NOAA In Your State New Jersey \$

NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

<u>NOAA</u> 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 hightech 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 facilities, staff, programs, or activities based in, or focused on, your state or territory. The entries are listed by statewide, region, and then by congressional districts and cities or towns.

NJ

Statewide

National Marine Fisheries Service (NMFS) - <u>Greater Atlantic Regional Fisheries Office</u> and <u>Northeast Fisheries</u> <u>Science Center</u>

NMFS is responsible for the management, conservation and protection of living marine resources within the United States' Exclusive Economic Zone (water three to 200 mile offshore). Using the tools provided by the *Magnuson-Stevens Act*, NMFS assesses and predicts the status of fish stocks, develops and ensures compliance with fisheries regulations, restores and protects habitat and works to reduce wasteful fishing practices, and promotes sustainable fisheries. Under the *Marine Mammal Protection Act* and the *Endangered Species Act*, NMFS recovers protected marine species (e.g. whales, turtles). The Greater Atlantic Regional Fisheries Office (located in Gloucester, MA) includes divisions that promote sustainable fisheries, habitat conservation, and recovery of protected species, and conducts statistical analysis and programs supporting these divisions. Key fish species managed in the Greater Atlantic Region include the northeast "multispecies complex" (cod, haddock, yellowtail flounder etc.), Atlantic sea scallops, herring, lobster, and summer flounder. Key marine endangered species in this region are northern right whales, Kemp's ridley sea turtles, Atlantic salmon and Atlantic and shortnose sturgeon. NMFS is the lead agency coordinating the Large Whale and Sea Turtle Disentanglement Program activities and the Marine Mammal Health and Stranding Response Program activities.

The Northeast Fisheries Science Center (headquartered in Woods Hole, MA) focuses on collection, analysis, and presentation of scientific information about the Northeast Shelf ecosystem, its condition, and its marine life. In addition to

its five laboratories, including the James J. Howard Lab at Sandy Hook NJ,, the Center uses four research vessels to support its work. They are: the NOAA Ships *Henry B. Bigelow*, and the small research vessels *Gloria Michelle*, *Victor Loosanoff*, and *Nauvoo*. The Greater Atlantic Regional Fisheries Office and the Science Center are responsible for the District of Columbia and the following states: Maine, New Hampshire, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, Pennsylvania, Delaware, Maryland, Virginia, and North Carolina; and the inland states of Vermont, Minnesota, Michigan, Wisconsin, Illinois, Indiana, Ohio, and West Virginia.

National Marine Fisheries Service (NMFS) - Restoration Center

The NOAA Restoration Center, within the Office of Habitat Conservation, works with private and public partners locally and nationwide to increase fisheries productivity by restoring coastal habitat. Projects support sustainable fisheries, help recover threatened and endangered species, and reverse damage from disasters like oil spills, ship groundings, and severe storms. In New Jersey, the Restoration Center works with partners to restore tidal wetlands, construct fish ladders, remove dams, modify culverts to improve tidal flushing in coastal wetlands, remove invasive species and restore native shellfish populations. Over forty-six New Jersey projects have restored 469 acres of habitat and opened up 47 stream miles.

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 Office of Law Enforcement's Northeast Division has field offices in Marmora and Wall, NJ.

National Marine Fisheries Service (NMFS) and National Ocean Service (NOS) - <u>Damage Assessment</u>, <u>Remediation</u>, and <u>Restoration Program</u>

NOAA's Damage Assessment, Remediation, and Restoration Program (DARRP) assesses and restores habitat, fisheries, protected species and recreational uses that have been harmed by oil spills, chemical releases, and ship groundings. Working with federal, state, and tribal entities, and responsible parties, we have recovered \$10.4 billion for restoration of critical habitats, fisheries, protected species and recreational uses nationwide. These projects promote recovery of the ecosystem and provide economic benefits from tourism, recreation, green jobs, coastal resiliency, property values and quality of life. In New Jersey, the Program is currently working to restore natural resources in cases including Berry's Creek, Lower Passaic River/Newark Bay, Piles Creek, Cornell-Dubilier, American Cyanamid, and Raritan Bay Slag hazardous waste sites.

