

<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: Starting with highlights, then by <u>congressional districts and cities or towns</u>, <u>coastal programs</u>, and then <u>statewide programs</u>.

Highlights of NOAA in Maryland

Cooperative Oxford Laboratory	Oxford	MD-1
Choptank River Complex Habitat Focus Area	Talbot, Queen Anne's, Dorchester, and Caroline Counties	MD- 1,3,5
Annapolis Field Office	Annapolis	MD-3
Chesapeake Bay-Maryland National Estuarine Research Reserve	Annapolis	MD-3
Office of Satellite and Product Operations	Suitland	MD-4

The state of Maryland also has one Cooperative Institute, one Regional Office, three Labs and Field Offices, one Cooperative Science Center, five Science on a Sphere® exhibitions, one National Estuarine Research Reserve, and one Habitat Focus Area.

Science On a Sphere®

Baltimore	MD-7
Beltsville	MD-4
Greenbelt	MD-4
Waldorf	MD-5
Silver Spring	MD-8

<u>Science On a Sphere (SOS)</u> 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 in a way that is simultaneously intuitive and captivating what are sometimes complex environmental processes. They are located at the Maryland Science Center in Baltimore, the NOAA Center for Weather and Climate Prediction in College Park, NASA Goddard Space Flight Center in Greenbelt, St. Charles High School in Waldorf, NOAA Headquarters in Silver Spring, and NOAA Gateway in Silver Spring.

MD-1

Oxford

National Ocean Service (NOS) - Cooperative Oxford Laboratory

The Cooperative Oxford Laboratory (COL), part of the National Centers for Coastal Ocean Science, is situated along the Tred Avon river, a tidal estuary of the Chesapeake Bay on Maryland's Eastern Shore. Initially established to prevent the spread of fish and shellfish diseases in the Chesapeake Bay, the mission now includes helping local decision makers understand contemporary pressures on our watershed, including urbanization, climate change, and pollution.

Princess Anne

NOAA Office of Education - Living Marine Resources Cooperative Science Center

The NOAA Living Marine Resources Cooperative Science Center (LMRCSC) is led by The University of Maryland Eastern Shore in collaboration with its partner institutions Delaware State University, Hampton University, Savannah State University, the University of Maryland Center for Environmental Science Institute of Marine and Environmental Technology, Oregon State University, and the University of Miami Rosenstiel School of Marine and Atmospheric Sciences. This Center is supported through a cooperative agreement award from NOAA's Educational Partnership Program with Minority Serving Institutions (EPP/MSI) as a future workforce investment to support NOAA's mission enterprise. The purpose of the award is to expand participation in NOAA mission-aligned education, training, capacity building, and collaborative research focusing on expanding participation of groups traditionally underrepresented and historically excluded in NOAA mission aligned careers. The center focuses on Science Technology Engineering and Math (STEM), natural resources management, risk assessment, social justice and policy disciplines through the use of non-regulatory tools to protect and restore priority habitats supporting long-term sustainability of marine fisheries and protected resources. The EPP/MSI Graduate Fellowship Program (GFP) supports CSC students pursuing graduate degrees in disciplines aligned with NOAA's mission. Since 2021, one LMRCSC Scholar has been awarded a GFP scholarship. LMRCSC, in joint collaboration with the NOAA's Center for Coastal and Marine Ecosystems (CCME), and NOAA subject matter experts, designed, and will implement, a Joint Collaborative Research Project (JCRP) that supports NOAA's strategic goals and missions, while directly aligning with each Center type. LMRCSC conducts research in the marine sciences, with areas of specialization in fisheries science, oceanography, ecology, environmental sciences, and environmental molecular biology/biotechnology. LMRCSC's primary collaborator at NOAA is the National Marine Fisheries Service (NMFS).

Salisbury

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 coastal 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 is headquartered in Gloucester, Massachusetts, with a Maryland field office in Salisbury.

Talbot, Queen Anne's, Dorchester, and Caroline Counties

National Marine Fisheries Service (NMFS), National Ocean Service (NOS) - Choptank Complex Habitat Focus Area The Choptank Complex was selected as a NOAA Habitat Focus Area (HFA). HFAs are targeted places where NOAA addresses high priority habitat issues by collaborating with partners and communities. Over the past several years, NOAA, led by the Office of Habitat Conservation, has selected 11 HFAs across the country which have achieved significant results for ecosystems and communities. While each HFA focuses on individual habitat conservation goals, the overarching goal is to leverage collective expertise and demonstrate results in a short time period. NOAA's Chesapeake Bay Office, Restoration Center, Greater Atlantic Regional Fisheries Office, National Centers for Coastal and Ocean Science, and Office of National Marine Sanctuaries are coordinating NOAA and partner programs within the Choptank River Complex Habitat Focus Area. 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. The Choptank River is home to the largest native oyster restoration effort in the United States and contains among the most important habitat for striped bass populations. As such, the river's health is vital to ensuring sustainable fisheries and coastal economies. NOAA conducts mapping and acoustic surveys in tributaries of the Choptank River and Little Choptank River to support native oyster restoration, funds in-the-water oyster restoration, and supports research to understand ecosystem conditions, evaluate threats, and quantify the ecosystem services provided by the restored oyster reefs.

MD-3 Annapolis National Marine Fisheries Service (NMFS) - Annapolis Field Office

tThe Greater Atlantic Regional Fisheries Office has field offices for the Habitat and Ecosystem Services Division (HESD) and Protected Resources Division co-located with NOAA Chesapeake Bay Office. HESD staff provide consultative services, technical assistance and advice to federal agencies that authorize, fund or undertake activities that may affect marine, estuarine, and migratory fish species and local support for NMFS' habitat conservation stewardship efforts in Maryland, Delaware and Pennsylvania. Conservation Division staff review coastal development projects in Maryland and provide local support for NMFS habitat conservation of endangered species and mitigate the impacts of development projects on such species through consultations with other Federal agencies.

National Ocean Service (NOS) - Chesapeake Bay-Maryland National Estuarine Research Reserve

This 6,249-acre multi-component reserve was designated in 1985 and 1990, is managed by the Maryland Department of Natural Resources. The three sites are: Monie Bay, Otter Point Creek, and Jug Bay. This research reserve reflects the diversity of estuarine habitats found within the Maryland portion of the Bay. Research here focuses on methods to restore submerged aquatic vegetation and wild rice restoration techniques and monitoring the ability of marshes to keep pace with sea level rise. The reserve is also a partner in the NOAA Sentinel Site Program.

National Ocean Service (NOS) – Margaret A. Davidson Graduate Fellowship

The Margaret A. Davidson Graduate Fellowship program funds graduate student research and professional development opportunities within the National Estuarine Research Reserve System. The program supports collaborative research addressing local management challenges that may influence future policy and management strategies. The Davidson Fellow at the Chesapeake Bay-Maryland National Estuarine Research Reserve will focus their research on plant, soil, and microbiome indicators of coastal wetland migration

National Ocean Service (NOS) - Office for Coastal Management

The NOAA Office for Coastal Management practices a partner-based, boots-on-the ground regional approach to coastal management, with staff available in the eight regions. Assistance is provided to local, state, and regional coastal resource management efforts. Constituent feedback and assessments are an important part of the effort. In addition to Silver Spring, MD, Mid-Atlantic staff are located in Annapolis, MD, York, PA, and Albany, NY.

National Environmental Satellite, Data, and Information Service (NESDIS) - <u>The Center for Satellite Applications</u> and <u>Research</u> -<u>CoastWatch East Coast node</u>, collocated with the NOAA Chesapeake Bay office, Annapolis, Maryland The CoastWatch mission is to provide and ensure timely access to near real-time satellite data to protect, restore, and manage U.S. coastal ocean resources, and understand climate variability and change to further enhance society's quality of life. Our primary users include federal, state, and local marine scientists, coastal resource managers, and the public. There are two components to CoastWatch: Central Operations and Regional Nodes. Central Operations, managed by NOAA's National Environmental Satellite, Data, and Information Service (NESDIS), coordinates the processing, delivery, quality control and storage of data products. The East Coast Node provides remote sensing data products and customized decision-making applications for ocean and coastal waters of ME, NH, MA, CT, NY, NJ, DE, MD, VA, NC, SC, GA, and FL. Anyone may access data free of charge. CoastWatch data is used by local managers and scientists in a variety of ways including ecological forecasting, monitoring algal blooms, tracking sediment plumes, and studying temperature effects on fish populations. We work with regional and local stakeholders to build customized applications for environmental management and decision-making. We are hosted within the National Ocean Service and the NOAA Chesapeake Bay Office

MD-1 through 5

Chesapeake Bay Region

National Marine Fisheries Service (NMFS) - NOAA Chesapeake Bay Office

The <u>NOAA Chesapeake Bay Office</u>, within the <u>Office of Habitat Conservation</u> is headquartered in Annapolis, Maryland. It focuses its science, service, and stewardship capabilities on improving the health of the Chesapeake Bay. It supports efforts to enhance sustainable fisheries, vital habitats, environmental literacy, and observations.

National Marine Fisheries Service (NMFS) - Chesapeake Bay Interpretive Buoy System

The <u>NOAA Chesapeake Bay Office</u> within the <u>Office of Habitat Conservation</u> manages a set of observation buoys that tracks data on water quality as well as meteorological and oceanographic conditions. Data from the buoys is updated every six minutes. It is used by scientists, marine safety organizations, boaters, teachers and students, and others who want to learn more about the Chesapeake Bay. Observations are available <u>on the web</u>, at a mobile version of the website, by calling toll-free 877-BUOY-BAY, or using free mobile apps available for Android and iPhone smartphones.

National Marine Fisheries Service (NMFS) - NOAA Chesapeake Bay Office Environmental Science Training Center

- The <u>NOAA Environmental Science Training Center</u>, managed through the <u>NOAA Chesapeake Bay Office</u> within the <u>Office of Habitat Conservation</u>, provides training and in-depth experiences for environmental education professionals to advance their abilities to effectively convey the latest information on science, technology, engineering, and math to teachers and students. Trainings focus on integrating science into the classroom and field based programming, drawing on NOAA and partner expertise and capabilities. NOAA opened the training center's location at the Cooperative Oxford Laboratory campus on Maryland's Eastern Shore in 2010. Trainings provided at and by the Center communicate the work of NOAA and Cooperative Oxford Laboratory and NOAA partners like the Maryland Department of Natural Resources. The Center can also provide workshops at partner sites throughout the Bay watershed. Please reach out with interest.

Chesapeake Bay

National Ocean Service (NOS) - Chesapeake Bay North PORTS®

A Physical Oceanographic Real-Time System (PORTS®) is operated cooperatively with the local maritime community in the upper Chesapeake Bay at which real-time data are quality-controlled and disseminated to local users for safe and efficient navigation. Available observations include water level and meteorological data and tidal currents from five locations. Air gap observations are provided from 4 bridge locations.

National Ocean Service (NOS) - Office of Coast Survey - NOAA Survey Vessel Bay Hydro II

The Office of Coast Survey operates the NOAA Survey Vessel *Bay Hydro II* to acquire hydrographic survey data off the U.S. Atlantic coast, concentrating primarily in the Chesapeake Bay. The vessel is home-ported in Solomons, Maryland. The *Bay Hydro II* is equipped with state-of-the-art hydrographic and navigation equipment to detect submerged wrecks and obstructions are used to update NOAA's nautical charts in the Chesapeake Bay area. The Office of Coast Survey

also uses the *Bay Hydro II* as its primary platform to test and evaluate new and emerging hydrographic survey technologies like uncrewed systems —multiplying the amount of data NOAA's survey fleet collects. This vessel is also able to serve as a navigation response team when required.

