over 19 projects and across four Line Offices. Two of the 2017 projects are highlighted in this report.

In response to an algal bloom in 2014 that affected the drinking water of more than 400,000 people in Toledo, Ohio, the NOAA Great Lakes Environmental Research Laboratory and a research team from the Cooperative Institute for Great Lakes Research launched an Environmental Sample Processor (ESP), or "Lab in a Can", in Lake Erie's western basin in July 2017. Researchers received funding from the GLRI to purchase the $375,000 ESP, as a direct response to the Toledo event. The lab will test water samples near the City of Toledo daily, and will send results to researchers in near real-time – critical to protecting public health. There are 17 ESPs in use worldwide, but this lab has been the first to be deployed in any freshwater system.

In 2017, NOAA and the Great Lakes Commission (GLC), a binational, interstate compact agency established in 1955 to advance the economic and environmental health of the Great Lakes-St. Lawrence River region, released videos highlighting the economic and environmental impact of restoration work in Muskegon, Michigan, and at the Little Rapids portion of the St. Marys River.



NOAA staff deploys the first fresh water Environmental Sample Processor, or "Lab in a Can" into Lake Erie. The processor will take water samples to inform public health decisions.

The videos reveal how restoration work is enhancing quality of life for local and regional residents and businesses. When completed, the Muskegon projects are expected to increase property values by nearly $12 million, attract 65,000 new visitors annually, and enhance the Muskegon Lake Fishery, which each year contributes more than $1 million to the local economy. A 2011 study determined that over 15 years, dollars invested in Muskegon Lake restoration would result in a 6-to-1 return to the local economy. The Little Rapids Restoration Project has recently completed construction of a new bridge on Sugar Island in the St. Marys River, reestablishing the flow to the Little Rapids for the first time in more than 50 years. This work is expected to lead to improved habitat for native fish populations, revitalized tourism and sport fishing opportunities on the river, and better community access via a new pedestrian walkway.

Leading the Great Lakes Habitat Blueprint Initiative

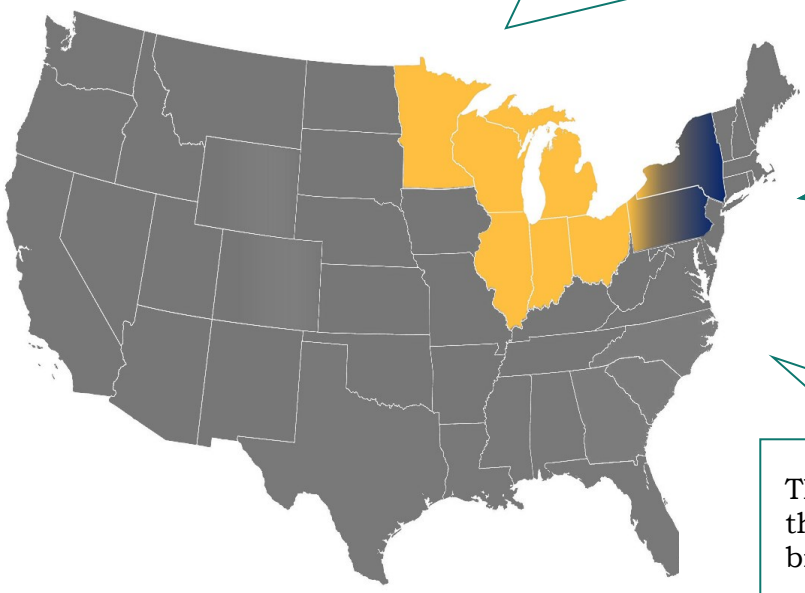
During 2017, GLRCT made great strides in coordinating the implementation of identified actions in its two designated Habitat Focus Areas, the St. Louis River and Muskegon Lake. While both areas historically enjoyed NOAA involvement across Line Offices, the special designation

Construction taking place to restore degraded habitat at the Muskegon Lake Area of Concern.

and GLRCT focus created a format for facilitating collaboration across local, state and federal agencies, assessing actions to restore habitat, and working together to identify and fill gaps to better address community needs. In addition to several restoration projects, a St. Louis River Public Access and Cultural Tourism Guidebook was completed this year. For Muskegon Lake, the Implementation Plan was finalized providing a roadmap for habitat restoration and the Bear Creek Habitat Restoration and Hydrologic Reconnection project was completed.

In 2013, the GLRCT led the Habitat Blueprint Initiative for the Great Lakes region, and through a competitively designed process, designated two Habitat Focus Areas; the St. Louis River, which runs along the border of Minnesota and Wisconsin, draining into western Lake Superior, and Muskegon Lake a coastal drowned river mouth on the west shoreline of Michigan's lower peninsula and connected to Lake Michigan by a navigation channel. Both areas were historic lumber areas that experienced economic transition to chemical and petrochemical companies, foundries and other industries that created environmental contamination and loss of habitat. Today these areas' proximity to the Great Lakes make them draws for tourism and for communities working to transition to a new blue economy. The success of the Habitat Focus Area work has the GLRCT discussing additional designations for the future.

The Great Lakes hold 6 quadrillion gallons of freshwater and contain 95% of the United States' fresh surface water. They are a reliable source of drinking water, transportation and power for the region and nation.



