NOAA NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
UNITED STATES DEPARTMENT OF COMMERCE

NOAA In Your Territory

Puerto Rico

***NOAA** is an agency that enriches life through science. Our reach goes from the surface of the sun to the depths of the ocean floor as we work to keep citizens informed of the changing environment around them. From daily weather forecasts, severe storm warnings, and climate monitoring to fisheries management, coastal restoration and supporting marine commerce, NOAA's products and services support economic vitality and affect more than one-third of America's gross domestic product. NOAA's dedicated scientists use cutting-edge research and high-tech instrumentation to provide citizens, planners, emergency managers and other decision makers with reliable information they need when they need it.*

The following is a summary of NOAA programs based in, and focused on, your state or territory. The entries are listed by statewide, region, and then by congressional districts and cities or towns.

PR

Entire Territory

National Marine Fisheries Service (NMFS) - Southeast Regional Office and Southeast Fisheries Science Center
NMFS studies, protects and conserves living marine resources to promote healthy, functioning marine ecosystems, afford economic opportunities and enhance the quality of life for the American public. NMFS' Southeast Regional Office (headquartered in Saint Petersburg, FL) and Southeast Fisheries Science Center (headquartered in Miami, FL) are responsible for living marine resources in federal waters of the Gulf of Mexico, South Atlantic and U.S. Caribbean. Using the authorities provided by the *Magnuson-Stevens Fishery Conservation and Management Act*, *Endangered Species Act*, *Marine Mammal Protection Act* and other federal statutes, the Southeast Regional Office and Southeast Fisheries Science Center partner to assess and predict the status of fish stocks, marine mammals and other protected resources, develop and ensure compliance with fishery regulations, restore and protect habitat, and recover threatened and endangered species in waters off Puerto Rico and throughout the Southeast Region.

The Southeast Regional Office conducts mandated essential fish habitat consultations associated with extensive energy and coastal development activities, participates in state and regional habitat planning and restoration efforts, provides assistance during hazardous material incidents and hurricane events, and participates in the planning processes for major federal water development projects. The Southeast Fisheries Science Center implements a multi-disciplinary science and

research program in support of living marine resource management. The Science Center develops the scientific information required for fishery resource conservation; fishery development and utilization; habitat conservation; the protection of marine mammals, sea turtles and other protected species; impact analyses and environmental assessments for management plans and/or international negotiations; and pursues research to answer specific needs in areas of population dynamics, fishery economics, fishery engineering, food science, and fishery biology.

National Ocean Service (NOS) - Caribbean Environmental Response Management Application
Assessing important spatial information and designing successful restoration projects rely upon interpreting and mapping geographic information, including the location, duration, and impacts from oil spills, other hazardous materials, or debris released into the environment. Caribbean ERMA® is an online mapping tool that integrates both static and real-time data, such as Environmental Sensitivity Index (ESI) maps, ship locations, weather, and ocean currents, in a centralized, easy-to-use format for environmental responders and decision makers. Caribbean ERMA has been used to visualize environmental response data during a regional oil spill drill, to map small vessel groundings near coral reefs, and to assist in identifying resources affected by the 2009 fire at an oil storage facility in Puerto Rico.

National Weather Service (NWS) - Automated Surface Observing Systems Stations
The Automated Surface Observing Systems (ASOS) program is a joint effort of the National Weather Service (NWS), the Federal Aviation Administration (FAA), and the Department of Defense (DOD). ASOS serves as the Nation's primary surface weather observing network. ASOS is designed to support weather forecast activities and aviation operations and, at the same time, support the needs of the meteorological, hydrological, and climatological research communities. ASOS works non-stop, updating observations every minute, 24 hours a day, every day of the year observing basic weather elements, such as cloud cover, precipitation, wind, sea level pressure, and conditions, such as rain, snow, freezing rain, thunderstorms, and fog. There are two ASOS stations in Puerto Rico.