Baltimore

NOAA Office of Education - Science On a Sphere® at Maryland Science Center

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 complex environmental processes in a way that is simultaneously intuitive and captivating.

MD-4

Beltsville

Office of Oceanic and Atmospheric Research (OAR) - Atmospheric Mercury Monitoring Network

NOAA's Air Resources Laboratory maintains a specialized ambient air mercury measurement site near Beltsville, Maryland; operated as part of the National Atmospheric Deposition Program's Atmospheric Mercury Monitoring Network (AMNet). The state-of-the-art monitoring provides semi-continuous measurements of reactive gaseous mercury, elemental mercury, and particulate mercury in air. Additional data are collected for ambient air concentrations of trace gases (e.g., sulfur dioxide, nitrogen oxides, carbon monoxide, ozone), as well as meteorological parameters such as temperature, humidity, precipitation, wind speed and direction. The site, in operation since late 2006, provides high quality data to air quality and mercury transport models.

College Park

Office of Oceanic and Atmospheric Research (OAR) and National Environmental Satellite, Data, and Information Service (NESDIS) - Betty Petersen Memorial Library

Betty Petersen Memorial Library is a branch of the NOAA Central Library funded by the National Centers for Environmental Prediction, NESDIS Center for Satellite Applications and Research and the Air Resources Laboratory. The library contains a specialized meteorological and oceanographic collection of about 7,000 volumes. A small number of those volumes cover physics, mathematics, historical weather information, and computer programming. In addition, the library has atlases, a collection of WMO publications, NOAA/NESDIS technical notes and technical reports, NWS/NCEP technical notes and reports, and weather or ocean related publications from other government organizations, from other countries, and from universities. The library is also home to Science on a Sphere, a data visualization and learning tool that can project data sets onto a sphere with 4k resolution.

National Environmental Satellite, Data, and Information Service (NESDIS) – <u>Office of Satellite and Product</u> <u>Operations</u> - Satellite Analysis Branch

The Satellite Analysis Branch (SAB) within the Office of Satellite and Product Operations (OSPO), produces interpretive analysis products in support of hazards mitigation and warning services for U.S. Government agencies, the international community and other users. The Branch routinely provides environmental analyses for decision support applications for a variety of hazards including volcanic ash, marine pollution, and fires and smoke, all as delineated from satellite data. SAB also provides short term satellite analysis support in response to requests from NOAA components for disasters or hazard mitigation, as directed. This supports blue economy goals and improves the nation's weather forecasting. The Branch tests, evaluates, and validates new interpretive satellite analysis techniques and satellite-derived products to assess their

suitability for operational implementation. The Branch provides outreach, user education, and customer service activities for their interpretive products and services.

National Environmental Satellite, Data, and Information Service (NESDIS) – <u>Office of Satellite and Product</u> <u>Operations</u> - Satellite Products Branch

The Satellite Products Branch within the Office of Satellite and Product Operations (OSPO), serves as the primary user interface for NOAA's real-time, automated operational environmental Level 2 and higher satellite products. The Branch leads corrective and adaptive maintenance activities, monitors quality, and evaluates system performance of product applications that are required to create products from current, future, and next generation NOAA and non-NOAA satellites. SPB ensures compliance, reliability, availability, and maintainability of the OSPO operational applications to ingest data, generate, and distribute automated satellite products. The Branch works with research partners to develop, integrate, implement and transition new science algorithms, technology and dissemination methods from current and future satellites into new operational products. SPB provides science software test and integration functions for new product applications. SPB provides real-time 24x7 monitoring of environmental satellite data products and services to provide user notifications on products and services outages and anomalies. SPB provides customer service answering user questions, releasing information on product and service changes, and coordinating and providing outreach activities to help users better utilize OSPO's products and services.

National Environmental Satellite, Data, and Information Service (NESDIS) - <u>The Center for Satellite Applications</u> and <u>Research</u> - <u>NOAA CoastWatch Program</u>

The CoastWatch mission is to provide and ensure timely access to near real-time satellite data to protect, restore, and manage U.S. coastal ocean resources, and understand climate variability and change to further enhance society's quality of life. Our primary users include fFederal, sState, and local marine scientists, coastal resource managers, and the public. There are two components to CoastWatch: Central Operations and Regional Nodes. Central Operations, managed by NOAA's National Environmental Satellite, Data, and Information Service (NESDIS), coordinates the processing, delivery, quality control, and storage of data products.

National Environmental Satellite, Data, and Information Service (NESDIS) - <u>The Center for Satellite Applications</u> and <u>Research</u> - <u>NOAA CoastWatch Program</u>

The CoastWatch mission is to provide and ensure timely access to near real-time satellite data to protect, restore, and manage U.S. coastal ocean resources, and understand climate variability and change to further enhance society's quality of life. Our primary users include fFederal, sState, and local marine scientists, coastal resource managers, and the public. There are two components to CoastWatch: Central Operations and Regional Nodes. Central Operations, managed by NOAA's National Environmental Satellite, Data, and Information Service (NESDIS), coordinates the processing, delivery, quality control and storage of data products.

The seven regional nodes are made up of staff from other participating NOAA line offices and are:

- U.S.the East Coast: National Ocean Service and areas from Maine to Florida
- U.S.the West Coast: National Marine Fisheries Service and areas from California to Washington
- <u>Atlantic OceanWatch; Office of Oceanic and Atmospheric Research and areas of the Caribbean and the Gulf of</u>
 <u>Mexico</u>
- Great Lakes: Office of Oceanic and Atmospheric Research and the Great Lakes region
- <u>Water Node</u>: National Weather Service and U.S. inland waters
- PolarWatch: National Marine Fisheries Service and include the Arctic and Antarctic
- <u>Central Pacific</u>: National Marine Fisheries Service and include Hawaii and the U.S. affiliated Pacific Islands

The Nodes host equipment and personnel to provide near real-time data distribution and regional scientific expertise to the local user community. Together, central operations and the regional nodes provide for the distribution pathway for CoastWatch data products.

National Environmental Satellite, Data, and Information Service (NESDIS) - <u>The Center for Satellite Applications</u> and <u>Research</u>

The Center for Satellite Applications and Research (STAR) is the science arm of NESDIS, which acquires and manages the nation's operational Earth-observing satellites. NESDIS provides data from these satellites, and conducts research to develop products, services, and solutions for users. STAR's mission is to convert satellite observations of the land, atmosphere, ocean, and climate from scientific research and development into routine operations, and to offer state-of-the-art data, products and services to decision-makers. STAR interfaces and collaborates with Cooperative Institutes and sponsors the Educational Partnership Program with Minority Serving Institutions (EPP/MSI) via The City University of New York.

National Environmental Satellite, Data, and Information Service (NESDIS) - <u>The Center for Satellite Applications</u> and <u>Research</u> - <u>Satellite Climate Studies Branch</u>

The Satellite Climate Studies Branch (SCSB), within the Center for Satellite Applications and Research (STAR) in (NESDIS, utilizes the capabilities of Earth-observing satellites to study the climate variations of the atmosphere, land and oceans. The Branch also uses remote satellite observations and model simulations to detect, monitor, and forecast the effects of climate change on the environment, including effects on its ecosystems. The branch is co-located with the University of Maryland's Cooperative Institute for Satellite Earth System Studies (CISESS) at the M-Square Building in University Discovery District in College Park, MD. This partnership between NOAA and CISESS provides for cutting edge research in a university setting where NOAA and academic researchers work on topics of high interest and priority to NOAA. The Cooperative Institute for Satellite Earth System Studies is formed through a consortium of academic, non-profit and community organizations with leadership from the University of Maryland, College Park and North Carolina State University.

National Environmental Satellite, Data, and Information Service (NESDIS) - <u>The Center for Satellite Applications</u> and <u>Research</u> - <u>Cooperative Institute for Satellite Earth System Studies</u>

The Cooperative Institute for Satellite Earth System Studies (CISESS) was established at the University of Maryland College Park. CISESS completes collaborative research that aims to enhance NOAA's ability to use satellite observations and Earth System models. This research advances the national climate mission, which includes monitoring, predicting, and communicating information on climate variability and change. The primary NOAA research partners for CISESS are the NESDIS Center for Satellite Applications and Research (STAR) and the National Weather Service/National Centers for Environmental Prediction. CISESS consists of two main campuses - one at the University of Maryland College Park and the other at the North Carolina Institute in Asheville, North Carolina. Additional associated members include: University of North Carolina System, University of Maryland- Baltimore County, University of Alabama, City College of New York, George Mason University, Oregon State University, Howard University, University of Michigan, University of South Carolina, University of Nebraska Medical Center, The Nature Conservancy, and Research Triangle Institute.

National Weather Service (NWS) - NOAA Center for Weather and Climate Prediction

The National Centers for Environmental Prediction (NCEP), an arm of the NOAA's National Weather Service (NWS), is comprised of nine distinct Centers that provide national and international weather products in support of NWS field offices, government agencies, emergency managers, private sector meteorologists, meteorological organizations and societies, and private companies throughout the world. NCEP is a critical national resource in national and global weather prediction. NCEP is the starting point for nearly all weather forecasts in the United States. Headquartered in Camp Springs, the NCEP prepares and makes available national forecasts and outlooks of weather and climate. Each of the nine Centers, which comprise NCEP, has a specific responsibility for a portion of the NCEP products and services suite.

Five of the nine Centers are located at the NOAA Center for Weather and Climate Prediction on the campus of the University of Maryland in College Park. First, there is NCEP Central Operations, which sustains and executes the operational suite of the numerical analysis and forecast models and prepares NCEP products to be provided to users. It also links all nine of the national Centers together via computer and communications-related services. Second, the Environmental Modeling Center improves weather, marine, and climate predictions for the Nation by developing and improving computer models of the atmosphere and oceans using worldwide weather observations. The forecast models are the starting point for all weather forecasts, federal and private sector. Third, the Weather Prediction Center provides an array of analyses and guidance forecast products specializing in rainfall and snowfall forecasts as well as general weather pattern forecasts. Fourth, the Ocean Prediction Center produces and issues marine meteorological and oceanographic analyses, forecasts, and warnings for the Atlantic and Pacific oceans. Finally, the Climate Prediction Center monitors and predicts the climate for time scales ranging from weeks to seasons and provides information about the long-term global effects of climate patterns on the nation for socioeconomic benefits and improved decision-making.

NOAA Office of Education) - Science on a Sphere at NOAA Center for Weather and Climate Prediction

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 that is used to explain what are sometimes complex environmental processes, in a way that is simultaneously intuitive and captivating.

Office of Oceanic and Atmospheric Research (OAR) - Air Resources Laboratory

The Headquarters of ARL is located in College Park, MD along with the Atmospheric Sciences and Modeling Division (ASMD). ASMD develops products to augment the operational product suites of the NOAA service-oriented line offices (particularly the National Weather Service). This includes the research and development of improved dispersion models for emergency response and air chemistry forecast models. ASMD also improves the understanding of climate variability and trends, the exchange of pollutants between the air and land, and the sources of chemicals that influence sensitive ecosystems.

Office of Oceanic and Atmospheric Research (OAR) - Hydrometeorological Testbed

NOAA's Hydrometeorological Testbed conducts research on precipitation and weather conditions that can lead to flooding, and fosters transition of scientific advances and new tools into forecasting operations. The Hydrometeorology Testbed works to enhance forecaster use of probabilistic information as well as improve probabilistic winter precipitation forecasts, flash flood monitoring and forecasting, atmospheric forcings for hydrologic models, characterization of the state of the current environment, and risk communication. The testbed is located at the Weather Prediction Center (NWS) in College Park, MD and is co-managed by NOAA's Physical Sciences Lab (OAR) and WPO.