The port of Duluth-Superior is the largest by tonnage in the Great Lakes. It moves more than 35 million short tons of cargo, anchoring the Great Lakes St. Lawrence Seaway system and serving as mid-America's gateway for domestic and global trade.

The Great Lakes directly sustain more than 1.5 million jobs and generate $62 billion in annual wages.

GULF OF MEXICO

Strengthening Collaboration to Emergency Response Situations

Whether it be an oil spill, harmful algal bloom, or extreme weather event, NOAA plays a large role in both science and decision making in the Gulf. With the Deepwater Horizon incident still embedded in memory, along with a deep awareness that the region is vulnerable to a variety of hazards, the Gulf of Mexico Regional Collaboration Team focused on supporting emergency response planning efforts.

ICS-300 participants work through a simulated spill response exercise.

The Gulf of Mexico Regional Collaboration Team brought together representatives from Weather Service Southern Region, Gulf coastal Weather Forecast Offices, and the National Ocean Service Office of Response and Restoration at the Disaster Response Center in Mobile, Alabama to discuss their offices' needs and capabilities in emergency response situations. The workshop helped team members understand how they could best assist each other in preparing for such situations and built connections that will benefit their operations and response activities. Participants discovered areas where they could improve partnerships and information flow during emergency response situations, and identified actions for strengthening relationships and NOAA's overall preparedness posture.

After the workshop, the Team members participated in a three-day training on the Incident Command System (ICS) 300. ICS is a standardized system to support effective emergency response across Federal agencies. The NOAA Disaster Response Center developed this version of ICS-300 training, including classroom time and simulation exercises, to reflect NOAA-specific response roles. Participants also had a special opportunity to learn about the Coast Guard's Gulf Strike Team, a unique group of highly-trained hazard response specialists. The workshop and training allowed team members to gain a clearer sense of their potential roles in an emergency response situation, learned where connections between offices may improve existing response patterns, and developed relationships across Line Offices that may improve emergency response effectiveness in the future. The Team members committed to help represent their offices in emergency response should the need arise.

Gulf of Mexico Climate and Resilience Community of Practice Celebrates Eight Years

The 2017 Gulf of Mexico Climate and Resilience Community of Practice Annual Meeting was hosted by Louisiana Sea Grant and the City of Covington, Louisiana, and brought together over 60 education, outreach, and extension professionals from local government staff for an in-person exchange of ideas and best practices.

This forum provided an avenue for sharing climate and resilience science, interacting with visualization tools, sharing communication tips, and learning what communities are doing to deal with critical issues like coastal and inland flooding. The Gulf of Mexico Regional Collaboration Team supported this event because it gave NOAA a valuable opportunity to hear what tools and resources communities really need as well as how they use these resources. It was also a great venue for hearing about local needs for products and services. Such meetings increase NOAA's awareness of climate adaptation work happening at the local level so we can better support, leverage and extend those efforts.

Communities involved shared success stories, such as Ocean Springs, Mississippi, who are working on a business continuity plan to speed recovery from storm events, and Covington, Louisiana, developing a flood preparation and response plan to improve notification of flash flood events and better allocate resources during and after such events. Biloxi, Mississippi is pursuing funding for a living shorelines project after a Sea Grant presentation about the benefits of living shorelines, and Fairhope, Alabama asked to conduct a Community Resilience Index self-assessment after hearing from other communities that it helped them start much of their resilience and adaptation work.

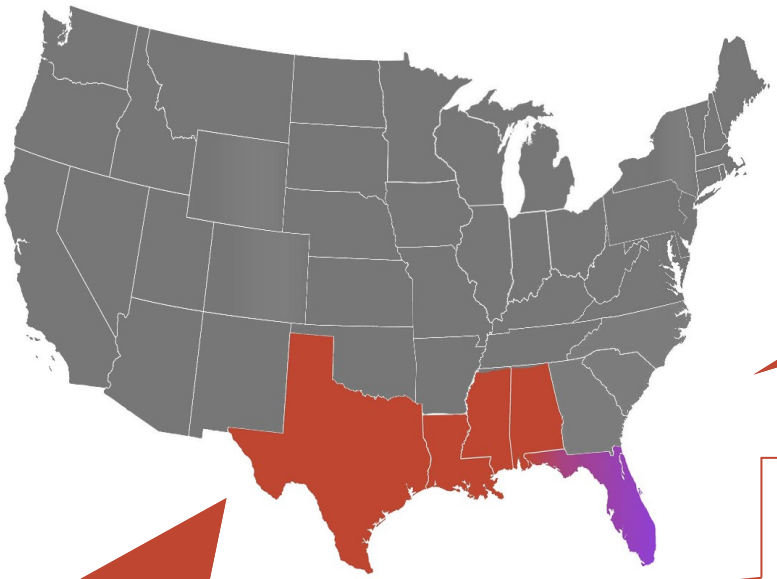
Over time, the Community of Practice meeting has moved from featuring NOAA and Sea Grant speakers to featuring local community leaders sharing with each other how they are using NOAA products and services to improve resilience in their own towns, cities, and counties - truly building a partnership-based community of practice in the Gulf of Mexico region.

The Community of Practice shares ways that municipalities can prepare for and recover from flood events such as this in Louisiana.