National Weather Service (NWS) - Cooperative Observer Program Sites
The National Weather Service (NWS) Cooperative Observer Program (COOP) is truly the Nation's weather and climate observing network of, by and for the people. More than 10,000 volunteers take observations on farms, in urban and suburban areas, National Parks, seashores, and mountaintops. The data are representative of where people live, work and play. The COOP was formally created in 1890 under the NWS Organic Act to provide observational meteorological data, usually consisting of daily maximum and minimum temperatures, snowfall, and 24-hour precipitation totals, required to define the climate of the United States and to help measure long-term climate changes, and to provide observational meteorological data in near real-time to support forecast, warning and other public service programs of the NWS.

The data are also used by other federal (including the Department of Homeland Security), state and local entities, as well as private companies (such as the energy and insurance industries). In some cases, the data are used to make billions of dollars' worth of decisions. For example, the energy sector uses COOP data to calculate the Heating and Cooling Degree Days which are used to determine individuals' energy bills monthly. There are 61 COOP sites in Puerto Rico.

National Weather Service (NWS) - NOAA Weather Radio All Hazards Transmitters
NOAA Weather Radio All Hazards (NWR) is a nationwide network of radio stations broadcasting continuous weather information directly from the nearest National Weather Service (NWS) forecast office. NWR broadcasts official NWS warnings, watches, forecasts and other hazard information 24 hours a day, 7 days a week. Working with the Federal Communication Commission's (FCC) Emergency Alert System, NWR is an "All Hazards" radio network, making it the single source for comprehensive weather and emergency information. In conjunction with federal, state, and local emergency managers and other public officials, NWR also broadcasts warning and post-event information for all types of

hazards – including natural (such as earthquakes or avalanches), environmental (such as chemical releases or oil spills), and public safety (such as AMBER alerts or 911 Telephone outages). Known as the "Voice of NOAA's National Weather Service," NWR is provided as a public service by the NWS. NWR includes 1,100 transmitters covering all 50 states, adjacent coastal waters, Puerto Rico, the U.S. Virgin Islands, and the U.S. Pacific Territories. There are three NWR transmitters in Puerto Rico.

Office of Oceanic and Atmospheric Research (OAR) – Puerto Rico Sea Grant College Program
NOAA's National Sea Grant College Program is a federal-university partnership that integrates research, education and outreach. Sea Grant forms a network of 33 programs in all U.S. coastal and Great Lakes states, Puerto Rico, Lake Champlain, and Guam. Puerto Rico Sea Grant is located at the University of Puerto Rico and is devoted to the conservation and sustainable use of coastal and marine resources in Puerto Rico, the U.S. Virgin Islands and the Caribbean region. The program's mission is two-fold: to conduct excellent scientific research in the areas of water quality, fisheries and mariculture, seafood safety, marine recreation and coastal tourism, coastal hazards and coastal communities economic development; and to apply scientific knowledge to solve a variety of problems their communities of users face every day. Puerto Rico Sea Grant disseminates research findings through a variety of dissemination activities (conferences, workshops and talks), educational products, publications, magazines, Internet and social media platforms.

Coastal

National Marine Fisheries Service (NMFS) - Restoration Center
The NOAA Restoration Center along with NOAA's Coral Reef Conservation Program, NESDIS Coral Reef Watch, NOS Office of Coastal Management, NMFS Southeast Fisheries Science Center and others, are developing an Implementation Plan and associated Action Plans for the Caribbean's Habitat Blueprint Focus Area -- The Northeast Marine Corridor and Culebra Island in Puerto Rico. Our primary activities will be to restore threatened corals, implement watershed restoration projects, research fishery and recreational impacts to fragile marine ecosystems, and improve the predictions of real-time storm surge, to conserve this area's coral reefs, seagrass beds, mangroves, and the people and animals that depend on them.

National Marine Fisheries Service (NMFS) - Species Recovery Program
Under the authority of section 6 of the Endangered Species Act, the Cooperation with States Program brings states, NMFS, and other partners together to recover threatened and endangered species. Competitive grants are awarded to states through the Species Recovery Grant Program to support management, monitoring, research and outreach efforts for species that spend all or a portion of their life cycle in state waters. The funded work is designed to prevent extinctions or reverse the decline of species, and restore ecosystems and their related socioeconomic benefits. Twenty-five coastal states and U.S. territories, including Puerto Rico, currently participate in this program.