National Ocean Service (NOS) – Regional Geodetic Advisor

The Regional Geodetic Advisor is a National Ocean Service (NOS) employee that resides in a region and serves as a liaison between the National Geodetic Survey (NGS) and its public, academic and private sector constituents within their assigned region. NGS has a Regional Geodetic Advisor stationed in Montpelier, Vermont serving the Northeast region – Vermont, Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, and Rhode Island. The Geodetic Advisor provides training, guidance and assistance to constituents managing geospatial activities that are tied to the National Spatial Reference System (NSRS), the framework and coordinate system for all positioning activities in the Nation. The Geodetic Advisor serves as a subject matter expert in geodesy and regional geodetic issues, collaborating internally across NOS and NOAA to ensure that all regional geospatial activities are properly referenced to the NSRS.

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, thunderstorm, and fog. There are 11 ASOS stations in New Jersey.

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 55 COOP sites in New Jersey.

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). NWR is provided as a public service by the NWS and 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 New Jersey.

Office of Oceanic and Atmospheric Research (OAR) – <u>New Jersey Sea Grant College Program</u>

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, and Guam. The New Jersey Sea Grant Consortium is an affiliation of colleges, universities and other groups dedicated to advancing knowledge and stewardship of New Jersey's marine and coastal environment. It meets its mission through research, education and outreach programs that promote well-informed and responsible use of New Jersey's coastal and marine environment. The New Jersey Sea Grant College Program at the New Jersey Sea Grant Consortium funds competitive university-based research and through its outreach specialists, applies that research to practical purposes. Its education and communications programs encourage marine science literacy and environmental stewardship by offering opportunities for groups and individuals to learn about New Jersey's marine, coastal and estuarine environments.

Coastal

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 Grants to States 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, including New Jersey and U.S. territories, currently participate in this program. New Jersey has received grant funding to support studies of the habitat and distribution of shortnose and Atlantic sturgeon within Delaware Bay.

National Marine Fisheries Service (NMFS) - Sea Turtle Salvage and Stranding Network

The Sea Turtle Stranding and Salvage Network (STSSN) was formally established in 1980 to collect information on and document strandings of marine turtles along the U.S. Gulf of Mexico and Atlantic coasts. The network, which includes federal, state and private partners, encompasses the coastal areas of the eighteen-state region from Maine to Texas, and includes portions of the U.S. Caribbean. Data gathered by the Network helps inform bycatch reduction efforts, track factors affecting turtle health, and provide other information needed for sea turtle management and population recovery.

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

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 is one stranding network member in the state. Since 2001, \$53.8 million has been awarded through 617 grants, and recipients have raised over \$17.76 million in matching funds. In FY17, 33 competitive grants were awarded nationwide for a total of \$2.8 million.

National Ocean Service (NOS) - National Water Level Observation Network

The National Ocean Service operates three long-term continuously operating tide stations in the state of New Jersey, which provide data and information on tidal datum and relative sea level trends, and are capable of producing real-time data for storm surge warning. These stations are located at Sandy Hook, Atlantic City, and Cape May. 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) - Navigation Manager

NOAA's navigation managers work directly with pilots, port authorities, and recreational boating organizations in New Jersey. The Office of Coast Survey has a navigation manager located in Narragansett, R.I., to support mariners and stakeholders in the Northeast. Navigation managers are on call to provide expertise and NOAA navigation response coordination in case of severe coastal weather events or other marine emergencies, as they did in 2012 when Coast Survey deployed an additional experienced navigation manager to assist the Port of New York/New Jersey in the response to Superstorm Sandy. In the day-to-day operations of the maritime transportation system, NOAA's navigation managers help identify the navigational challenges facing marine transportation in New Jersey and provide NOAA's resources and services that promote safe and efficient navigation.

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 inkind 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 eight grants in New Jersey, and these lands are protected in perpetuity.

National Ocean Service (NOS) – National Coastal Zone Management Program

Through a unique federal-state partnership, NOAA's Office for Coastal Management works with the New Jersey Department of Environmental Protection to implement the National Coastal Zone Management Program in New Jersey. 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.