Information Sharing: Gulf of Mexico Forum

The Gulf of Mexico Regional Team hosts a Gulf of Mexico Forum webinar every other month to share NOAA and partner projects, successes, and information of broad interest. This year, webinars focused on 1) the Northern Gulf of Mexico Sentinel Site's efforts to inventory continuously operating GPS reference stations that help validate vertical elevation data, 2) traditional ecological knowledge in coastal decision-making with Louisiana Sea Grant, 3) Gulf of Mexico integrated ecosystem assessment, 4) several short topics presented in a speed-round format, 5) the Gulf Ecological Effects of Sea Level Rise program and 6) RESTORE Science Program funding recipients.

The Forum webinars increased awareness of Gulf-relevant NOAA initiatives. For example, the April Forum on integrated ecosystem assessment led to a significant spike in interest and web hits to the Gulf of Mexico Ecosystem Status Report. Forum participants were particularly positive about the speed-round session, citing the opportunity to learn about a number of different topics across NOAA in a short amount of time. The short time allowed for the speed-round sessions removes much of the formality from presenting, and can spur camaraderie in a group as well as potential collaborations.



The Gulf of Mexico's "dead zone", an area of low oxygen that can kill fish and marine life, in 2017 measured about 8,776 square miles, or about the size of New Jersey. It's the largest measured since dead zone mapping began in the Gulf in 1985.

In January 2016, the nation's first Fishery Management Plan for Aquaculture in federal waters was established in the Gulf of Mexico.

The highest relative sea level rise trends are in Louisiana, at about 0.3-0.4 inches a year.

NORTH ATLANTIC

Economic and Environmental Impacts on Tribes in the North Atlantic

Much of NOAA's mission and work benefits the 12 federally recognized tribes in the North Atlantic especially those concerned about fish and shellfish, habitat, and water quality. Recognizing the specific economic and environmental impact to tribes brought by recent changing conditions, the North Atlantic Regional Team (NART) convened federal, academic, state, municipal, and partners to connect with the Mashpee Wampanoag Nation on the latest work being conducted in the region. Modeled after the team's successful congressional roundtables, the NART is hoping to bring a new cross line office approach to tribal engagement. By relying on partners to the tell the story, the roundtables allowed participants to be aware of and connect with valuable NOAA and partner resources.

The roundtable was held at the Tribal Community and Government Center in Mashpee, Massachusetts, and attracted nearly 40 people, including 17 members of the Mashpee Wampanoag Tribe.

As a result of the Team's engagement, the Tribe asked NOAA to participate in their annual Preserving Our Homeland Summer Camp. The Team was able to reach out across NOAA and to other federal agencies and provide instructors to teach native youth on topics including marine biology, geology, and environmental science relevant to the Mashpee Wampanoag homelands.

Regional Team Lead, Jason Tuell (second from left), attends the 1st North Atlantic Regional Team Tribal Roundtable .

> 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,"
>
> -- Chairwoman Jessie "little doe" Baird, Mashpee Tribe

Pennsylvania Congressional Roundtable: Community Resilience in the Urban Environment

The need for good relationships with congressional staff and partners in the North Atlantic is evident with high profile topics like the development of new offshore energy areas, repercussions of the cod fishery collapse, and impacts of extreme weather. To build the relationship between NOAA and in-district congressional staff, the NART hosted a Pennsylvania Congressional Roundtable at Drexel University which brought together a panel of NOAA staff and core partners to provide an overview of NOAA's products and services in the region.

The roundtable centered around community resilience and connected to important Pennsylvania issues such as urban preparedness and planning, port infrastructure, weather decision support and the urban watershed. The roundtable attracted nearly 40 people, including staff from the offices of Senator Christopher Coons (D-DE) and Representative Brendan Boyle (D-PA-13). NOAA staff and other federal partners in attendance shared experiences that provided context for the economic impacts of NOAA's work.

NOAA staff presented on NOAA activities in the region including fisheries restoration, navigation services, and extreme weather preparedness, all of which have strengthened existing partnerships.

Saving Millions Through Wave Run-Up Prediction Models

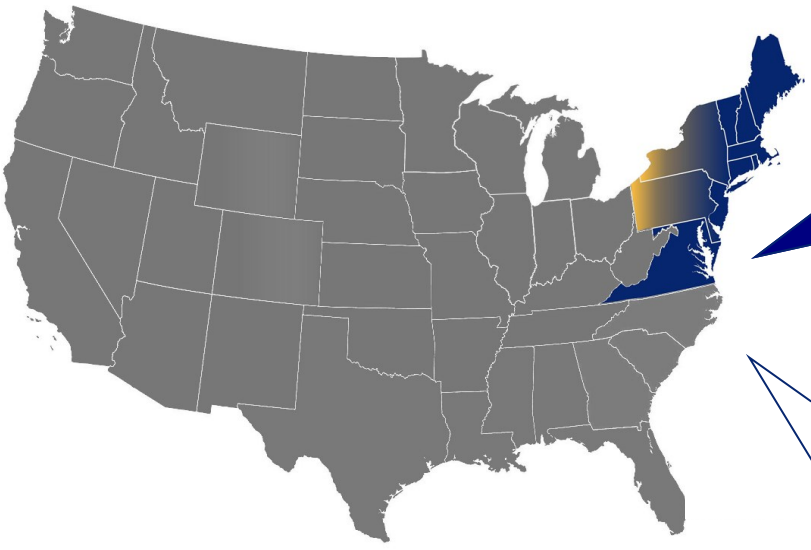
Wave action along the coasts of the United States is one of the most destructive forces from coastal storms and hurricanes. It is estimated that it costs $1 million per mile of coastline to evacuate. Although storm surge plays a large role in coastal destruction, the waves on top of the surge often result in the most damage. While there have been numerous advances in storm surge forecasting and messaging in the past several years, wave run up capabilities have lagged behind. NOAA efforts to improve this forecasting capability have begun in the Northeast United States, largely through efforts funded by the NART.