The Puerto Rico Department of Natural and Environmental Resources is in the final year of a 3-year $187,000 grant to assess marine turtle aggregations and foraging habitats in coastal waters.

National Marine Fisheries Service (NMFS) - National Marine Mammal Stranding Network and John H. Prescott Marine Mammal Rescue Assistance Grant Program

The National Marine Mammal Stranding Network and its trained professionals respond to dead or live marine mammals in distress that are stranded, entangled, out of habitat or otherwise in peril. Our long-standing partnership with the Network provides valuable environmental intelligence, helping NOAA establish links among the health of marine mammals, coastal ecosystems, and coastal communities as well as develop effective conservation programs for marine mammal populations in the wild. There are two stranding network members in the territory.

NOAA Fisheries funds eligible members of the Stranding Network through the competitive John H. Prescott Marine Mammal Rescue Assistance Grant Program. Since 2001, $48.2 million has been awarded to 552 grantees who raised over $15.9million in matching funds. In FY15, 34 grantees received $2.7million.

National Ocean Service (NOS) - Navigation Manager

NOAA's navigation managers work directly with pilots, port authorities, and recreational boating organizations in Puerto Rico. They help identify the navigational challenges facing marine transportation in Puerto Rico and provide NOAA's resources and services that promote safe and efficient navigation. Navigation managers are on call to provide expertise and NOAA navigation response coordination in case of severe coastal weather events or other marine emergencies. The Office of Coast Survey has a navigation manager in St. Petersburg, Florida to support mariners and stakeholders in South Florida, Puerto Rico, and the U.S. Virgin Islands.

National Ocean Service (NOS) - Coastal and Estuarine Land Conservation Program

The Coastal and Estuarine Land Conservation Program brings conservation partners together to protect coastal and estuarine lands considered important for their ecological, conservation, recreational, historical, or aesthetic values. To date the program has protected more than 100,000 acres of land with program funds and over 16,000 acres with an in-kind match. The program provides state and local governments with matching funds to purchase coastal and estuarine lands or obtain conservation easements for important lands threatened by development. NOAA awarded two grants in Puerto Rico, and these lands are protected in perpetuity.

National Ocean Service (NOS) - Coral Reef Conservation Program

NOAA's Coral Reef Conservation Program brings together multidisciplinary expertise from over 30 NOAA offices and partners. The goal is to protect, conserve and restore coral reef resources. In response to identified threats and management priorities developed by coral reef managers in Puerto Rico, NOAA invests in initiatives to protect commercial, recreational and artisanal coral reef fisheries, manage uses of marine and coastal areas to reduce impacts to coral reef habitats, and implement land-use planning to improve water quality by reducing sediment loads. Ongoing work supports efforts to study and conserve habitats in the Northeast Marine Corridor and Culebra Island, areas recently designated as a habitat focus area as part of the NOAA Habitat Blueprint initiative. Examples include: coral restoration efforts, mapping fish habitat use and reef fish spawning aggregation sites, engaging stakeholders to implement best management practices to reduce sources of land-based pollution, and changing user behaviors to reduce impacts on coral reef habitats. In addition, the program continues to work with partners and engage stakeholders in the Guanica watershed, a U.S. Coral Reef Task Force priority watershed, as well as the Cabo Rojo watershed.

National Ocean Service (NOS) – National Coastal Zone Management Program
Through a unique federal-state partnership, NOAA's Office for Coastal Management works with the Puerto Rico Department of Natural and Environmental Resources to implement the National Coastal Zone Management Program in Puerto Rico. NOAA provides the state coastal management program with financial and technical assistance to further the goals of the Coastal Zone Management Act and ensure coastal waters and lands are used in a balanced way to support jobs, reduce use conflicts, and sustain natural resources. In Puerto Rico, the coastal management program also provides support to municipalities when developing community based adaptation plans focused on sea level rise and coastal erosion.