National Ocean Service (NOS) and National Marine Fisheries Service (NMFS) – Coastal Resilience Grant Award

These grants help coastal communities prepare for and recover from extreme weather events, climate hazards, and changing ocean conditions. The focus is on comprehensive regional approaches that use science-based solutions and rely on collaborative partnerships. This approach expands reach and impact, thereby ensuring maximum success. In New Jersey, the NOAA Office for Coastal Management awarded two grants that are ongoing in 2018, including: \$898,656 to the New Jersey Department of Environmental Protection to bring state-of-the-art professional planning practices for coastal hazards and agency and regional coordination to 15 communities, and \$514,507 to the Mid-Atlantic Regional Council on the Ocean (MARCO), to enable partners and coastal and ocean stakeholders from New York to Virginia to implement a holistic approach to enhancing climate and coastal resilience by better understanding how changing ocean conditions impact coastal communities and economies.

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 like Hurricane Sunday, 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. For spills in New Jersey, the SSC based in Sandy Hook 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) - Atlantic 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. Atlantic 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. In 2012, Atlantic ERMA was employed as the Command Operational Picture for the U.S. Coast Guard's pollution response to Tropical Storm Sandy.

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 New Jersey, the MDP is funding Stockton University and the Conserve Wildlife Foundation of NJ for two derelict crab pot removal projects during the fishery off-season, including work in Delaware Bay, Barnegat Bay, and in Atlantic and Cape May Counties. A newly funded removal project with Camden County is removing marine debris, largely in the form of concrete rubble, from the shoreline and submerged in the Delaware River adjacent to the City of Camden, NJ.

National Ocean Service (NOS) - Mid-Atlantic Regional Association Coastal Ocean Observing System

U.S. IOOS® is an operational system comprised of a network of 11 regional partners responsible for regional The U.S. Integrated Ocean Observing System, or IOOS®, is a federally and regionally coordinated observing system with 17 interagency and 11 regional partners. The System addresses regional and national needs for coastal, ocean, and Great Lakes data and information. This includes gathering and disseminating regional observations; data management; modeling and analysis; education and outreach; and research and development. The Mid-Atlantic Regional Association Coastal Ocean Observing System (MARACOOS) is one of the 11 Regional Associations and it extends from Cape Hatteras to Cape Cod including the estuaries and the continental shelf waters. MARACOOS provides the necessary ocean observing, data management, and forecasting capacity to systematically address prioritized regional themes including maritime safety, ecosystem based management, water quality, coastal inundation, and offshore energy development.

National Weather Service (NWS) - Buoys

The National Weather Service (NWS), through its National Data Buoy Center (NDBC), develops, deploys, operates, and maintains the current national data buoy network of moored and drifting weather buoys and land stations that serve all of the Nation's coastal states and territories. Within this network, 110 of the buoys and 51 of the land stations are maintained directly by NDBC. Located at NASA's Stennis Space Center in Mississippi, supports weather and marine warning and forecast services in real time by providing deep ocean and coastal meteorological and oceanographic observations. These data provide valuable information used by NWS supercomputers to produce computer-generated model forecasts of the atmosphere and climate. NDBC manages the Volunteer Observing Ship program to acquire additional meteorological and oceanographic observations supporting NWS mission requirements. NDBC also supports operational and research programs of NOAA and other national and international organizations.

NJ- 1 Camden

NOAA Office of Education - Environmental Literacy Program

NOAA's Environmental Literacy Program (ELP), administered by the Office of Education, provides grants and in-kind support to build the capacity of institutions and networks to advance NOAA's mission through formal (K-12) and informal education at national, regional, and local levels. In New Jersey, ELP supports the Adventure Aquarium & Center for Aquatic Sciences (Camden), a member of the Coastal Ecosystem Learning Center (CELC) Network, a consortium of 25 aquariums and marine science education centers with a reach of over 20 million people. The CELC Network works with NOAA and each member institution to engage the public in protecting coastal and marine ecosystems. ELP supports the Shore Bowl in New Jersey, one of 25 regional competitions of the_National Ocean Sciences Bowl (NOSB). The NOSB is an academic competition that engages high school students in learning about ocean sciences and related STEM careers while helping them become knowledgeable citizens and environmental stewards. ELP also supports the AMS DataStreme courses for K-12 educators through a grant and in-kind support._Local implementation teams in the state offer DataStreme courses that use weather, climate, and the ocean as contexts for teaching science and improving understanding about the Earth system. Additionally, Rutgers University provides support to and receives support from two (2) grant recipients to advance NOAA's mission.