The NART wave run-up project produced a stand-alone executable program which determines whether dune erosion, over wash, or inundation is forecast at high tide within the next 72 hours based on beach morphology and wave conditions input. Once fully developed and coupled with a robust display and outreach, this forecast system will enable NOAA to provide relevant, actionable information to coastal residents, thereby contributing greatly to NOAA's total water forecasts.

Bob Thompson (3rd from left), Meteorologist in Charge for the Taunton Weather Forecast Office, helping stand up a wave run-up test site in New England.

Due to the need for this program, work quickly expanded to include the Southeast and Caribbean Regional Team through Morehead City, North Carolina, and Charleston, South Carolina, weather forecast offices. Work such as this could allow for greater accuracy in evacuation planning potentially saving state and federal agencies millions of dollars.

Of the Northeast's population, approximately 1.6 million people live within the Federal Emergency Management Agency's 100-year coastal flood zone, with the majority – 63% of those at risk – residing in New York and New Jersey.



The biggest source of nitrogen pollution in the Chesapeake Bay is agricultural runoff, which accounts for 41% of the nitrogen pollution in the Bay, mostly due to animal waste and fertilizers.

There have been over 16,000 launches from the rocket testing range at Wallops Flight Facility in Virginia since its founding in 1945. The facility supports science missions for NOAA.

PACIFIC ISLANDS

NOAA Contributes to National Climate Assessment

The National Climate Assessment brings together experts in the scientific and policy fields to review the data and present the latest findings in climate change to the public in a transparent, scientifically-defensible, and easy to understand report. During 2017, Pacific Island Regional Team Members served as lead authors and contributors on each of the Pacific Island sections of the draft fourth National Climate Assessment. Pacific Region Regional Coordinator Seema Balwani and Jeff Polovina (NOAA Fisheries) were co-authors for the Adaptation Chapter and Oceans Chapter, respectively.

Creating a National Climate Assessment is a great undertaking. As part of being a lead author, each author assembled expert teams in the fields of climate change policy and science, to develop consensus-based key messages and text. Lead authors held meetings with team members, led workshops, and led panel discussions and evening events to gather input from the public. Team members and leads also served as editors and reviewers for the report.

Severe storms, sea level rise, loss of habitat—these are just a few of the issues the National Climate Assessment report addresses.

This report collects, integrates, and assesses observations and research from around the country, helping the public to see what is actually happening and understand what it means for American lives and livelihoods. The report includes key findings that highlight the Pacific Islands impacts from environmental changes. It states that dependable and safe water supplies for Pacific Island communities and ecosystems are threatened by rising temperatures, sea level rise, and changing precipitation patterns which increase the risk of extreme drought, and flooding. In addition, warmer ocean temperatures and ocean acidification will result in loss of reef structure, leading to lower fisheries yields, and loss of coastal protection and habitat; these losses are threatening fisheries and the livelihoods they support.

> "NOAA's regional expertise in oceans, fisheries, and the adaptation of coastal communities was critical in writing the Hawaii and Pacific Islands chapter of the draft fourth National Climate Assessment. Dozens of scientists in multiple offices were eager to collaborate, and helped ensure that our chapter reflected the most up-to-date science in the region."
>
> -Victoria Keener, PhD, Lead Author of the Hawaii and Pacific Islands Chapter for the 4th National Climate Assessment

Addressing Regional Issues Through Cross-Line Office Collaboration

Impacts of shifting weather and climate patterns are widely felt in Hawaii. Given its geographical isolation, extreme weather can create life and death situations. In December 2016, the NOAA Pacific Region Climate Forum, sponsored by the Pacific Region Executive Board and Pacific Islands Regional Collaboration Team, was held to enhance cross-Line Office collaboration on the changing climate and its impacts consistent with and complementary to individual NOAA Line Office climate action plans. A survey was sent out to all Line Offices prior to the meeting to collect information on ongoing and planned projects and activities related to this topic.

Participants were briefed on the elements of climate services, the history of NOAA climate services in the Pacific, and the results of the NOAA Pacific Islands Climate Activities Survey. Participants broke into small groups to identify target areas to focus future activities, including gaps related to the provision of NOAA climate services in the Pacific, and to identify and prioritize specific projects and activities for cross-Line Office collaboration over the next 2-5 years.

