

## *NOAA In Your State*

# **Texas**

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

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

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### **TX**

#### **Statewide**

##### **National Marine Fisheries Service (NMFS) – [Aquaculture Coordinator](#)**

The aquaculture coordinator leads regional efforts in the Gulf of Mexico, South Atlantic and U.S. Caribbean to foster sustainable marine aquaculture. The coordinator acts as a liaison between federal and state agencies to assist in permitting and coordination activities, support aquaculture outreach and education and is the point of contact for industry, academia and other stakeholders for regional marine aquaculture issues. The Southeast Region has a growing commercial marine aquaculture industry with a strong shellfish sector, as well as shrimp and finfish production. The Southeast Region is also the only comprehensive regulatory program for offshore aquaculture in federal waters, although other regions (e.g., the Western Pacific) are working to institute similar programs.

##### **National Marine Fisheries Service (NMFS) - [Bay-Watershed Education and Training Program](#)**

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 primary delivery of B-WET is through competitive funding that promotes Meaningful Watershed Educational Experiences (MWEEs). B-WET currently serves seven areas of the country: California, Chesapeake Bay, Great Lakes, Gulf of Mexico, Hawai'i, New England, and the Pacific Northwest. The Gulf of Mexico 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. Gulf of Mexico B-WET responds to regional education and environmental priorities through local implementation of competitive grant funds. Please see the regional funding opportunity for priorities and eligibility details.

**National Marine Fisheries Service (NMFS) - [Southeast Regional Office](#) and [Southeast Fisheries Science Center](#)**

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

The Southeast Regional Office Field Office, stationed in Galveston, conducts mandated essential fish habitat consultations associated with extensive energy and coastal development activities, participates in state and regional habitat planning and restoration efforts, provides assistance during hazardous material incidents and hurricane events, and participates in the planning processes for major federal water development projects. The Southeast Fisheries Science Center implements a multi-disciplinary science and research program in support of living marine resource management. The Science Center develops the scientific information required for fishery resource conservation; fishery development and utilization; habitat conservation; the protection of marine mammals, sea turtles and other protected species; impact analyses and environmental assessments for management plans and/or international negotiations; and pursues research to answer specific needs in areas of population dynamics, fishery economics, fishery engineering, food science, and fishery biology. The Science Center has a laboratory located in Galveston, Texas.

**National Marine Fisheries Service (NMFS) and National Ocean Service (NOS) - [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 \$10.4 billion for restoration of critical habitats, fisheries, protected species and recreational uses nationwide. These projects promote recovery of the ecosystem and provide economic benefits from tourism, recreation, green jobs, coastal resiliency, property values and quality of life. In Texas, the Program is currently working to restore natural resources in numerous cases including the Deepwater Horizon oil spill and the Texas City Y hazardous waste site.

**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 Corpus Christi, Texas serving the Southern Plains region – Texas and Oklahoma. The Geodetic Advisor provides training, guidance and assistance to constituents managing geospatial activities that are tied to the National Spatial Reference System (NSRS), the framework and coordinate system for all positioning activities in the Nation. The Geodetic Advisor serves as a subject matter expert in geodesy and regional geodetic issues, collaborating internally across NOS and NOAA to ensure that all regional geospatial activities are properly referenced to the NSRS.

### **National Weather Service (NWS) - [Automated Surface Observing Systems Stations](#)**

The Automated Surface Observing Systems (ASOS) program is a joint effort of the National Weather Service (NWS), the Federal Aviation Administration (FAA), and the Department of Defense (DOD). ASOS serves as the Nation's primary surface weather observing network. ASOS is designed to support weather forecast activities and aviation operations and, at the same time, support the needs of the meteorological, hydrological, and climatological research communities. ASOS works non-stop, updating observations every minute, 24 hours a day, every day of the year observing basic weather elements, such as cloud cover, precipitation, wind, sea level pressure, and conditions, such as rain, snow, freezing rain, thunderstorms, and fog. There are 71 ASOS stations in Texas.

### **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 634 COOP sites in Texas.

### **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 oil spills), and public safety. NWR is provided as a public service by the NWS and includes 1,100 transmitters covering all 50 states, adjacent coastal waters, Puerto Rico, the U.S. Virgin Islands, and the U.S. Pacific Territories. There are 75 NWR transmitters in Texas.

### **National Weather Service (NWS) - [Incident Meteorologists](#)**

The NWS, as mandated by Congress, provides fire weather forecast products and services to the fire and land management community for the protection of life and property, promotion of firefighter safety, and stewardship of America's public wildlands. Since 1927, this effort has included providing critical on-scene support to wildfire managers via specially-trained NWS forecasters called Incident Meteorologists (IMETs). When a fire reaches a large enough size, IMETs are rapidly deployed to the incident and set-up a mobile weather center to provide constant weather updates and forecast briefings to the fire incident commanders. IMETs are very important members of the firefighting team, as changes in the fires are largely due to changes in the weather.