NJ- 2

Northfield

National Marine Fisheries Service (NMFS) - Port Agent Field Office

The Greater Atlantic Region's Port Agent Team works directly with the fishing industries of the region to provide in-person advice and support to fishermen and seafood dealers. Port agents also serve as a conduit for industry to relay information to the Regional Administrator and other NOAA staff about fishing industry concerns, thoughts and activities. Team members assist seafood dealers and vessel operators and owners with data reporting requirements, in navigating the permitting process, and with other Agency regulations and processes. They collect biological samples of seafood landed by commercial fishermen for use in fisheries stock assessments. They also provide the general public with information on fisheries and the marine environment by attending public events and through ad-hoc interactions.

Office of Oceanic and Atmospheric Research (OAR) - Carbon Cycle Gases and Halocarbons

NOAA's Earth System Research Laboratory Global Monitoring Division (ESRL/GMD) operates a small aircraft-based North American network of sampling sites to measure vertical profiles of important greenhouse gas concentrations. Air is sampled above the surface up to approximately 25,000 feet above sea level using a relatively small, light, and economical automated system developed by ESRL researchers. These air samples are delivered to ESRL/GMD in Boulder, Colorado for measurements of CO2, CH4, and other greenhouse gasses. This data will improve understanding and models of the global carbon cycle. Sampling is conducted bi-weekly. Some air samples from the small aircraft program are also analyzed for halocarbon gases that can destroy the stratospheric ozone layer. Halocarbon measurements help determine the effectiveness of efforts to protect and restore the ozone layer so it can protect us from the sun's ultraviolet radiation.

NJ- 3

Mount Holly-Greater Philadelphia Area and Delaware River Valley National Weather Service (NWS) - <u>Weather Forecast Office</u>

Located about 25 miles northeast of Philadelphia just outside Mount Holly, 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 most of New Jersey, eastern Pennsylvania, Maryland's upper eastern shore, and Delaware. This office also provides marine forecasts and warnings for the Atlantic coastal waters from Sandy Hook, New Jersey to Fenwick Island, Delaware, and the entire Delaware Bay. 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. 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.

Toms River

National Marine Fisheries Service (NMFS) - Port Agent Field Office

The Greater Atlantic Region's Port Agent Team works directly with the fishing industries of the region to provide in-person advice and support to fishermen and seafood dealers. Port agents also serve as a conduit for industry to relay information to the Regional Administrator and other NOAA staff about fishing industry concerns, thoughts and activities. Team members assist seafood dealers and vessel operators and owners with data reporting requirements, in navigating the permitting process, and with other Agency regulations and processes. They collect biological samples of seafood landed by commercial fishermen for use in fisheries stock assessments. They also provide the general public with information on fisheries and the marine environment by attending public events and through ad-hoc interactions.

NJ- 6

Highlands

National Marine Fisheries Service (NMFS) - James J. Howard Laboratory

The James J. Howard Marine Sciences Laboratory, located on the New Jersey shore at Sandy Hook, is a state-of-the-art marine research facility. It is a laboratory of the NMFS Northeast Fisheries Science Center, located in the National Park Service Gateway Recreational Area. Scientists study the effects of environmental factors on fishery resources, near-shore ecosystems, offshore fish habitat, habitats in designated Wind Energy Areas in the Northeast, and ocean processes. Emphasis of seawater experimental investigations is on studies of reproductive activity and early life stages of marine animals, since these are generally the most vulnerable to environmental variation caused by pollution, climate change, ocean acidification and other factors. The laboratory also is home to one of the country's premier ocean acidification experimental facilities, which is used to evaluate the effect of ocean acidification on marine organisms. The center's Cooperative Research Branch and Northeast Fishery Observer Program also have staff at the lab. These programs work directly with the fishing industry on research or mutual interest and fishery monitoring.