Outcomes from the Forum included: a common understanding of elements of climate services, including a regional climate services framework; a common understanding of NOAA climate services-related activities in the Pacific, including a regional inventory of projects and activities; and identification of recommended actions that would form the basis for a regional action plan that identifies a priority set of projects to target for cross-LO collaboration over the next 2-5 years. One continued action is support for the NOAA El Niño/Southern Oscillation (ENSO) Tiger Team, which includes a Pacific Islands Regional Collaboration team assessment of the 2014-16 El Niño, ENSO Fact Sheets as needed, and Quarterly 'Conditions' Briefings. Another is the development of conditions and impacts Indicators for the Pacific Islands, with a focus on marine ecosystems, community resilience, and national security by Pacific Regional Collaboration Team members.

The NOAA Pacific Region Executive Board will use this information to incorporate into its regional strategic planning for 2018.

Emergency Response Planning

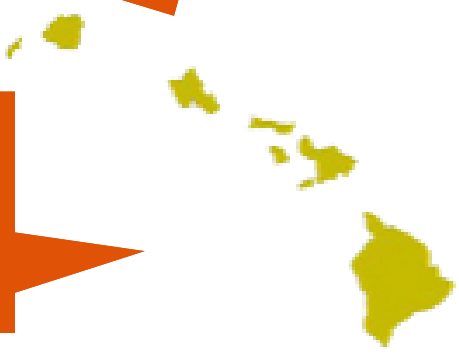
In an emergency, NOAA will be faced with securing its personnel, addressing its mandates, and supporting the community. In the Pacific Islands this can be complicated due to the geographical isolation. In a proactive move, the Pacific Regional Executive Board (PREB) determined that an Integrated Emergency Response Plan was needed to prepare for and respond to emergencies that NOAA might face. Staff from each Line Office, including Pacific Island Regional Collaboration Team members, formed a working group that wrote the region's first Guide to Integrated NOAA Response and Communication Protocols for Human-Caused and Natural Disasters in the Pacific.

NOAA in the Pacific Islands has been working on an emergency response plan to help pool resources in times of need.

While the majority of NOAA's 600 plus workforce in the region is concentrated in Hawaii at the Inouye Regional Center in Honolulu, field office staff and other seasonal field activities are located throughout the region. This Guide is designed to enhance coordination of NOAA's diverse expertise, services, and resources when responding to a Pacific Islands natural or anthropogenic emergency that involves a threat or damage to human health or life, to property, or to the environment.

It is estimated that the total value of illegally harvested or transshipped tuna in the (Pacific) region is about $616.11 million a year.

About 93% of American Samoa's exports are canned tuna, and 100% of the exports go to the United States.



Hawaii is the most isolated population center on the face of the earth. This isolation is one of the reasons Hawaii's coral reef ecosystem, has more than 1,250 unique species of marine life.

SOUTHEAST & CARIBBEAN

Preparing for Severe Weather Impacts in the Southeast and Caribbean

The past three years have demonstrated the vulnerability of the Southeast and Caribbean Region to wind, surge and inland flooding from tropical systems. To improve dissemination of information and coordination of planning for and in response to extreme weather, the Southeast and Caribbean Regional Collaboration Team (SECART) targeted multiple audiences.

Within NOAA, SECART organized an "Emergency Response Posture workshop" where NOAA field staff, Federal agencies, and NOAA partners learned about the responsibilities and capabilities of NOAA offices in the region for disaster preparedness, response and recovery. The workshop included training, a hurricane simulation exercise, and discussion of opportunities for improved collaboration. Participants gained a greater understanding of communication tools and roles and responsibilities of NOAA related to disaster planning, forecasting, response and recovery. Participants were eager to continue the discussion in FY18.

GOES satellite visible image of Hurricane Irma as it moves past Cuba and approaches Florida.

SECART also reached state and local risk management practitioners through the Southeast and Caribbean Climate Community of Practice Workshop, focused on "Preparing for Extremes". This workshop brought together eighty state and local level professionals to explore how we make our communities more resilient to climate change and extreme events.

"The CCOP meeting provided a regional overview that helps me recommit to my sector of the region. I returned to work with a renewed sense of purpose."

-Climate Community of Practice Workshop participant

Finally, SECART hosted a five-part webinar series (one in Spanish) to inform emergency management and meteorological professionals of the latest in tropical storm research, forecasting and warnings. The webinars had over 800 registrants and reached participants in the North Atlantic, Gulf of Mexico, and Southeast and Caribbean regions.

At the inter-agency level, SECART hosted a day-long meeting with Federal partners in Atlanta, Georgia to discuss responsibilities related to hurricanes and water resources. With Hurricane Matthew fresh in everyone's minds, participants used real experiences from that storm to examine how agencies worked well together and where there is room for improvement. Participants included the U.S. Environmental Protection Agency, U.S. Geological Survey, U.S. Army Corps of Engineers, U.S. Fish and Wildlife Service, Bureau of Ocean Energy Management, U.S. Navy, and academic partners.

Improving Habitat Mapping and Management

NOAA programs conduct seafloor mapping to support safe navigation, ocean planning and resource assessments. Other Federal agencies and universities also conduct mapping activities in the region to support energy production, sand resource management, dredging, ecosystem mapping, and ecosystem research. There is a high risk of duplicative effort and inefficiency without effective on-going communication and coordination**.** SECART is fostering better coordination by assembling ocean floor mapping experts to coordinate data acquisition and avail-

ability. SECART also led the development of a tool for NOAA, state and federal partner use in prioritizing mapping targets, and hosted an interagency meeting (see participants in previous story) to share experiences and opportunities related to sand resources mapping and management.