National Ocean Service (NOS) - Coastal Management Fellowship
This program matches postgraduate students with state and territory coastal zone programs to work on two-year projects proposed by the state or territory. The Puerto Rico Coastal Zone Management Program is hosting a fellow who will design and create an online self-assessment and solutions tool to help coastal communities better understand the risk and impacts associated with coastal hazards and climate change.

National Ocean Service (NOS) – Office for Coastal Management
The NOAA Office for Coastal Management practices a partner-based, boots on the ground approach to coastal management. The organization currently has staff in the eight regions to provide assistance to local, state, and regional coastal resource management efforts and facilitate customer feedback and assessments. The office provides one regionally focused staff member in both San Juan Puerto Rico and St. Croix, US Virgin Islands. Both work within their jurisdictions to improve the management of coastal resources, including corals.

National Ocean Service (NOS) - Scientific Support Coordinator and Regional Resource Coordinator
NOAA's Office of Response and Restoration (OR&R) brings decades of experience, technical expertise and scientific analysis in response to oil and hazardous chemical spills. In addition to events that draw the national eye, OR&R also supports response to local emergencies. Nine regionally based Scientific Support Coordinators (SSCs) harness the input of a multi-disciplinary team to address issues such as oil slick trajectory forecasting, environmental tradeoffs, best practices, resources at risk, oil science and properties, and chemical hazard assessment to reduce risks to coastal habitats and resources. The SSC works directly with U.S. Coast Guard and the U.S. Environmental Protection Agency to provide critical scientific support to the Federal On-Scene Coordinator. OR&R also helps develop preparedness plans that identify spill response actions with the greatest environmental benefit and trains hundreds of members of the response community each year on the scientific and technical aspects of spills.

OR&R's Regional Resource Coordinators (RRCs) provide scientific and technical expertise and timely response to oil spills or hazardous materials releases to collect information, samples, and evidence that are time dependent and critical to support natural resource damage assessments throughout the coastal US. RRCs work on multi-disciplinary scientific, economic, and legal teams and are responsible for determining and quantifying injuries to NOAA trust natural resources through determination of injuries and pathway, and demonstration of causal mechanisms. The goal of the RRCs efforts is to determine, often through the Damage Assessment, Remediation, and Restoration Program, the appropriate amount and type of restoration required to restore injured NOAA trust resources and compensate the public for their lost use.

National Ocean Service (NOS) – Caribbean Environmental Response Management Application
Assessing important spatial information and designing successful restoration projects rely upon interpreting and mapping geographic information, including the location, duration, and impacts from oil spills, other hazardous materials, or debris released into the environment. Caribbean Environmental Response Management Application (ERMA®) is an online mapping tool that integrates both static and real-time data, such as Environmental Sensitivity Index maps, ship locations, weather, and ocean currents in a centralized, easy-to-use format for environmental responders and decision makers.

National Ocean Service (NOS) - Marine Debris Projects and Partnerships
The NOAA Marine Debris Program (MDP) leads national and international efforts to research, prevent, and reduce the impacts of marine debris. The program supports marine debris removal, education and outreach, and research projects in partnership with state and local agencies, tribes, non-governmental organizations, academia, and industry. In Puerto Rico, a project to remove marine debris from the community of Loiza and the Pinones State Forest National Preserve has been funded in FY15 and is expected to work with over 600 volunteers to remove 10 metric tons of debris from 500 acres of shoreline. The results of this work will be converted to educational materials for local schools and the community. A second project in Guanica, Puerto Rico is using community based social marketing, cleanup events, and youth photography exhibits to develop a multifaceted litter reduction campaign for nine beaches in the region. A third project is removing five abandoned and derelict vessels from Fajardo Bay.

National Ocean Service (NOS) - National Water Level Observation Network
The National Ocean Service (NOS) operates six long-term, continuously operating tide stations in Puerto Rico, which provide data and information on tidal datum and relative mean sea level trends, and are capable of producing real-time data for storm surge warning. These stations are located at Aguadilla Pier, Culebra, Magueyes Island. Mona Island, San Juan, and Vieques Island. Each station is associated with a set of tidal benchmarks installed in the ground that is used to reference the height of the water levels and helps connect the water level to land.