Office of Oceanic and Atmospheric Research (OAR) - Cooperative Institute for Satellite Earth System Studies

The Cooperative Institute for Satellite Earth System Studies (CISESS) was awarded to the University of Maryland-College Park. CISESS serves as a mechanism to promote collaborative research between university scientists and those in NOAA. The vision of CISESS is to perform collaborative research aimed at enhancing NOAA's ability to use satellite observations and Earth System models to advance the national climate mission, including monitoring, understanding, predicting and communicating information on climate variability and change. The primary NOAA research partners for CISESS are the National Environmental Satellite, Data, and Information Service (NESDIS) Center for Satellite Applications and Research (STAR) and the National Weather Service/National Centers for Environmental Prediction. CISESS conducts research under three themes: (1) satellite services; (2) Earth system observations and services; and (3) Earth system research.

Suitland

National Environmental Satellite, Data, and Information Service (NESDIS) - <u>Office of Satellite and Product</u> <u>Operations</u> - Direct Services Branch

The Direct Services Branch (DSB) ensures continuous operations of broadcast services, and is the primary user interface for NOAA's satellite direct broadcast services. The Branch provides leadership for the Search and Rescue Satellite Aided Tracking (SARSAT) system, GOES and Argos Data Collection Systems (DCS) and the satellite rebroadcast services including GEONETCast Americas (GNC-A), GOES Rebroadcast (GRB) and the High Rate Information Transmission / Emergency Managers Weather Information Network (HRIT/EMWIN) broadcast.

COSPAS-SARSAT is an international, humanitarian search and rescue system that uses a network of satellites and ground stations to quickly detect and locate emergency beacons carried by ships, aircraft, or individuals in distress. <u>SARSAT</u> is the United States contribution to the international system. NOAA's polar (POES) and geostationary (GOES) satellites are part of the space segment of the Cospas-Sarsat system, and are operated by NOAA Satellite Operations Control Center (SOCC) at the NSOF. NSOF is also the home of the US SARSAT Mission Control Center (USMCC), which receives distress information and notifies the appropriate Rescue Coordination Center automatically when a beacon alert is detected. SARSAT is part of an international humanitarian effort helping to improve the rescue of persons in distress. SARSAT has saved more than 10,153 lives in the United States, and over 50,000 people rescued worldwide since 1982.

National Environmental Satellite, Data, and Information Service (NESDIS) – <u>Office of Satellite and Product</u> <u>Operations</u>

The Office of Satellite and Product Operations (OSPO) manages and directs the command and control of 17 satellites and acquisition of data from partner domestic and foreign satellite agencies - including legacy and new satellites in the geostationary and low earth orbits, and satellites used for space weather observations.. This responsibility includes control, tracking, acquisition of data from these spacecraft from the NOAA Satellite Operations Facility (NSOF) at Suitland, MD. OSPO relies on ground stations at Svalbard, Norway; McMurdo, Antarctica; and Command and Data Acquisition (CDA) facilities at Fairmont, West Virginia, Wallops, Virginia, and Fairbanks, Alaska to control and track the satellites, and acquire their data. Under agreement with the Department of Defense, OSPO also provides control for the Defense Meteorological Satellite Program (DMSP) and EWS-G1 (formerly GOES-13).

OSPO's central ground facilities, NSOF ingests, processes, and distributes environmental satellite data and derived products, and provides imagery and products from this data to the National Weather Service Centers and Weather Forecast Offices, and other domestic and international users. These products include, near-real time imagery of current or developing cyclones, storms, wildfires, satellite imagery of various areas of the United States, and an array of other atmospheric data products. OSPO is also responsible for operating the <u>SARSAT U.S. Mission Control Center</u>, which is an integral part of the global satellite-assisted search and rescue system.

Finally, OSPO supports the launch, activation, and evaluation of new satellites and the in-depth assessment of satellite and ground systems anomalies. Data is sent to the National Centers for Environmental Information (NCEI) for archiving and accessing purposes.

Office of Oceanic and Atmospheric Research (OAR) and Office of the Chief Information Officer (CIO) - <u>N-Wave</u> <u>NOAA Science Network</u>

N-Wave is NOAA's science network connecting NOAA, academic, and state research network communities to data and resources needed to advance environmental science.

MD-5

Greenbelt

National Environmental Satellite, Data, and Information Service (NESDIS) - GOES-R Program Office

The GOES-R Series Program Office is responsible for the acquisition of NOAA's newest generation of Geostationary Operational Environmental Satellites (GOES) - the "R" Series - to maintain and advance NOAA's geostationary satellite capabilities in support of NOAA's missions. While NOAA manages and funds the GOES-R Series Program, its development is a collaborative effort between NOAA and NASA with significant assistance from a nation-wide network of aerospace companies. The advanced spacecraft and instrument technologies offered by the GOES-R series of satellites provide revolutionary views of hurricanes, severe storms, wildfires, and other meteorological phenomena. Their data are used to support the U.S. weather enterprise in issuing potentially life-saving forecasts, watches, and warnings of severe weather and other environmental hazards.

GOES-R, launched in November 2016, is now known as GOES-16 and is operational as NOAA's GOES-East. GOES-S, launched in March 2018, is now named GOES-17 and serves as the primary backup. GOES-T, now GOES-18, launched in March 2022 and is operational as NOAA's GOES-West. GOES-U, the final satellite in the series, is scheduled for launch in 2024. Major components that fly on GOES-R Series satellites were developed in Littleton, Colorado; Stennis, Mississippi; Fort Wayne, Indiana; Rochester, New York; Palo Alto, California; Carlisle, Massachusetts; Boulder, Colorado; and Greenbelt, Maryland.

National Environmental Satellite, Data, and Information Service (NESDIS) - <u>Geostationary Extended Observations</u> (GeoXo) Program

The Geostationary Extended Observations (GeoXO) program is responsible for the acquisition of NOAA's next generation of geostationary satellites, the mission that will follow GOES-R. GeoXO will provide real-time, high-resolution visible and infrared imagery for monitoring Earth's weather, oceans, and environment and real-time lightning mapping. GeoXO plans to add infrared sounding, atmospheric composition, and ocean color observations from geostationary orbit. These observations would complement those from NOAA's partners in Europe and Asia, building a critical global observing system. By better understanding the connection between weather, water, and climate, scientists will have a deeper

understanding of Earth as a system. This will help them to address emerging environmental challenges, respond to the effects of Earth's changing climate, and improve forecasting and warning of severe weather and environmental hazards. The first GeoXO satellite is currently scheduled for launch in 2032

National Environmental Satellite, Data, and Information Service (NESDIS) - <u>Joint Polar Satellite System Polar</u> <u>Follow-On</u>

The Joint Polar Satellite System (JPSS) is the next generation of polar-orbiting environmental satellites for DOC. The NOAA-NASA Suomi NPP satellite, part of the JPSS constellation of satellites was launched in 2011. The second in the series, NOAA-20 (previously called JPSS-1), launched in 2017, and JPSS-2 was launched in November 2022. These satellites circle the Earth approximately once every 100 minutes, monitoring global environmental conditions, collecting, disseminating and processing data about the Earth's weather, atmosphere, oceans, land, and near-space environment. JPSS monitors the Earth from pole to pole and provides data for long-range weather and climate forecasts. The data gathered by JPSS aids in reducing the potential loss of human life and property through more efficient disaster planning and response to severe weather conditions, such as wildfires, hurricanes and floods. Citizens benefit from satellite data in the areas of general aviation, agriculture, and maritime activities, among others. Military and homeland security users benefit from JPSS tactically and strategically. JPSS collects a massive amount of precise Earth surface, atmospheric and space environmental measurements from a variety of onboard sensors. This volume of data allows scientists and forecasters to monitor and predict weather patterns with greater accuracy. In addition, JPSS also improves the speed of weather forecasting through improvement to data delivery times. These improvements are largely made possible by JPSS' ground systems that will collect and relay JPSS sensor data via a closed dedicated network to NOAA NESDIS for central processing. Major components that fly on the JPSS satellites and will fly on PFO satellites were developed in Fort Wayne, Indiana; El Segundo, California; Linthicum, Maryland; Azusa, California; Boulder, Colorado; Gilbert, Arizona; and Hampton, Virginia.

National Environmental Satellite, Data, and Information Service (NESDIS) - Office of Projects, Planning, and Analysis - Space Weather Follow On Program

The Space Weather Follow On (SWFO) program managed by OPPA supports the United States National Space Weather Strategy by sustaining operational space weather observation platforms and capabilities. While NOAA manages and funds the SWFO Program, its development is a collaborative effort between NOAA NASA, DoD, European Space Agency. The SWFO program will provide continuity of essential solar coronal observations and space weather measurements that support the National Weather Service (NWS) Space Weather Prediction Center (SWPC) forecasting mission.. The SWFO Program currently includes: a SWFO-L1 Observatory operating at the Lagrange 1 point (SWFO-L1), providing coronal imaging and solar wind measurements and a coronagraph integrated on the GOES-U spacecraft in geostationary orbit providing coronal imaging. SWFO-L1 will be launched as a rideshare with NASA's Interstellar Mapping and Acceleration Probe (IMAP) mission in Fiscal Year 2025. Major components of the SWFO-L1 program are being developed in Boulder, Colorado; San Antonio, Texas; Berkeley, California; Durham, New Hampshire; Washington, D.C.; and Greenbelt, Maryland. GOES-U is planned for launch in Fiscal Year 2024.

NOAA Office of Education - Science On a Sphere at NASA Goddard Space Flight Center

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 complex environmental processes in a way that is simultaneously intuitive and captivating.

Largo

Office of the Chief Information Officer (OCIO) - Information Technology Center

The Information Technology Center (ITC) is a datacenter providing 24x7 operations and support for the financial applications of NOAA and its parent agency, the Department of Commerce (DOC). The largest such application is known as the Commerce Business System (CBS), which processes approximately 58% of the DOC budget. The ITC hosts other DOC-wide support systems including Cyber-Security Assessment and Management (CSAM) which provides a repository for documentation prepared for FISMA-mandated Certification and Accreditation of all DOC IT systems. Another DOC system at the ITC is known as SmartPay II, the system for handling all DOC Purchase, Fleet, and Travel credit cards under contract with JP Morgan/Chase and MasterCard. While hosting around 50 applications, the ITC is also being viewed as a possible location for consolidation of the financial processing of the DOC.

Office of the Chief Information Officer (OCIO) - Service Delivery Division

The Service Delivery Division provides a suite of IT services to support NOAA's mission. Our work includes IT infrastructure design and maintenance, network and server management and administration, desktop configuration and maintenance, application and system design and implementation, and IT security.

Nanjemoy

National Ocean Service (NOS) - <u>Mallows Bay-Potomac River National Marine Sanctuary</u> was designated on September 3, 2019. This 18-square mile area of the Potomac River lies entirely within Maryland waters and adjacent to Charles County MD. It is jointly managed by the State of Maryland and Charles County Maryland. The primary point for public access is at Mallows Bay Park, near Nanjemoy MD.

The sanctuary protects and interprets the remains of the World War I-era wooden steamships – known as the "Ghost Fleet" – and related cultural heritage dating back nearly 12,000 years including the ancestral lands of three Tribes. Its significance is recognized by listing on the National Register of Historic Places and as a National Treasure by the National Trust for Historic Preservation.