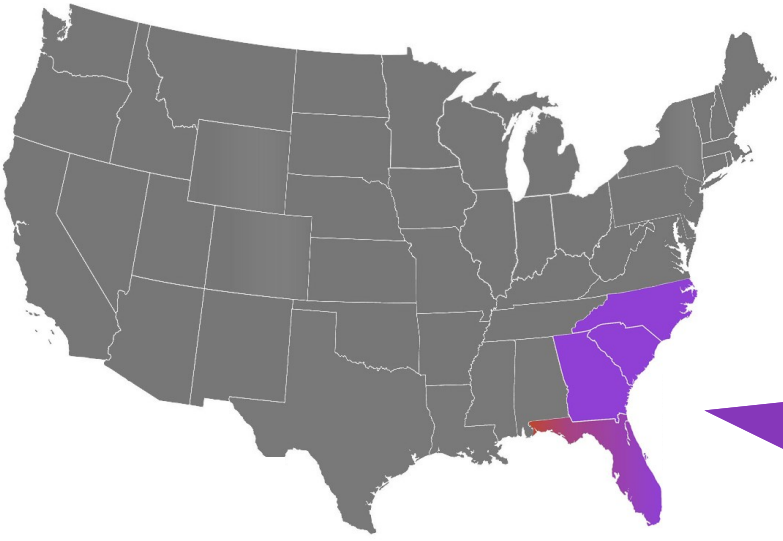
SECART organized two habitat webinars in FY 17 focusing on multiple uses of mapping data and classification standards for bottom mapping data. Also during this year, SECART continued development of a mapping prioritization tool for the Southeast Region, which includes regulatory and management boundaries and an inventory of existing seafloor mapping data from Cape Hatteras to South Florida.

SECART had planned a workshop for September 2017 focused on development of best practices and requirements for seafloor habitat mapping information by agencies and industry. The workshop was postponed to January 2018 because of Hurricane Irma. A similar workshop in 2016 facilitated discovery of unclassified data collected by the Department of Defense in addition to other NOAA mapping data available for updating nautical charts and navigational safety equivalent to 70 days at sea on NOAA survey vessels - or over $1 million is savings to NOAA fleet resources.

Supporting Eastern North Carolina's Ocean Economy

SECART, with support from across the Line Offices, hosted a congressional outreach event on October 6th 2017. Guests included staff form the Office of Governor Cooper and three congressional district directors from the offices of Representative Jones, (R-NC-3), Representative Rouzer, (R-NC-7), and Senator Burr (R-NC). Through presentations by NOAA leads and coastal partners, the team focused on science and services that support eastern North Carolina economies and resource management. This included: 1) transitioning science to manage risks to coastal shorelines, 2) supporting sustainable fisheries through fishery-independent surveys, and 3) growing coastal aquaculture. The guests actively engaged in questions and discussion and suggested NOAA provide more updates on emerging science and host similar Congressional events annually.

NOAA scientist Carolyn Currin explains nature-based solutions for protecting shorelines to congressional and state staff.



The region has over 35 ports and terminals that service cargo and passenger ships, including seven of the top twenty cargo ports in the nation.

According to the 2016 Census estimate, 34 of the 100 fastest growing metro areas (by percentage) in the nation were located in in the southeast states of North Carolina, South Carolina, Georgia, and Florida. However, U.S. Virgin Islands has seen little increase and Puerto Rico has seen a decline.

Over the past three years, the Southeast and Caribbean Region has suffered through nine billion - dollar disasters

NOAA WEST

Connecting Climate Services and Users in the West

The Western region's infrastructure, industry, and unique cultural character is vulnerable to variations in climate like those seen in recent years with El Niño, marine heatwaves, and extreme precipitation. To develop a database of public sector and nonprofit organizations offering climate services, the NOAA West team worked with two Regional Integrated Science Assessment Programs - the Western Water Assessment and the Climate Assessment for the Southwest. The team collected information about the sector and stakeholder groups served by each organization, the types of services provided, and the geographic area and scales covered.

Much of the Western Region faces the challenge of too little or too much water. Drought conditions affect multiple economic sectors including agriculture, fisheries, transportation, and tourism.

Using this information, the team published a preliminary analysis highlighting preliminary observations. For example, the states of New Mexico and Utah have the least coverage by providers. Relatively few providers are focused on human health, transportation, or economics. And tribes are a significantly underserved stakeholder in the region with only 27% of providers serving this group.

Recognizing this information would be useful for end users seeking climate services, the team worked with the Western Region Climate Center to make a publicly available version of the database. The website was released in May 2017 and includes a dynamic and powerful search function and clickable map interface. In the first two months the site averaged over 700 views each month and then over 250 views every month thereafter.

Future phases of this project are underway to survey providers and end users directly to gauge if providers are meeting the demand for climate services in the West.

State Congressional Roundtables Spark Relationships and Stimulate Dialogue

Seeing a prime opportunity to close the gap between district staff and NOAA, NOAA West selected two states to host congressional roundtables in FY 2017, focusing on staff whose members sit on NOAA-relevant committees, have substantial NOAA or NOAA partner presence in their district, and those with new members.