National Ocean Service (NOS) - Caribbean Coastal Ocean Observing System
The U.S. Integrated Ocean Observing System (IOOS®) is an operational system and a network of regional partners responsible for regional observations, data management, modeling and analysis, education and outreach, and research and development. The overarching purpose of U.S. IOOS is to address regional and national needs for ocean, coast, and Great Lakes data and information. The Caribbean Coastal Ocean Observing System (CARICOOS), is one of 11 IOOS regional coastal ocean observing systems, is driving implementation of IOOS for Puerto Rico and the U.S. Virgin Islands, focused on meeting identified stakeholder needs for improved real time data products and forecasts of coastal weather (winds, waves and currents), water quality and hurricane-driven inundation for the U.S. Caribbean Exclusive Economic Zone (EEZ).

Aguadilla

National Marine Fisheries Service (NMFS) - Office of Law Enforcement

NOAA's Office of Law Enforcement is the only conservation enforcement program (Federal or State) that is exclusively dedicated to Federal fisheries and marine resource enforcement. Its mission is to protect global marine resources by enforcing domestic laws and international treaties and obligations dedicated to protecting wildlife and their natural habitat. Our special agents and enforcement officers ensure compliance with these laws and take enforcement action if there are violations. Additionally, the Cooperative Enforcement Program allows NOAA the ability to leverage the resources and assistance of 27 coast states and U.S. territorial marine conservation law enforcement agencies in direct support of the Federal enforcement mission. Effective fisheries law enforcement is critical to creating a level playing field for U.S. fishermen and enabling sustainable fisheries to support vibrant coastal communities. The Aguadilla field office is part of the Office of Law Enforcement's Southeast Division.

Aguirre

National Ocean Service (NOS) - Jobos Bay National Estuarine Research Reserve

The 2,883 acre Jobos Bay Research Reserve, designated in 1981 and managed by the Puerto Rico Department of Natural and Environmental Resources, includes fifteen tear-shape islets known as Cayos Caribe, and the Mar Negro area, which consists of a mangrove forest and a complex system of lagoons and channels interspersed with salt and mud flats. The program's research priorities include defining the physical, chemical, and biological aspects of estuarine and coral reef processes, climate-related trends, and examining land-based sources of marine pollution. The reserve has implemented a monitoring strategy to examine the impacts of sea level rise on mangrove habitat. Education programs include field-based activities, summer camps, and teacher training workshops. Training programs for coastal decision makers help them develop and implement municipal non-point source pollution plans.

Boqueron

National Marine Fisheries Service (NMFS) - Caribbean Field Office

The Caribbean Field Office is located on the U.S. Fish and Wildlife Refuge. This office analyzes the impacts of projects throughout Puerto Rico and the USVI on species and habitat protected by the *Endangered Species Act*. These analyses ensure important projects can be completed without jeopardizing the sustainability of threatened and endangered species or the habitat critical to their recovery. This office also implements management and education programs for the Coral Reef Conservation Program.

Fajardo

National Marine Fisheries Service (NMFS), National Ocean Service (NOS), National Environmental Satellite, Data, and Information Service (NESDIS) - Northeast Marine Corridor and Culebra Island Habitat Focus Area

The NOAA Restoration Center, NOAA's Coral Reef Conservation Program, NESDIS Coral Reef Watch, NOS Office of Coastal Management, NMFS Southeast Fisheries Science Center and others are developing an Implementation Plan and associated Action Plans for the Caribbean's Habitat Blueprint Habitat Focus Area -- The Northeast Marine Corridor and Culebra Island in Puerto Rico. Habitat Focus Areas are a non-regulatory, collaborative approach to habitat conservation that NOAA launched in 2013 to increase the effectiveness of NOAA's habitat conservation science and management efforts. Habitat Focus Areas are places where NOAA offices, working together with public and private sector partners, can achieve measurable habitat conservation results in three to five years. Primary objectives are to restore threatened corals, implement watershed restoration projects, and research fishery and recreational impacts.