Additionally, the sanctuary facilitates recreation, tourism and economic opportunity. Nearly a century of natural processes have gradually transformed the ghost fleet into ecologically valuable habitats. The overgrown hulls now form a series of distinctive islands, intertidal habitat, and underwater structure critical to commercial and recreational fisheries in addition to birds such as ospreys, blue herons, and bald eagles. Although the sanctuary does not manage or regulate these natural resources, the unique blending of history and ecology attracts and captivates visitors and serves as a living laboratory for research, education and community engagement.

Waldorf

NOAA Office of Education - Science On a Sphere at St. Charles High School

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MD-6 Germantown NOAA Finance Office (NFO) - <u>Eastern Operations Branch</u> The Eastern Operations Branch processes payments for services, supplies, and materials commonly required to support the Department's programs (i.e. lab equipment, non- personal services, travel expenses, utilities, and vessel charters). In providing these services, our staff examines vouchers and invoices, issues bills for receivables, receives and deposits receipts, pays various types of accounts payable documents, and enters other types of accounting transactions. The staff also responds to clients about finance-related concerns and problems.

Office of the Chief Information Officer (OCIO) - Service Delivery Division

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MD-7

Baltimore

NOAA Office of Education - Coastal Ecosystem Learning Centers (CELC) network

In Maryland, NOAA's Office of Education provides support to the National Aquarium in Baltimore as part of the Coastal Ecosystem Learning Centers (CELC) network, which is made up of 25 aquariums and marine science education centers located throughout North America. The CELC network collaborates on a variety of initiatives, ranging from youth summits to multi-institution projects, with the goal of better engaging the public in understanding, appreciating, and protecting marine and freshwater ecosystems. Through the CELC network, the Office of Education provides guidance, resources, and scientific expertise to these institutions, which collectively reach an estimated 20 million people annually across North America. By coordinating with the CELC network, NOAA helps to further its mission of engaging the public in protecting and preserving coastal and marine ecosystems.

MD-8

Silver Spring

Acquisition and Grants Office (AGO) - Headquarters

The Acquisition and Grants Office provides financial assistance and acquisition services for NOAA by overseeing and implementing all processes related to contracts and grants. For FY 2010, NOAA issued 2,306 grants, totaling over \$1.061 billion, to partner organizations and institutions throughout the United States and our territories.

National Environmental Satellite, Data, and Information Service (NESDIS) - <u>National Centers for Environmental</u> <u>Information</u>

NOAA's National Centers for Environmental Information (NCEI) are responsible for hosting and providing access to one of the most significant archives on earth with comprehensive oceanic, atmospheric, and geophysical data. NCEI is the Nation's leading authority for environmental information by and maximizing the Federal government's billion-dollar investment in environmental data, NCEI remains committed to providing products and services to private industry and businesses, local to international governments, academia, as well as the general public. NCEI headquarters are located in Asheville, North Carolina with other major locations in Boulder, Colorado; Silver Spring, Maryland; and Stennis Space Center, Mississippi.

National Environmental Satellite, Data, and Information Service (NESDIS) - Office of Projects, Planning, and Analysis

The focus of the Office of Projects, Planning, and Analysis (OPPA) is on flight projects, data exploitation, and execution of domestic, international, and commercial partnerships to meet NOAA's observation requirements. OPPA currently

manages the following acquisitions: the SWFO Program for space weather monitoring, exploitation of data from the European Metop second generation series, and a partnership with ISRO for scatterometry data from India's SCATSAT and OceanSat 3 missions. OPPA is also developing NESDIS' Space Weather Program to continue the program of record to encompass future space weather observational needs from low-earth, geostationary, and deep-space orbits.

National Environmental Satellite, Data, and Information Service (NESDIS) - Office of Common Services

NOAA's Office of Common Services (OCS) provides and serves as the single organization for the planning and execution of all common ground services. OCS is an effort of different ground components that will position NESDIS to effectively and efficiently develop and maintain its core ground systems capabilities. OCS is composed of the following: Comprehensive Large Array Data Stewardship System (CLASS) development, Data-Source Agnostic Common Services (DACS), Satellite Product Development, Common Ground Services Architecture, NPOESS Preparatory Data Exploitation (NDE), and Ground Systems.

OCS core responsibilities include: completing analyses; defining and designing systems; and developing, acquiring, transitioning, and sustaining operations and activities for new and existing satellite ground systems. OCS provides IT hardware upgrades for real time satellite control and telemetry processing systems (Polar Acquisition Control System) and antenna tracking components (both electronic and mechanical). OCS develops and sustains data acquisition, communications, control, product generation and distribution, enterprise management, algorithm operationalization, and data archival services for NOAA's environmental satellites. OCS provides engineering and project management for ground systems architecture, design, development, integration and testing, infrastructure, and facilities. OCS participates in system verification and validation efforts and also in life cycle reviews for satellite acquisition programs and projects.

National Environmental Satellite, Data, and Information Service (NESDIS) - Office of Systems Architecture and Engineering

NOAA's Office of Systems Architecture and Engineering (SAE) applies systems engineering principles to optimize technical quality and to meet cost and schedule requirements across NESDIS in support of its mission. Its core responsibilities include enterprise-level system architecture, user engagement, requirements, advanced system and technology planning, management and technical policies and procedures, as well as system validation, assurance, and adjudication. SAE also performs systems engineering design, analysis, and evaluation of space flight, ground, data, and archive segments. As part of this responsibility, the program defines requirements, policies and procedures for systems engineering related to acquisitions, operations, archiving, and sustainment for implementation throughout NESDIS.

SAE maintains enterprise lessons learned toward process improvement for future NESDIS implementation and serves as the expert technical liaison relating to the end-to-end systems architecture. The office also establishes and administers the quality management system across NESDIS by identifying best practices and providing enterprise systems assurance and configuration management. This helps ensure compliance with the NESDIS quality management system through the life cycle of each NESDIS enterprise. In addition to validation and verification of user needs, the office serves as principal advocate for the assessment and mitigation of risk. This enables NESDIS to meet its mission, vision, and objectives through systems analysis of current and future enterprise architectures.

National Environmental Satellite, Data, and Information Service (NESDIS) - Headquarters

NOAA's NESDIS is the largest civil operational environmental space agency and the most extensive holder of atmospheric and oceanographic data in the world. NESDIS is dedicated to providing timely access to global environmental data from satellites and other sources to promote, protect, and enhance the Nation's economy, security, environment, and quality of life. NESDIS acquires and manages the Nation's operational environmental satellites,

completes research and through its National Centers for Environmental Information, provides data and information services and additional research. NESDIS is in the process of developing and acquiring its next-generation operational satellites. NESDIS has extensive partnerships with the National Aeronautics and Space Administration and the Department of Defense. It also collaborates with international partners to foster full and open data exchanges to support NOAA and the United States weather and environmental monitoring priorities. NESDIS environmental satellite observations provide important contributions to U.S. national security by providing military users with real-time and near-real-time observations for their aircraft, ships, ground forces, and facilities worldwide. NESDIS also contributes to the national economy by providing environmental data that supports resource management of energy, water, and global food supplies.

National Marine Fisheries Service (NMFS) - NOAA Seafood Inspection Program

NOAA's Seafood Inspection Program conducts a voluntary inspection program for fishery products on a fee-for-service basis which assure compliance with all applicable food regulations. The office offers a wide range of professional services to the area's fishermen and fish processors including process and product inspection, product grading, lot inspection, laboratory analysis, and training. All edible foodstuffs, ranging from whole fish to formulated products, as well as fishmeal used for animal foods, are eligible for inspection and certification.

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

The mission of NOAA Fisheries Office of Law Enforcement is to protect global marine resources by enforcing domestic laws and international treaties and obligations dedicated to protecting wildlife and their natural habitat. 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.

National Marine Fisheries Service (NMFS) - Office of Sustainable Fisheries

The Office of Sustainable Fisheries (OSF) supports national domestic policy issues, provides support to the regional fishery management councils, and manages Atlantic highly migratory species. OSF works closely with NOAA Fisheries regional offices and science centers, the regional fishery management councils, and the Interstate Marine Fisheries Commissions to end and prevent overfishing, rebuild overfished stocks, and ensure healthy ecosystems. OSF's headquarters office includes the Domestic Fisheries Division, Atlantic Highly Migratory Species Management Division, and Operations and Regulatory Services Division.

National Marine Fisheries Service (NMFS) - Office of Science and Technology

The Office of Science and Technology provides support and coordination for NOAA Fisheries science programs and helps ensure a sound scientific basis for resource conservation and management decisions. ST coordinates closely with six NOAA Fisheries science centers: Alaska, Northeast, Northwest, Pacific Islands, Southeast, and Southwest. In particular, ST: 1) Supports at-sea resource surveys, stock assessments, habitat science and assessments, protected resource science and the seabird program, fisheries observer programs, cooperative research, and the independent peer review of NOAA Fisheries science products and programs; 2) Integrates and disseminates state and federal statistics about marine fisheries, and administers the surveys used to estimate recreational landings; 3) Conducts and coordinates socioeconomic research and data collection undertaken by the agency to support conservation and management of living marine resources; 4) Supports the development and coordination of science programs to advance the incorporation of ecosystem information into living marine resource management; 4) Provides mission support by maintaining and improving the quality and credibility of NOAA Fisheries' scientific activities; 5) Provides application management and

development to support timely access to NOAA Fisheries data resources; and 6) Coordinates the publication of NOAA Fisheries journals and reports. OST's headquarters office includes the Fisheries Statistics Division, Assessment and Monitoring Division, Economics and Social Analysis Division, Science Information Division, MarineEcosystems Division, and the Operation, Management, and Information Division. In addition, the NOAA National Systematics Laboratory in Washington, D.C. and the NOAA Fisheries Scientific Publications Office in Seattle, WA are part of the Office of Science and Technology.

National Marine Fisheries Service (NMFS) - Headquarters

NOAA's National Marine Fisheries Service (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, ensures compliance with fisheries regulations, and works to reduce wasteful fishing practices. Under the *Marine Mammal Protection Act* and the *Endangered Species Act*, NMFS recovers protected marine species (i.e. whales, turtles) without unnecessarily impeding economic and recreational opportunities. With the help of the five regional offices and eight councils, NOAA's National Marine Fisheries Service is able to work with communities on fishery management issues. NMFS works to promote sustainable fisheries and to prevent lost economic potential associated with overfishing, declining species and degraded habitats.

National Ocean Service (NOS) - Office of Response and Restoration

NOAA's Office of Response and Restoration (OR&R) is a center of expertise in preparing for, evaluating, and responding to threats to coastal environments, including oil and chemical spills, releases from hazardous waste sites, disasters, and marine debris. To fulfill its mission of protecting and restoring NOAA trust resources, OR&R provides scientific and technical support to prepare for and respond to oil and chemical releases, determines damage to natural resources from those releases, protects and restores marine and coastal ecosystems, including coral reefs; and works with coastal communities to address critical local and regional coastal challenges.

National Ocean Service (NOS) - NOAA Marine Debris Program

The NOAA Marine Debris Program (MDP) in the Office of Response and Restoration (OR&R) leads national and international efforts to reduce the impacts of marine debris. Marine debris is a pervasive problem which threatens our oceans and coastal environments, navigational safety, the economy, and human health. To address this threat, the program invests in marine debris removal, prevention, and research projects in partnership with state and local agencies, tribes, non-governmental organizations, academia, and industry. MDP headquarters staff, including the MDP Director, are based in Silver Spring. The MDP Mid-Atlantic Regional Coordinator, based in Silver Spring, supports coordination efforts with regional stakeholders, provides support to grant-funded projects, tracks progress of projects, and conducts regional marine debris outreach to local audiences.