National Marine Fisheries Service (NMFS) - Habitat Conservation Division

Housed at the James J. Howard Laboratory, this office provides local support for NMFS' habitat conservation efforts. It provides consultative services for federal activities and federally permitted activities that could affect living marine resources or the habitats upon which they depend.

Mullica River-Great Bay

National Ocean Service (NOS) - Jacques Cousteau National Estuarine Research Reserve

The 114,873-acre Jacques Cousteau Research Reserve, designated in 1997 and managed by Rutgers University Institute of Marine and Coastal Sciences, is regarded as one of the least disturbed estuaries in the densely populated urban corridor of the Northeastern United States. The reserve conducts research on the physical, chemical, and biological components of its estuaries and neighboring watersheds, and is established as a sentinel site for monitoring the impacts of changing water levels and inundation on marsh habitats. The education program brings the latest marine science research into classrooms with a focus on enhancing basic scientific skills, problem-solving, and environmental awareness. The training program provides up-to-date scientific information and access to technologies and skill-building opportunities to address climate change adaptation opportunities in communities throughout the New Jersey coastal zon

NJ-11

Morristown

Office of Oceanic and Atmospheric Research (OAR) - Science On a Sphere® at Morristown-Beard School

Science On a Sphere (SOS) is a room-sized global display system that uses computers and video projectors to display planetary data onto a six-foot diameter sphere, analogous to a giant animated globe. Researchers at NOAA developed Science On a Sphere® as an educational tool to help illustrate Earth System science to people of all ages. Animated images of atmospheric storms, climate change, and ocean temperature can be shown on the sphere, which is used to explain what are sometimes complex environmental processes, in a way that is simultaneously intuitive and captivating.

NJ-12

Princeton

Office of Oceanic and Atmospheric Research (OAR) - Cooperative Institute for Climate Science

The Cooperative Institute for Climate Science (CICS) was established at Princeton University in October 2003. CICS brings together the strengths of Princeton University in biogeochemistry, physical oceanography, paleoclimate, hydrology, ecosystem ecology, climate change mitigation technology, economics, and policy; and those of the Geophysical Fluid Dynamics Laboratory (GFDL) in modeling the atmosphere, oceans, weather and climate. CICS is an outgrowth of a highly successful forty-year collaboration between Princeton University scientists and GFDL under Princeton University's Atmospheric and Oceanic Sciences Program that contributed to the development of oceanic and atmospheric models, performed research on climate and biogeochemical cycling, and educated several generations of graduate students. CICS conducts research under four research themes: (1) earth system studies and climate research; (2) biogeochemistry; (3) coastal processes; and (4) paleoclimate.

Office of Oceanic and Atmospheric Research (OAR) - Geophysical Fluid Dynamics Laboratory

The Geophysical Fluid Dynamics Laboratory (GFDL) conducts research directed toward understanding climate on global and regional scales; the earth's atmospheric general circulation; the spatial and temporal dynamics of the oceans; the interactions of the atmosphere and oceans; and the interactions of various trace constituents with the atmosphere and oceans. GFDL develops models of the atmosphere, land, and oceans to study their behavior and properties. The Laboratory pioneered the use of general circulation models of the atmosphere and contributes to the Nation's programs for improved understanding of climate change and improved weather forecasting.

Office of the Chief Information Officer (OCIO) - High Performance Computing and Communications

The Office of the Chief Information Officer manages research and development high performance computing for weather and climate modeling, research, and predictions, supporting improvements in areas such as the prediction of severe weather, seasonal prediction of temperature and precipitation, and forecasting the next Sandy-like storm.

NJ-13

Jersey City

National Ocean Service (NOS) - Port of New York / New Jersey PORTS®

A Physical Oceanographic Real-Time System (PORTS®) is operated cooperatively with the local maritime community in New York Harbor with real-time data quality-controlled and disseminated to local users for safe and efficient navigation. Real-time data are available for water levels from four stations, currents from three stations, meteorological data from four locations, conductivity at two locations and air gap at one location.

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