Isabella, San Juan WAAS

Office of Oceanic and Atmospheric Research (OAR) - Ground- Based GPS Meteorology

The Earth System Research Laboratory maintains the Ground-Based GPS Meteorology project, currently consisting of 400 GPS water vapor observing systems that provide near real-time integrated precipitable water vapor (IPW) measurements for weather forecasting, climate modeling, calibration and validation of satellite and radiosonde water vapor measurements, and research. This project provides water vapor data available to all users.

La Parguera

Office of Oceanic and Atmospheric Research (OAR) - National Coral Reef Monitoring Program

This site is part of the National Coral Reef Monitoring Program's (NCRMP) network of sentinel climate and ocean acidification monitoring sites. Sentinel sites in the Atlantic are established in La Parguera, Puerto Rico, at Cheeca Rocks in the Florida Keys National Marine Sanctuary, Flower Garden Banks National Marine Sanctuary, and the Dry Tortugas in the Florida Keys. These sites provide coral scientists with additional datasets and insight on changing ocean chemistry and the progression of ocean acidification, as well as the ecological impacts of these variables, across the Caribbean basin and the Gulf of Mexico. The NCRMP, co-funded by NOAA's Coral Reef Conservation Program and Ocean Acidification Program, seeks to provide sustained and long-term measurement of key variables to gauge the status and trends of coral reef health.

San Juan

National Marine Fisheries Service (NMFS) - Field Office

The San Juan Field Office is co-located with the U.S. Army Corps of Engineers, Antilles office. This Office is responsible for implementing NMFS's habitat conservation efforts in Puerto Rico and, in coordination with the St. Croix Field Office, the U.S. Virgin Islands. In addition to conducting mandated essential fish habitat consultations associated with extensive coastal development activities, the Office conducts coral and fish habitat research and participates in the planning processes for major federal water development projects, including those for flood control.

National Weather Service (NWS) - Weather Forecast Office

This NWS Weather Forecast Office (WFO) is staffed around the clock every day, and provides the best possible weather, water, and climate forecasts and warnings to residents of Puerto Rico and the US Virgin Islands. This office also provides marine warnings and forecasts for the waters surrounding Puerto Rico and the U.S. Virgin Islands. Highly trained forecasters issue warnings and forecasts for events, including severe thunderstorms, tornadoes, winter storms, floods, and heat waves. This essential information is provided to the general public, media, emergency management and law enforcement officials, the aviation and marine communities, agricultural interests, businesses, and others. Information is disseminated in many ways, including through dedicated government channels, satellite, the Internet, and NOAA Weather Radio All Hazards.

Forecasters also provide Impact-based Decision-Support Services (IDSS), both remotely and on-site, during critical emergencies, such as wildfires, floods, chemical spills, and for major recovery efforts such as those following the Joplin and Moore tornadoes, Hurricanes Katrina and Sandy, and the Sept. 11, 2001, terrorist attacks in New York City and Washington D.C. The WFO collects and disseminates precipitation, river, and rainfall data, and prepares local climatological data. Each WFO has a Warning Coordination Meteorologist who actively conducts outreach and educational programs, which helps build strong working relationships with local partners in emergency management, government, the media and academic communities. The WFO operates Automated Surface Observing Stations (ASOS), as well as the local Doppler Weather Radar, which provides critical information about current weather conditions. The radar data enables forecasters to issue warnings for tornadoes, severe thunderstorms, and flash floods.

Office of Oceanic and Atmospheric Research (OAR) - Surface Aerosol Monitoring
NOAA's Earth System Research Laboratory Global Monitoring Division (ESRL/GMD) operates surface-based aerosol monitoring sites in seven states and one territory (Puerto Rico). ESRL/GMD's aerosol monitoring capabilities include continental sites in response to the finding that human activities primarily influence aerosols on regional/continental scales rather than on global scales. Aerosols create a significant perturbation of the Earth's radiative balance on regional scales. The measurements made include aerosol optical properties (how the particles absorb and scatter solar radiation), aerosol number concentration and chemical composition of the aerosol particles.

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