National Ocean Service (NOS) - Center for Coastal Monitoring and Assessment

The Center for Coastal Monitoring and Assessment conducts field research and data analysis to support marine resource management at local, regional, and national levels. We partner with groups ranging from Tribal organizations to state governments to other federal agencies to identify research and monitoring questions of importance to communities. Major research programs include: biogeographic assessments in support of ecosystem management, monitoring and research to help find sources of coastal contamination, assessments of the ecological impacts of climate change, and forecasts to help protect the public from harmful algal blooms.

National Ocean Service (NOS) - Center for Sponsored Coastal Ocean Research

The Center for Sponsored Coastal Ocean Research administers NCCOS extramural research – a portfolio of 11 programs consisting of many multi-year awards held by over 370 university, state, and government scientists and managers. Research program often cumulative with the development of models explaining how ecosystems work and how they will respond to change, both negative (e.g., pollution or drought) and positive (e.g., protection or restoration). These are used to support sound coastal management decisions and support an ecosystem approach to managing coastal resources. In 2012, the research portfolio focused on: harmful algal blooms, hypoxia, and regional ecosystem science.

National Ocean Service (NOS) - National Centers for Coastal Ocean Science

National Centers for Coastal Ocean Science provides coastal managers with the information and tools they need to balance society's environmental, social, and economic goals. We are the primary coastal science arm within NOAA's National Ocean Service. Solving environmental problems requires knowledge and power. Scientists have knowledge, but typically limited authority to change behavior. Decision makers have power, but may lack in-depth knowledge of particular problems. Linking these two groups brings knowledge together with power to make informed decisions that can drive social change. NCCOS works directly with managers, industry, regulators, and scientists to deliver relevant, timely, and accurate scientific information and tools. In addition to Headquarters, NCCOS consists of five Centers, two laboratories, and the NOAA RESTORE Act Science Program.

National Ocean Service (NOS) - National Geodetic Survey Program

The National Geodetic Survey's (NGS) time-tested survey expertise is the foundation for measuring the size, shape, and height of our nation's entire land area. This data comprises the National Spatial Reference System, a set of standard reference points that provide the latitude, longitude, and elevation framework necessary for the nation's land surveying, navigation, positioning, and mapping activities. Committed to making transportation and navigation safer, NGS also conducts airport surveys in the United States to position obstructions and aids to air travel. In addition, NGS conducts a coastal mapping program to provide a regularly updated and consistent national shoreline using remote sensing techniques and technology..

National Ocean Service (NOS) - Office of Coast Survey

The Office of Coast Survey is responsible for producing the suite of nautical charts that covers the coastal waters of the U.S. and its territories acquiring hydrographic data to update these charts. The Office of Coast Survey also develops hydrographic survey specifications; conducts technological development and application programs to increase efficiency in survey data acquisition, data processing, and chart production; and carries out research to develop techniques and methods for accomplishing these objectives. The Office of Coast Survey ensures safe, efficient and environmentally sound marine transportation that brings an uninterrupted flow of people and goods into and out of our nation's ports. The foundation of the United States economy is the Marine Transportation System--America's network of oceans, rivers, canals, locks and dams. Shipping on these "marine highways" moves people and cargo around the country, and connects us to the global marketplace for international trade and affordable goods.

National Ocean Service (NOS) - Office for Coastal Management

NOAA's Office for Coastal Management provides national leadership, strategic direction, and services for the coastal management community. Major initiatives housed within this organization include the Coral Reef Conservation Program; the National Coastal Zone Management Program; the National Estuarine Research Reserve, and the Digital Coast. The

primary offices are located in Charleston, South Carolina and Silver Spring, Maryland. Satellite offices and other field staff are located throughout the coastal zone.

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 to protect, conserve, and restore coral reef resources. Coral reefs are some of the most biologically diverse ecosystems in the world and provide a range of benefits and vital services to coastal communities but are threatened from unsustainable fishing practices, climate change impacts, and land-based sources of pollution. In response to these threats, NOAA invests in ecosystem-based management initiatives to build capacity in marine protected area management; monitoring, research-modeling, and forecasting related to climate-related risks and vulnerabilities to coral reefs; and fostering partnerships to address and reduce impacts of land-based sources of pollution. The program has headquarters in Silver Spring, MD, within the NOAA Office for Coastal Management. National activities led out of Silver Spring include the Social Science Program and the National Coral Reef Monitoring Program.

National Ocean Service (NOS) - Gateway to NOAA

Gateway to NOAA is a permanent exhibit on NOAA's Silver Spring campus highlighting the ways in which NOAA takes the pulse of the planet every day and protects and manages ocean and coastal resources. The exhibit features a number of engaging displays including the "NOAA Heritage" section featuring historic scientific instruments and other tools and artifacts from the agency's 200-year history and "Earth Observations" section highlighting the ways in which NOAA gathers information about our environment on land, sea, and sky. Do you know the difference between weather and climate? Get the answer in the "Weather and Climate" section, which focuses on NOAA's role in forecasting the weather and understanding climate processes. In the "Water" section, the public can learn how NOAA supports safe navigation and commerce, explores the deep sea, and manages and protects coastal and ocean resources both locally and across the nation; and go behind the headlines in the "NOAA in the News" section, which features and interactive display through which visitors can explore our ocean world.

National Ocean Service (NOS) - Office of National Marine Sanctuaries

The Office of National Marine Sanctuaries serves as the trustee for a network of underwater parks encompassing more than 600,000 square miles of marine and Great Lakes waters from Washington state to the Florida Keys, and from Lake Huron to American Samoa. The network includes a system of 14 national marine sanctuaries and Papahānaumokuākea and Rose Atoll marine national monuments. Few places on the planet can compete with the diversity of the National Marine Sanctuary System, which protects America's most iconic natural and cultural marine resources. The system works with diverse partners and stakeholders to promote responsible, sustainable ocean uses that ensure the health of our most valued ocean places. A healthy ocean is the basis for thriving recreation, tourism and commercial activities that drive coastal economies. The Office of National Marine Sanctuaries also leads the <u>National Marine Protected Areas Center</u>, the nation's hub for building innovative partnerships and tools to protect our special ocean and leads the Office of National Marine Sanctuaries' international work.

National Ocean Service (NOS) - Headquarters

NOS delivers the tools and services needed to understand, predict, and respond to the challenges we face along America's 95,000 miles of shoreline and 3.5 million square miles of coastal, Great Lakes, and deep-ocean waters. This vast area generates more than 60 percent of the nation's gross national product each year. Yet our oceans and coasts are facing unprecedented pressure from threats such as climate change, marine debris, and port congestion. In response

to these threats, NOS scientists, natural resource managers, and specialists are seeking solutions that continue to grow our nation's coastal economy while sustaining a healthy and productive environment. In partnership with other NOAA offices; federal, state, and local agencies; industry representatives; members of the academic community; and others, NOS focuses on science, technology, innovation, and education to keep our oceans and coasts safe, healthy and productive.

National Ocean Service (NOS) - U.S. Integrated Ocean Observing System Office

The Integrated Ocean Observing System (IOOS) is a multidisciplinary system designed to enhance our ability to collect, deliver, and use ocean information. The goal is to provide continuous data on our open oceans, coastal waters, and Great Lakes in the formats, rates, and scales required by scientists, managers, businesses, governments, and the public to support research and inform decision-making. No single agency or organization has the capacity or resources to fully implement the U.S. IOOS on a national scale. IOOS represents a national partnership in which 17 Federal agencies and 11 Regional Associations share responsibility for the design, operation, and improvement of a national network of observations. The 17 Federal agency partners also provide our nation's contributions to advance the global component.

National Weather Service (NWS) - Headquarters

The National Weather Service (NWS) provides weather, water, and climate forecasts and warnings for the United States, its territories, adjacent waters and ocean areas, for the protection of life and property and the enhancement of the national economy. NWS data and products form a national information database and infrastructure, which can be used by other governmental agencies, the private sector, the public, and the global community. The function of headquarters is to provide national integration and oversight of the administrative, programmatic, financial, international, information technology, and other organizational management functions, and to conduct the national level strategic planning, communications, and diversity activities. There are a number of NWS headquarters offices based in Silver Spring, including the Office of the Assistant Administrator (the NWS Director), the Office of Science and Technology Integration, the Analyze, Forecast and Support Office, the Office of Observations, the Office of Central Processing, Office of Dissemination, and the Office of Facilities.

Office of Oceanic and Atmospheric Research (OAR) - Headquarters

The Office of Oceanic and Atmospheric Research (OAR) provides the research foundation for understanding the complex systems that support our planet. Working in partnership with other organizational units of NOAA, OAR provides better forecasts, earlier warnings for natural disasters and a greater understanding of the Earth. Our role is to provide unbiased science to better manage the environment, nationally and globally.

Office of Oceanic and Atmospheric Research (OAR) - NOAA Central Library

The NOAA Central Library provides information and research support to NOAA staff and contractors. Disciplines covered in a print and electronic collection includes: weather and atmospheric sciences, oceanography, ocean engineering, nautical charting, marine ecology, marine resources, ecosystems, coastal studies, aeronomy, geodesy, cartography, mathematics and statistics, hydrographic surveying; hydrology, and meteorological satellite applications. The Library subscribes to over 10K electronic journals and 70K ebooks. The Library manages the <u>NOAA Institutional Repository</u>, which provides access to NOAA authored and funded research publications in accordance with White House OSTP Memorandum Increasing Access to the Results of Federally Funded Research (2013). The library also networks with 19 NOAA libraries across the nation, sharing resources in order to provide information and research services to NOAA staff. Other resources and services offered includes a Rare Book room and a robust Library SeminarBrown Bag speaker series. The Library is closed to the public but can provide reference assistance to the public via: library.reference@noaa.gov.

Office of Oceanic and Atmospheric Research (OAR) - Climate Program Office

The OAR Climate Program Office (CPO) mission is to advance scientific understanding, monitoring, and prediction of climate and its impacts to enable and improve society's ability to plan and respond. CPO's position at the intersection of NOAA's science and service missions, the climate research community, and the broader climate enterprise enables it to lead a research agenda and forge partnerships that enhance society's ability to make effective decisions. CPO manages the competitive research programs by which NOAA funds high-priority climate science to advance understanding of atmospheric, oceanic, land-based, and snow and ice processes, and how they affect climate. CPO's foci include developing a broader user community for climate products and services; providing a focal point within NOAA for collaborative climate science and services. CPO supports interdisciplinary research projects across the nation to address societal challenges, including: reducing vulnerability to extreme weather; helping communities and businesses prepare for drought and water resource challenges; managing risks to coastlines and coastal infrastructure; managing risks to marine ecosystems; and effective ways of adapting to and/or mitigating climate-related impacts. Our research is conducted by investigators outside the federal government, such as through academic and private sectors, within federal government research labs, and in NOAA Cooperative Institutes.

Office of Oceanic and Atmospheric Research (OAR) - Small Business Innovation Research

The Small Business Innovation Research (SBIR) program is a highly competitive merit-based grant program that encourages U.S. small businesses to engage in federal Research/Research and Development (R/R&D), with the end goal of developing innovative and commercially-viable products or services. Including qualified small businesses in the nation's R&D arena stimulates high-tech innovation. The United States gains entrepreneurial spirit as it meets its specific research and development needs. NOAA's SBIR is focused on developing products and services across our mission areas, including a special focus in developing innovations in uncrewed systems, artificial intelligence, and genomics. While the NOAA SBIR program is managed from our offices in Silver Spring, MD, our awardees are located across the United States and territories. In 2022, we awarded 35 grants totalling approximately \$9.5M to 35 U.S. small businesses. Of these 35 businesses, 9 were Women Owned and 3 were considered Socially and Economically Disadvantaged. The States with the most awards in 2022 were California, Florida, Massachusetts, Maine, and Montana.