In May, NOAA West hosted a congressional roundtable in Boulder, Colorado. Boulder is home to the third largest

Flooding events threaten lives, property and infrastructure. The Oroville Dam where the main spillway eroded after the reservoir rose 50 feet in a few days, is an example of the effects.

population of NOAA employees and the Colorado delegation sit on several committees overseeing NOAA's work.

"Thank you for hosting [the OR Congressional Roundtable], and for sharing some of the incredible work which is being accomplished by you and your team at NOAA."

-Ryan Hanson, Office of Senator Gardner

The roundtable focused on NOAA and partners' science, service, and stewardship activities in the areas of water management, fire and fire weather, and air quality. The three themes showcased the depth of NOAA's scientific capabilities and how our science and forecasts are being used to directly improve the safety and well-being of communities in Colorado. For example, in 2016 there were over 1,100 wildfires in Colorado that burned approximately 130,00 acres of land. Staff from the Offices of Representatives Coffman (R-CO-6), Polis (D-CO-2), and Senators Gardner (R-CO) and Bennett (D-CO), and the Governor were grateful for the opportunity to learn about NOAA and our work, and to meet and hear from senior leadership.

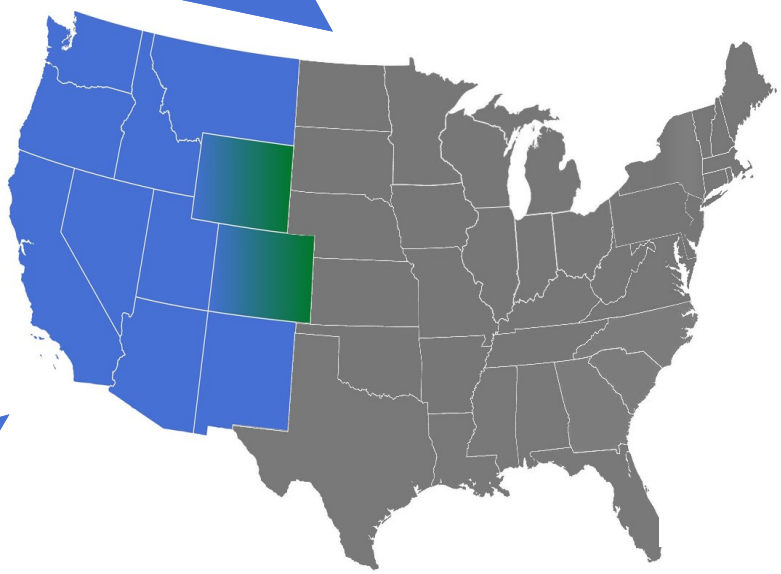
The second NOAA West roundtable was held in Newport, Oregon in early September. This roundtable focused on the scientific infrastructure supporting NOAA's mission, NOAA's science supporting Oregon's working coasts, tools and models to better understand and predict ocean conditions, and safety and preparedness. A NOAA assessment completed in 2014 showed that recreational tourism and marine transportation provided approximately 29,000 jobs and contributed over $2 billion in GDP. The roundtable conveyed specific ways in which NOAA is helping to facilitate and grow Oregon's blue economy. Some examples included efforts to support diverse and robust fisheries, charting and navigation work to ensure safe and efficient transportation and commerce, and research to evaluate the acoustic impact from ocean energy installations. Staff from the Offices of Representatives Bonamici (D-OR-1), Schrader (D-OR-5), Defazio (D-OR-4) and Senators Merkley (D-OR) and Wyden (D-OR), and the Governor were grateful for the opportunity to learn about NOAA and our work, and to meet and hear from senior leadership.

Leveraging the Success of NOAA West Watch

To help provide NOAA experts and key partners up-to-date information on climate and ocean phenomena, such as El Niño/Southern Oscillation and "the Blob", NOAA West started the NOAA West Watch webinar series in 2015. Every month NOAA West Watch attracts over 35 participants including experts from each line office as well as external partners from universities and state and local governments. This year, NOAA West and Sea Grant kicked off a joint project to evaluate if the impact of NOAA West Watch can be expanded by inviting key community-based experts to attend the series. The community based experts will share what they learn with others as well as provide NOAA expert observations about these events, creating a two-way communication mechanism. This project is expected to be completed in 2018.

In 2016, the 11 states within NOAA West had 19,496 fires burning over 2.7 million acres of land. In 2017, California experienced one of its largest fires (Thomas Fire) and one of its deadliest and costliest fires (Tubbs Fire) on record.

The region contains 28 populations of Pacific Salmon and Steelhead listed under the Endangered Species Act.



The Colorado River Basin serves two nations and over 30 million people directly. Water from the Colorado River Basin generates approximately 4,200 megawatts of power annually and irrigates approximately 4 million acres of land.

SUPPORTING OneNOAA

OneNOAA Introductory Video

Over the past few months, Regional Collaboration teamed up with NOAA Fisheries to refresh a OneNOAA video. It gives a brief overview of NOAA's mission and the work to support that mission. This video primarily serves as a tool for onboarding new NOAA employees with the goal of introducing employees to work outside their Line Office.