Chief Information Officer (CIO) - N-Wave NOAA Science Network

N-Wave is NOAA's science network connecting NOAA, academic, and state research network communities to data and resources needed to advance environmental science.

NOAA Office of Education - Science On a Sphere® at NOAA Headquarters

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Office of Oceanic and Atmospheric Research (OAR) - National Sea Grant College Program

The National Sea Grant College Program (Sea Grant) is a federal-university partnership administered by NOAA that integrates research, extension outreach, and education. Sea Grant forms a national network of 34 programs in all U.S. coastal and Great Lakes states, Puerto Rico, and Guam. The National Sea Grant Office headquarters is located in Silver

Spring on the NOAA campus. Sea Grant encourages the wise stewardship of our marine resources through partnerships with government, academia, industry, scientists, and private citizens concerning issues surrounding our coasts, Great Lakes, and ocean waters. Get involved with Sea Grant through state and national opportunities like the John A. Knauss Marine Policy Fellowship program at <u>seagrant.noaa.gov</u>.

Office of Oceanic and Atmospheric Research (OAR) - Ocean Acificition Program

The Ocean Acidification Program pursues science to improve our understanding of how (and how fast) the chemistry of the ocean is changing, how variable that change is by region, and what impacts these changes are having on marine life, people, and the local, regional, and national economies. The OAP's support staff are based in Silver Spring, MD. In support of NOAA's mission to understand changes in the world's oceans, share that knowledge, and conserve coastal and marine ecosystems, the OAP plays an integral role in maintaining long-term ocean acidification monitoring; conducting research designed to to understand marine ecosystems sensitivity to acidification; promoting relevant educational opportunities; engaging in national public outreach activities related to ocean acidification and its impacts; and coordinating activities with other agencies and appropriate international ocean science bodies. As part of its responsibilities, the OAP provides grants for critical research projects that explore the effects on marine organisms, ecosystems and the socioeconomic impacts that can lead to potential adaptive strategies. Additionally, the Ocean Carbon and Acidification Data System (OCADS) ensures data collected from OAP-funded research and other sources is archived and accessible for ocean carbon and ocean acidification analyses, forecasting capabilities, and better assessments of marine resource vulnerability. OCADS is envisioned as the best data management services to support regional to global ocean carbon cycling and ocean acidification research. It builds upon a U.S. National ocean acidification data management and integration service required by the Federal Ocean Acidification Research and Monitoring (FOARAM) Act of 2009. The project is seated in National Centers for Environmental Information (NCEI) in Silver Spring, MD and hosts data collected from the nationwide observing network.

Office of Oceanic and Atmospheric Research (OAR) - <u>NOAA Ocean Exploration (NOAA Office of Ocean</u> Exploration and Research)

NOAA Ocean Exploration is dedicated to exploring the unknown ocean, unlocking its potential through scientific discovery, technological advancements, partnerships, and data delivery. The office works with partners to identify priority areas for exploration; support innovations in exploration tools and capabilities; and encourage the next generation of ocean explorers, scientists, and engineers to pursue careers in ocean exploration and related fields. The data and information collected during expeditions and exploration funding awards provide resource managers, the academic community, and the private sector information they need to identify, understand, and manage ocean resources for this and future generations. The office leverages resources via partnerships in and outside of NOAA, and also is a key partner in exploring the limits of the U.S. Extended Continental Shelf in support of the interagency National Strategy for Mapping, Exploring, and Characterizing the United States Exclusive Economic Zone. NOAA Ocean Exploration headquarters is located on the NOAA Campus in Silver Spring and the national program is managed from this location. The program also hosts Exploration Command Centers at locations around the county that enable scientists to participate in NOAA Ship Okeanos Explorer expeditions at sea through the use of telepresence technology. This technology uses satellite and internet to transmit data in real time from the Okeanos Explorer's remotely operated vehicles to shore-based centers around the country, as well as other parts of the world. This allows the ship to operate with the majority of its participating scientists remaining on shore, which expands the breadth of available expertise and increases the pace and efficiency of exploration. It also allows NOAA Ocean Exploration to stream seafloor imagery over standard Internet connections, bringing the excitement of ocean exploration and discoveries live into classrooms, newsrooms, and living rooms around the world - strengthening and engaging the community of ocean explorers and increasing their ability to make informed

decisions about important ocean issues. The Exploration Command Center in Silver Spring is located in the NOAA Science Center.

Office of Oceanic and Atmospheric Research (OAR) - Weather Program Office

OAR's Weather Program Office (WPO) supports world-class weather research to save lives, reduce property damage, and enhance the national economy. WPO works closely with the National Weather Service (NWS) to help develop and transition weather research, including hurricanes, severe thunderstorms, heavy precipitation, and air pollution. Additionally, WPO utilizes social science to learn how to deal with the uncertainties weather presents and to inform its engagement and communication with researchers, funders, and the public. WPO selects and funds research that supports and fosters collaborations — within NOAA's research laboratories and across the weather enterprise (i.e., NOAA, other Federal agencies and entities, state and local governments, academia, and the private sector). WPO's programs include the Observations Program, the Earth Prediction Innovation Center (EPIC), the Joint Technology Transfer Initiative (JTTI), the Subseasonal to Seasonal (S2S) program, the Air Quality (and Fire Weather) Program, The Supplemental Appropriations Program, the Social Science Program, and the Testbeds Program that co-manages the testbeds (Hurricanes and Oceans Testbed located in Miami, FL; Hazardous Weather Testbed located in Norman, OK; Hydrometeorology Testbed and Climate Testbed, both located in Maryland). WPO also coordinates portfolios for various disaster-related supplemental appropriations.

Office of Oceanic and Atmospheric Research (OAR) - Global Ocean Monitoring and Observing Program

The Global Ocean Monitoring and Observing Program (GOMO) is the U.S. Federal source and international leader for sustained, in situ global ocean observations and information in support of research, monitoring, and prediction. GOMO supports half of the world's ocean observing research and has encouraged the participation of over 100 nations in developing the current distributed ocean observing system. These global ocean observations provide the foundation for describing the changes over time in our ocean, and they are used every day in weather, marine, and ocean prediction models, helping us understand our changing ocean and benefiting those who use the wide range of NOAA products and services. Global ocean observations and research are conducted on ships, as well as by robotic observing instruments such as Argo floats, gliders, drifting buoys, moored buoys, uncrewed surface vehicles such as Saildrones, and an increasing array of innovative tools designed to detect environmental change. GOMO works with partners across NOAA and the Cooperative Institutes, as well as other national and international partners, to collect data and information across the global ocean, and to share that knowledge to serve society. The mission of the GOMO program is to provide and support high quality global ocean observations and research to improve our scientific understanding and inform society about the ocean's role in environmental change. GOMO's staff office is located in Silver Spring, MD. GOMO also supports research conducted at the Atlantic Oceanographic and Meteorological Laboratory in Boulder, Colorado.

Office of Oceanic and Atmospheric Research (OAR) - <u>Earth System Science and Modelling Division Competitive</u> <u>Research Programs</u>

The NOAA Climate Program Office (CPO)'s Earth System Science and Modeling (ESSM) Division supports research to advance understanding of the Earth system via five competitive research programs: Climate Variability & Predictability (CVP); Modeling, Analysis, Predictions, and Projections (MAPP); Atmospheric Chemistry, Carbon Cycle, & Climate (AC4); Climate Observations and Monitoring (COM); and Earth's Radiation Budget (ERB). ESSM programs fund numerous projects in 32 states, each with a goal of understanding and predicting changes in climate, weather, oceans, and coasts.

Office of the Chief Administrative Officer (OCAO) - Headquarters

The Office of the Chief Administrative Officer (CAO) provides comprehensive, NOAA-wide technical, programmatic guidance and staff support to the Office of the Under Secretary in the areas of: facilities Management, including real estate (lease management, real property acquisitions), and construction project planning, design and engineering; logistics Management, including personal property, transportation, supply chain and building management; *Freedom of Information Act*, competitive sourcing guidance, OIG/GAO liaison; Safety and Environmental Compliance programs; Civil Rights and Equal Employment Opportunity programs; NOAA Deemed Export program; and Directives and Records Management.

Office of the Chief Information Officer (OCIO) - <u>Headquarters</u>

The NOAA Office of the Chief Information Officer (OCIO) ensures that NOAA's programs make full and appropriate use of information technology. The NOAA OCIO oversees the expenditure of approximately \$1 billion each year in information technology (IT) spending alone - computer hardware, software, services, networking, and telecommunications. Its focus includes high performance computing and communications, cyber security, homeland security, radio frequency management, and service delivery. NOAA is constantly adopting improved means to manage and deliver data and information to citizens and businesses regarding weather and water forecasts, search and rescue, climate change, environmental images, coastal maps, and ecosystems management. The OCIO manages and provides enterprise-wide services to NOAA, enabling Line Offices to focus on their core missions. The OCIO also manages NOAA's implementation of the Federal Information Technology Acquisition Reform Act, which enhances the authority of the federal Chief Information Officer to improve IT efficacy. NOAA OCIO and its Line Office OCIOs are key partners with NOAA to meet NOAA missions and strategic goals.

Office of the Federal Coordinator for Meteorological Services and Supporting Research (OFCM) - Headquarters

The Office of the Federal Coordinator for Meteorological Services and Supporting Research (OFCM) is an interdepartmental office established in 1964 in response to Public Law 87-843. The OFCM fosters the effective use of Federal meteorological resources by leading the systematic coordination of operational weather requirements and services, and supporting research, among the Federal agencies. Fifteen Federal departments, agencies, or offices are engaged in meteorological activities and participate in the OFCM's coordinating groups. The Office of Management and Budget and the Office of Science and Technology Policy in the Executive Office of the President also participate in and support the Federal meteorological coordinating infrastructure. In addition to sponsoring this coordinating infrastructure, the OFCM prepares operations plans, conducts studies, and responds to special inquiries and investigations. Current focus areas include supporting interagency development of a strategic plan for coordinating meteorological activities; updating surface observing standards; helping transition previous and ongoing Multifunction Phased Array Radar risk reduction research efforts into the Spectrum Efficient National Surveillance Radar feasibility study; supporting the Space Weather Operations, Research, and Mitigation Subcommittee; planning the 2017 Tropical Cyclone Operations and Research Forum, and establishing new coordination initiatives related to interagency research, the Earth System Prediction Capability initiative, and climate services.

Office of Marine and Aviation Operations (OMAO) - Headquarters

The Office of Marine and Aviation Operations (OMAO) operates a wide variety of specialized aircraft and ships to complete NOAA's environmental and scientific missions. OMAO is also responsible for the administration and implementation of the NOAA Diving Program, Small Boat Program and Aviation Safety Program, to ensure safe and efficient operations in NOAA-sponsored underwater activities and aviation and small boat operations. NOAA's fleet of aircraft operate in some of the world's most remote and demanding flight regimes--over open ocean, mountains, coastal

wetlands, Arctic pack ice, and in and around hurricanes and other severe weather--with an exemplary safety record. NOAA's ship fleet provides hydrographic survey, oceanographic and atmospheric research, and fisheries research vessels to support NOAA's strategic plan elements and mission. The vessels are located in various locations around the United States. NOAA's aircraft and ship fleet is operated and managed by a combination of NOAA Corps Officers, professional mariners, and civilian employees. The aircraft and ship's officers and crew provide mission support and assistance to embarked scientists from various NOAA laboratories as well as the academic community.