With the last video created in 2009, Fisheries and the Network aimed to update technology, show NOAA's growing diversity, and talk about the mission in a way that is focused on NOAA employees.

To view this video, please visit our website at www.regions.noaa.gov

NOAA Fisheries and Regional Collaboration worked together to create a OneNOAA video to help onboard NOAA employees.

During the 2017 National Workshop at the NOAA Southwest Fisheries Science Center, Regional Collaboration created the action to complete a strategic communications plan.

The plan will be completed in March 2018.

Network Communications Strategy Plan

On the heels of a successful 2017 Annual Network Workshop, Regional Collaboration Network started work on a national communications strategy plan. This strategy will help NOAA and the Network to understand how we can talk about our work in a way that reaches and resonates with our audience.

The Network hired a professional communications firm to help us create this strategy. Currently the team is working on interviews at every level of NOAA and the Network to gain insight and understanding that will inform our strategy. The plan is on track to be completed by March 2018, in time for our 2018 Annual Workshop.

In March, the Network will work on implementation of the strategy as well as the creation of network wide communications products.

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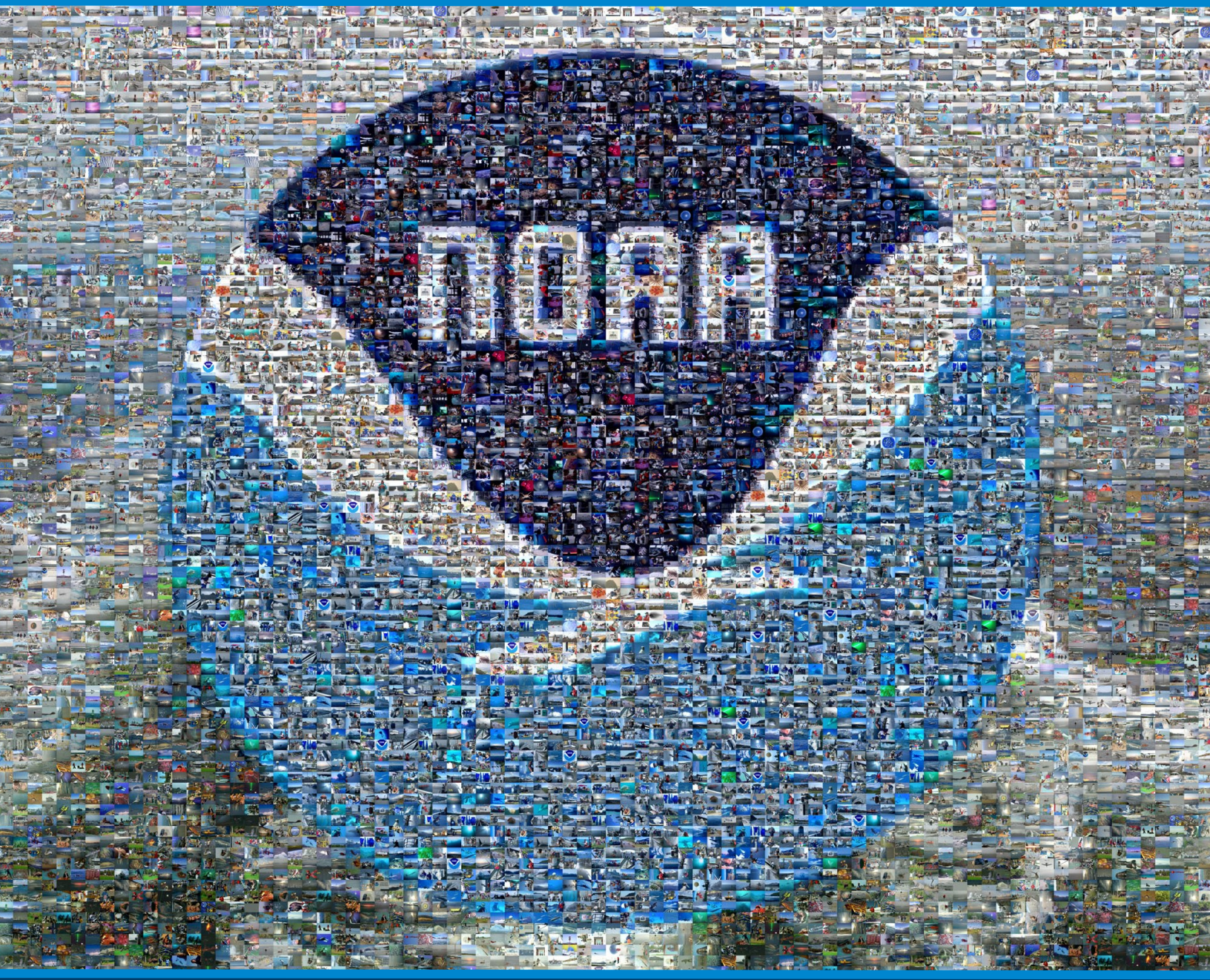
Thank you to our Network and partners who made this report possible.

Regional Collaboration

www.regions.noaa.gov

Alaska, Central, Great Lakes, Gulf of Mexico, North Atlantic, Southeast and Caribbean, Pacific Islands, West



A Unified and Regionally Integrated NOAA

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