NOAA Commissioned Officer Corps (NOAA Corps) - NOAA Corps

The NOAA Commissioned Officer Corps is one of the eight uniformed services of the United States. The service, consisting of approximately 321 commissioned officers, is an integral part of NOAA. The NOAA Corps traces its roots back to the former U.S. Coast and Geodetic Survey, founded in 1807. The NOAA Corps today provides a cadre of professionals trained in engineering, earth sciences, oceanography, meteorology, fisheries science, and other related disciplines. Officers operate ships, fly aircraft, manage research projects, conduct diving operations, and serve in staff positions throughout NOAA.

NOAA Commissioned Officer Corps (NOAA Corps) - Commissioned Personnel Center

The NOAA Commissioned Officer Corps Commissioned Personnel Center (CPC) provides the full spectrum of human resources and career management services to NOAA Corps Officers. The Officer Career Management Division establishes and maintains an appropriate depth and breadth of professional expertise within the NOAA Commissioned Corps to meet the requirements of the agency. It accomplishes this through selective recruiting and training, participation in the assignment process, and career counseling. It directs and supports the activities of the NOAA Corps Officer Training Center (NCOTC). The Personnel Management Division manages officer promotions, awards, records, transfers, appointments, benefits, retirements, evaluation processing, personnel actions and entitlement programs, managing Officers' entire careers from the day they enter Basic Officer Training until retirement and beyond.

Office of Program Planning and Integration (PPI) - Headquarters

The Office Program Planning and Integration (PPI) brings all of NOAA's talent, resources, and capabilities together to meet the needs of national and regional stakeholders in a unified manner. PPI coordinates NOAA's many lines of service with the nation's many needs for environmental information and stewardship. It ensures that agency investments and actions are guided by a strategic plan, are based on sound social and economic analysis, adhere to executive and legislative science, technology and environmental policy, and integrate the full breadth of NOAA's resources, knowledge and talent to meet its mission goals.

Workforce Management Office (WFMO) - Headquarters

The Workforce Management Office (WFMO)provides NOAA-wide leadership to workforce management functions including strategic human capital planning, labor-management, about labor relations, employee relations, performance management, and incentive awards, executive resources, distance learning, leadership development, training and career development, and human resources data management and automation initiatives. The Workforce Management Office employees in the Norfolk Office provide client centric human resources operational support to the National Weather Service's Headquarters and Eastern Region, National Ocean Service, and Office of Oceanic and Atmospheric Research.

Coastal

Office of Oceanic and Atmospheric Research (OAR) - Sustained Carbonate Chemistry Observation Moorings

The Carbonate Chemistry Observing Mooring network is a sustained investment in ocean chemistry observing network in U.S. waters and abroad. There are currently 19 buoys in coastal, open-ocean and coral reef waters that contribute to this network. The time series created from these moorings are key to understanding how ocean chemistry is changing over time in these ecosystems by providing continuous and long-term observations of ocean conditions. These buoys are seated in three locations in Alaska (Gulf of Alaska, Papa, Bering Sea), two in California (California Current Ecosystem 1 & 2), one in the Chesapeake Bay (DE, MD, NY, PA, VA, WV), Coastal Mississippi (MS), Florida (Cheeca Rocks), Georgia (Grays Reef), Oregon (Newport Hydrographic Line), Maine (Gulf of Maine), and Washington (Cha'ba in La Push).

National Marine Fisheries Service (NMFS) - Deep-Sea Coral Research and Technology Program

NOAA's Deep Sea Coral Research is administered by NOAA Fisheries' <u>Office of Habitat Conservation</u>. Mandated by the Magnuson-Stevens Fishery Conservation and Management Act, it is the nation's only federal research program dedicated to increasing scientific understanding of deep-sea coral ecosystems. Deep-sea corals occur off of every coastal state in the country, and create important habitats for countless species, including many fish species. The Program collaborates closely with partners, including other NOAA offices, to study the distribution, abundance, and diversity of deep sea corals and sponges. This work then informs critical management decisions in the waters of the United States and its territories. These decisions enhance the sustainability of deep-sea fisheries and other ocean uses, while conserving deep-sea coral and sponge habitats.

The Program works with partners to complete multi-year regional fieldwork initiatives, as well as smaller projects around the country, centered on integrating new and existing information on these vulnerable and biologically diverse habitats. The first research initiative took place from 2009 to 2011 in the U.S. South Atlantic region and provided valuable information to help decision-makers refine protected area boundaries. To date, the Program has completed one or more initiatives in each region of the United States.

National Marine Fisheries Service (NMFS) - Restoration Center

The NOAA Restoration Center, within the Office of Habitat Conservation, works with partners across the nation to restore habitat to sustain fisheries, recover protected species, and maintain resilient coastal ecosystems and communities. We have over 30 years conducting habitat restoration through competitive funding opportunities and technical assistance. We also work to reverse habitat damage from disasters like oil spills, ship groundings, and severe storms. In Maryland, the Restoration Center provides funding and technical guidance to restore coastal habitat in Maryland and nationwide. Recently, they provided funding for the removal of Bloede Dam and for engineering design to remove the Daniels Dam on Maryland's Patapsco River, part of a larger effort with partner American Rivers to restore more than 65 miles of spawning habitat for blueback herring, alewife, and American shad, and more than 1800 miles for American eel, ensuring sustainable populations of these target species. Two other dams on the Patapsco River (Simkins and Union Dams) were also removed in 2010 as part of this effort. See the interactive <u>Restoration Atlas</u> to find habitat restoration projects near you. Site visits to see habitat projects may be available in your state, please inquire if interested.

National Marine Fisheries Service (NMFS) - Cooperation with States Program and Species Recovery Grants

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. A total of 25 U.S. territories and coastal states, including Maryland, currently participate in this program. 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. The Maryland Department of NaturalResources has received multiple awards through this program, including grants to support projects focused on Atlantic sturgeon, shortnose sturgeon, and sea turtles.

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, monitor 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 are two stranding network members in the state. NOAA Fisheries funds eligible members of the Stranding Network through the competitive John H. Prescott Marine Mammal Rescue Assistance Grant Program. For fiscal year 2020, 43 competitive Prescott Grants were awarded totaling \$3.7 million nationwide, with one award for \$62,239 going to one recipient in Maryland: Maryland Department of Natural Resources.

National Ocean Service (NOS) – Bipartisan Infrastructure Law

The Bipartisan Infrastructure Law is helping coastal communities build the future they want to see. The legislation provides a historic investment in coastal protection and restoration that will increase community resilience to climate change and extreme weather events, and improve how we manage our ocean resources. Projects funded under this law protect and restore ecologically significant habitats, including conserving lands that play a critical role in helping communities become more resilient to natural hazards. Maryland received funding for one project in FY22, as well as funds to build the state's capacity to protect its coastal communities and resources.

National Ocean Service (NOS) - Navigation Manager

NOAA's navigation managers work directly with pilots, port authorities, and recreational boating organizations in the mid-Atlantic region. They help identify the navigational challenges facing marine transportation in Maryland 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 Silver Spring, MD to support mariners and stakeholders in the Chesapeake and Delaware Bay region.

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

The National Ocean Service (NOS) operates six long-term continuously operating tide stations in the state of Maryland, 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 Ocean City Inlet, Cambridge, Bishops Head, Baltimore, Annapolis and Solomon's 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. Station data feeds into many

CO-OPS products that are used to support safe navigation, mitigate coastal hazards, and protect communities. Such products include:

- Coastal Inundation Dashboard view water levels in real-time and during storms
- High Tide Flooding Outlooks
- Sea level trends and maps
- Real-time current measurements
- Hydrodynamic models
- Tidal and water level datums

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. Subject to availability of funding, 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. Since 2002, the program has protected more than 110,000 acres of coastal land nationally, including over 16,000 acres protected as in-kind matching contributions. Six projects were successfully completed in Maryland, 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 Maryland Department of Natural Resources to implement the National Coastal Zone Management Program in Maryland. 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) – Digital Coast

The Digital Coast is a focused information resource developed to meet the unique needs of coastal communities. Developed and maintained by NOAA's Office for Coastal Management, content comes from hundreds of organizations, including federal, state, and local agencies, plus private sector and non-profit contributors. The Digital Coast website provides not only site-specific coastal data, but also related tools, training, and information needed to make these data useful for coastal decision makers. The Digital Coast Act authorizes the Digital Coast as a standing national program and supports NOAA's efforts to increase access to authoritative data, tools, and training that enable coastal communities to plan for long-term resilience, manage water resources, and respond to emergencies.

National Ocean Service (NOS) – Digital Coast Fellowship

This program matches postgraduate students with members of the Digital Coast Partnership to work on two-year projects proposed by the partner organization. The Nature Conservancy, in partnership with Maryland Department of Natural Resources, is hosting a fellow from 2022-2024 to reform marsh protection activities and promote marsh migration and community resilience in Maryland.

National Ocean Service (NOS) – National Coastal Resilience Fund

The National Coastal Resilience Fund is a partnership effort between NOAA and the National Fish and Wildlife Foundation (NFWF) to restore, increase, and strengthen natural infrastructure to protect coastal communities, while also

enhancing habitat for fish and wildlife. In Maryland, the NCRF has awarded six projects, one in FY20, one in FY21, and four in FY22.

National Ocean Service (NOS) – Emergency Coastal Resilience Fund

The Emergency Coastal Resilience Fund is a partnership effort between NOAA and the National Fish and Wildlife Foundation (NFWF) to increase the resilience of coastal communities within federally-declared disaster areas impacted by hurricanes and wildfires in 2018, 2020, and 2021. In Maryland, the ECRF awarded a project in 2021.

National Ocean Service (NOS) - Mid-Atlantic Committee on the Ocean

The Mid-Atlantic Committee on the Ocean (MACO) is a committee established by the <u>Mid-Atlantic Regional Council for</u> the Ocean (MARCO) to foster collaboration among states, federal agencies, the Mid-Atlantic Fishery Management Council, and federally recognized tribes to enhance the vitality of the region's ocean ecosystem and economy through increased communication and collaboration. To maintain quality constituent service, staff from NOAA Office for Coastal Management lead NOAA's engagement with MACO, MARCO and state coastal management programs to improve the delivery of NOAA products and services in this region. With funding provided through the Bipartisan Infrastructure Law, NOAA will invest approximately \$56 million over five years to enhance and support the priorities of established regional ocean partnerships, including coordinating interstate and intertribal management of ocean and coastal management issues, and enhancing sharing and integration of data.

National Ocean Service (NOS) - OR&R Preparedness, Response, and Restoration Coordinators

NOAA's Office of Response and Restoration (OR&R) is a center of expertise in preparing for, evaluating, and responding to threats to coastal environments, including oil and chemical spills, releases from hazardous waste sites, disasters, and marine debris. To fulfill its mission of protecting and restoring NOAA trust resources, OR&R provides scientific and technical support to prepare for and respond to environmental threats that coastal communities face; determines damage to natural resources from those releases; protects and restores marine and coastal ecosystems; and works with coastal communities to address critical local and regional coastal challenges.

Eleven regionally based **Scientific Support Coordinators (SSC)** harness the input of a multi-disciplinary team to address issues such as oil slick trajectory forecasting, environmental trade offs, best practices, resources at risk, and chemical hazard assessment to reduce risks to coastal habitats and resources. The SSC for Maryland is based in Point Pleasant, New Jersey at the USCG Station Manasquan.

OR&R identifies and quantifies environmental injury caused by releases of oil and hazardous materials. Our network of **Regional Resource Coordinators** work with multidisciplinary scientific, economic, and legal teams with the goal of securing the appropriate amount and type of restoration required to restore injured NOAA trust resources and compensate the public for their lost use. We collaborate with NMFS Restoration Center and NOAA General Council through the Damage Assessment, Remediation, and Restoration Program (DARRP) to ensure the process is efficient, legally defensible and restoration focused. The RRCs serving the Northeast/Great Lakes region are based in Boston, Massachusetts and New York, New York.

National Ocean Service (NOS) - OR&R <u>Atlantic Environmental Response Management Application</u> and <u>Response</u> <u>Tools for Oil and Chemical Spills</u>

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 ship locations, weather, and ocean currents, providing an easy-to-use common operating picture for environmental responders and decision makers. ERMA staff continued to work closely with Federal and State agencies for drills, hurricane response, and incidents. Maintained habitat data for sensitive species. Ensured data was kept up-to-date and data collection methods were kept consistent. In addition to ERMA, the Office of Response and Restoration (OR&R) offers a suite of tools to support emergency responders dealing with oil and chemical spills. From Environmental Sensitivity Index (ESI) maps and data which provide concise summaries of coastal resources including biological resources and sensitive shorelines to GNOME, a trajectory and fate model that predicts the route and weathering of pollutants spilled on water, and so much more, these tools provide easy-access to critical data that support a wide range of needs for emergency responders, ultimately supporting our coastal communities.

National Ocean Service (NOS) - Marine Debris Projects and Partnerships in Maryland

The NOAA Marine Debris Program (MDP) in the Office of Response and Restoration (OR&R) leads national and international efforts to reduce the impacts of marine debris. The program supports marine debris removal, prevention, and research projects in partnership with state and local agencies, tribes, non-governmental organizations, academia, and industry. The MDP Mid-Atlantic Regional Coordinator, based in Silver Spring, supports coordination efforts with regional stakeholders, provides support to grant-funded projects, tracks progress of projects, and conducts regional marine debris outreach to local audiences. The MDP also works with local communities and organizations to remove and research marine debris. The University of Maryland Center for Environmental Science is examining the role marshes and underwater plant life have in determining what happens to plastic debris as it moves down the Choptank River. The Mid-Atlantic Marine Debris Action Plan, covering Maryland, the District of Columbia, Delaware, Virginia, New Jersey, and New York, was published in 2021. This plan is facilitated by the MDP with the participation of 96 organizations. The plan establishes a road map for strategic progress in making the Mid-Atlantic, its coasts, people, and wildlife free from the impacts of marine debris. The MDP continues to work with state and local governments, and other stakeholders, to develop and implement the Maryland Marine Debris Emergency Response Guide.

National Ocean Service (NOS) - <u>U.S. Integrated Ocean Observing System</u> (<u>Mid-Atlantic Regional Association</u> <u>Coastal Ocean Observing System</u>)

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 eleven U.S. IOOS Regional Associations in the United States focused on ocean observing. Our region extends from Cape Hatteras to Cape Cod and includes all 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.

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 North Atlantic right whales, leatherback, loggerhead, and 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 core functions of these programs include coordinating volunteer networks to: respond to entanglements and strandings, investigate mortality events, and conduct biomonitoring, tissue/serum banking, and analytical quality assurance. The Office also fosters sustainable <u>aquaculture</u> in the region, with two Regional Aquaculture Coordinators that act as a liaison between federal and state agencies to assist in permitting and coordination activities, supporting aquaculture outreach and education, and collaborating with industry, academia and other stakeholders on regional marine aquaculture issues.

The Northeast 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, 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 Fisheries Regional 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) - <u>Chesapeake Bay Watershed Education and Training Program</u> The NOAA Bay Watershed Education and Training (B-WET) program is an environmental education program that promotes locally relevant, experiential learning in the K-12 environment. The <u>NOAA Chesapeake Bay Office</u>, a division of NOAA Fisheries' <u>Office of Habitat Conservation</u>, administers B-WET grants for the Chesapeake Bay watershed on behalf of the NOAA Office of Education. The primary delivery of B-WET is through competitive funding that promotes systemic Meaningful Watershed Educational Experiences. The Chesapeake B-WET program recognizes that knowledge and commitment built from firsthand experience, especially in the context of one's community and culture, is essential for achieving environmental stewardship. Chesapeake B-WET responds to regional education and environmental priorities through local implementation of competitive grant funds and is supportive of partnerships between school districts and community organizations and institutions that are run by and/or serve marginalized groups, particularly minority communities.

National Marine Fisheries Service (NMFS), and National Ocean Service (NOS), and NOAA General Counsel -Damage Assessment, Remediation, and Restoration Program

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 funding from responsible parties 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. Maryland is a co-trustee with NOAA for assessment and restoration after pollution incidents in Maryland. For more information about our work in Maryland, visit: <u>DARRP in Your State</u> (and use the top menu to navigate to "Maryland & Washington, D.C.") and this <u>interactive map</u>.

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 Raleigh, North Carolina serving the Mid-Atlantic region including Maryland. 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 Ocean Service (NOS) - Coastal Management Fellowship

The NOAA Coastal Management Fellowship matches postgraduate students with state and territory coastal zone programs to work on two-year projects proposed by the state or territory. The Maryland Coastal Management Program is hosting a fellow from 2022-2024 who is working with them and the Fishing and Boating Services unit to advance work on climate adaptation priorities related to fisheries management and natural resources-based economies.

National Ocean Service (NOS) - Phytoplankton Monitoring Network

The Phytoplankton Monitoring Network (PMN) is a nationwide community-based volunteer program of citizen scientists monitoring for the presence of organisms that can lead to Harmful Algal Bloom (HAB) formation. Volunteers serve as data collectors for marine and freshwater blooms at more than 200 coastal and inland sites in the U.S. and Caribbean. Monitoring is conducted year-round and volunteers are trained to measure salinity, air and water temperatures, and how to collect phytoplankton samples using a plankton net. Samples are then analyzed for any HAB organisms via microscopy. Data collected by PMN volunteers enhances the Nation's ability to respond to and manage the growing

threat posed by HABs by collecting important data for species composition and distribution in coastal and freshwater environments and creating working relationships between volunteers and professional marine biotoxin researchers. Event monitoring can assist state and federal agencies to issue timely warnings about shellfish consumption and other public health concerns.

National Ocean Service (NOS) - Aquaculture Phytoplankton Monitoring Network

The Aquaculture Phytoplankton Monitoring Network (AQPMN) is a volunteer-based network that works with coastal US aquaculture farms and organizations. The network has adapted its protocols to specifically monitor for species known to have adverse effects on shellfish and finfish aquaculture. Participating hatcheries and growers receive training on methods to collect and identify local phytoplankton and potential HAB species. NOAA supplies each network member with plankton nets, thermometers, salt refractometers and digital microscopes free of charge.

National Ocean Service (NOS) - Mussel Watch Program

The National Oceanic and Atmospheric Administration (NOAA) Mussel Watch Program (MWP) monitors the status and trends of chemical contaminants and biological stressors in the nation's coastal waters. MWP began in 1986, and is based on the periodic collection and analysis of bivalves (oysters and mussels) and sediment from a network of more than 300 monitoring sites nationwide. Contaminants monitored at each site include the EPA's Priority Pollutant List of toxic substances and a suite of chemicals of emerging concern such as flame retardants, PFAS, pharmaceuticals, and current use pesticides.

National Ocean Service (NOS) - Ocean Guardian School Program

An Ocean Guardian School makes a commitment to the protection and conservation of its local watersheds, the world's ocean, and special ocean areas, like national marine sanctuaries. Funds are provided to schools at \$4,000 per year if the school makes this commitment by proposing and then implementing a school- or community-based conservation project. Once the school has completed its project, the school receives official recognition as a NOAA Ocean Guardian School. To date, the Ocean Guardian School Program has reached more than 88,700 students and 3,500 teachers.

National Ocean Service (NOS) - Students for Zero Waste Week

Students are inviting their local communities to "Go Green and Think Blue" by joining them in the annual *Students for Zero Waste Week campaign*. During this campaign led by the Office of National Marine Sanctuaries, students focus on reducing land-based waste in order to protect the health of local marine environments. These young leaders are raising awareness of how single-use plastic and other types of litter affect the health of local watersheds, national marine sanctuaries, and the ocean. In addition, some schools are looking at ways to reduce their energy use on campus with hopes of raising awareness of how the burning of fossil fuels also impacts the health of the ocean.

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 six ASOS stations in Maryland.

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 42 COOP sites in Maryland.

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 four NWR transmitters in Maryland.

Office of Oceanic and Atmospheric Research (OAR) – Maryland Sea Grant College Program

The National Sea Grant College Program (Sea Grant) is a federal-university partnership administered by NOAA that integrates research, extension outreach, and education. Sea Grant forms a national network of 34 programs in all U.S. coastal and Great Lakes states, Puerto Rico, and Guam. Headquartered adjacent to the University of Maryland's College Park campus, Maryland Sea Grant supports a statewide program of research, education, and extension services that promote the wise use of our coastal and marine resources with a strong ethic of stewardship. We work closely with our stakeholders to improve understanding of coastal ecosystem health and economics and to help inform decision makers and the public. Our research program focuses on critical issues facing the Chesapeake and coastal bays including water quality, nutrient dynamics, harmful algal blooms, and aquatic invasive species. The research we fund also addresses the challenges of restoring submerged aquatic vegetation and degraded streams and improving ecosystem based fisheries management. We work from the local to regional scale and often support efforts with national and global significance. Through active communications and extension efforts, Maryland Sea Grant informs industry, policy makers, and the public on many issues including aquaculture; commercial and recreational fishing; natural resources conservation and biodiversity; and seafood processing and marketing. We actively support environmental literacy and education by funding graduate and undergraduate research fellows and through ongoing collaborations with public high schools and middle

schools. We promote efforts to improve Maryland's coastal resiliency through better understanding of the effects of coastal flooding, sea level rise, and climate change on threatened communities and ecosystems. We produce communications materials for a variety of audiences including award-winning videos; a magazine, Chesapeake Quarterly; web-based information; and educational activities. Our external advisory council of coastal community leaders provides guidance for our program's activities and strategic goals, which align with those of NOAA. Administrative offices are located in College Park. Extension agents are located in Cambridge, Queenstown, Cockeysville, Derwood, Upper Marlboro, Baltimore, Princess Anne, Clinton, St. Leonard, and Orono. Get involved with Sea Grant through state and national opportunities like the John A. Knauss Marine Policy Fellowship program at <u>seagrant.noaa.gov</u>.

NOAA Commissioned Officer Corps (NOAA Corps) - Leadership, Staff Support, and Operations

The NOAA Commissioned Officer Corps stations multiple officers in the State of Maryland in addition to those present at its headquarters in Silver Spring. These officers perform a variety of duties, including serving as technical specialists and vessel operations coordinators in Annapolis; in Suitland, serving as joint command technology officer with the USCG and US Navy, as well as Technical Director of the Office of Satellite and Product Operations; in College Park, serving as Ocean Prediction Center Operations Coordinator and local outreach and education officer, as well as Executive Officer for the Satellite Products and Services Division; and in Solomons, serving as OIC for the R/V *Bay Hydro II*, performing necessary navigation response surveys in the Chesapeake Bay.

NOAA In Your State is managed by <u>NOAA's Office of Legislative and Intergovernmental Affairs</u> and maintained with information provided by NOAA's Line and Staff Offices. Questions about specific programs or offices should be directed to the NOAA Line or Staff Office listed.

More information for those offices may be found at NOAA.gov.