### **Office of Oceanic and Atmospheric Research (OAR) – [Texas Sea Grant College Program](#)**

NOAA's National Sea Grant College Program is a federal-university partnership that integrates research, education and outreach. Sea Grant forms a network of 33 programs in all U.S. coastal and Great Lakes states, Puerto Rico, and Guam. Headquartered in the College of Geosciences at Texas A&M University in College Station, the Texas Sea Grant College Program has a statewide mission to support healthy coastal ecosystems and resilient communities and economies, and to develop the Texas workforce. Its extension agents and specialists are located along the coast from Beaumont to Brownsville, where they conduct outreach, education and technology transfer to a wide range of stakeholders in coastal communities and in the industries that depend upon Texas' marine and coastal environment. Texas Sea Grant also funds practical research by scientists at research institutions around the state to create knowledge, tools, products and services that benefit the economy, the environment and people of Texas.

### ***Coastal***

#### **National Marine Fisheries Service (NMFS) - [Restoration Center](#)**

The NOAA Restoration Center, within the Office of Habitat Conservation, works with private and public partners locally and nationwide to increase fisheries productivity by restoring coastal habitat. Our projects support sustainable fisheries, help recover threatened and endangered species, and reverse damage from disasters like oil spills, ship groundings, and severe storms. Since 1992, we have provided more than \$750 million to implement more 3,300 coastal habitat restoration projects. The Restoration Center works with private and public partners in Texas to restore mangrove forests, oyster bars, and submerged aquatic vegetation beds; remove invasive species; improve storm water management; establish wetland buffers; and restore historic tidal flow to degraded sites. Almost 100 projects have been constructed in the state since 2000, with more than 18,000 acres of fisheries habitat restored and or protected through the Community-based Restoration Program. Through the Damage Assessment Remediation and Restoration Program, the Restoration Center also collaborates with other agencies, industry, and citizens to protect and restore coastal and marine resources in Texas threatened or injured by oil spills, releases of hazardous substances, and vessel groundings. The Restoration Center is deeply engaged in the coordination of projects through RESTORE, Natural Resource Damage Assessment, and the Gulf Environmental Benefit Fund as a result of the Deepwater Horizon oil spill. NOAA led the natural resource damage assessment restoration planning for the Deepwater Horizon oil spill. Restoration efforts will focus on 13 restoration types and 7 restoration areas to address a broad range of impacts across the Gulf of Mexico.

#### **National Marine Fisheries Service (NMFS) - [Deep-Sea Coral Research and Technology Program](#)**

NOAA's Deep Sea Coral Research and Technology Program is the only federal program dedicated to mapping, characterizing, and understanding deep-sea coral ecosystems, and sharing the information needed to conserve these habitats. The Program -- called for in the reauthorization of the Magnuson-Stevens Fishery Conservation and Management Act -- is working with other NOAA offices and external partners to conduct fieldwork to study the distribution, abundance, and diversity of deep sea corals and sponges. Since 2009, more than 42,500 square miles of seafloor have been mapped and surveyed for deep-sea coral habitats from Florida to Maine, in Alaska and the West Coast, and in Hawaii and the Marianas Trench. In FY 2018, research is being prioritized in two regions -- the southeast (states include VA, NC, SC, FL, AL, MS, LA, TX, and the Caribbean islands) and the west coast (WA, OR, CA).

#### **National Marine Fisheries Service (NMFS) - [Species Recovery Program](#)**

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

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

The National Marine Mammal Stranding Network and its trained professionals respond to dead or live marine mammals in distress that are stranded, entangled, out of habitat or otherwise in peril. Our long-standing partnership with the Network provides valuable environmental intelligence, helping NOAA establish links among the health of marine mammals, coastal ecosystems, and coastal communities as well as develop effective conservation programs for marine mammal populations in the wild. There are three 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. Since 2001, \$53.8 million has been awarded through 617 grants, and recipients have raised over \$17.76 million in matching funds. In FY17, 33 competitive grants were awarded nationwide for a total of \$2.8 million, with one award going to one recipient in Texas: Texas Marine Mammal Stranding Network.

**National Marine Fisheries Service (NMFS) - [Sea Turtle Salvage and Stranding Network](#)**

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

**National Marine Fisheries Service (NMFS) - [Fishery Statistics Office](#)**

Field agents serve as the principal data collection agent for marine fisheries throughout the Southeast United States (NC-TX). They implement and coordinate surveys involving the collection of fishery related data from the public. Responsibilities and functions are to develop, implement, operate, and manage an integrated fishery statistical data acquisition program for research and fishery management. In Texas, field agents are stationed in Galveston, Freeport, and Brownsville.

**National Ocean Service (NOS) - [National Water Level Observation Network](#)**

NOS operates seven long-term, continuously operating tide stations in Texas located at Sabine Pass, Galveston Bay Entrance (North Jetty), Galveston Pier 21, USCG Freeport, Rockport, Corpus Christi, and Port Isabel. The NWLON is supplemented by 25 tide stations that are part of the Texas Coastal Ocean Observation Network (TCOON). Each station is associated with a set of tidal benchmarks installed in the ground that is used to reference the height of the water levels and helps connect the water level to land.

**National Ocean Service (NOS) - [Navigation Manager](#)**

NOAA's navigation managers work directly with pilots, port authorities, and recreational boating organizations in Texas. They help identify the navigational challenges facing marine transportation in Texas 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 Galveston, TX to support mariners and stakeholders in the Western Gulf of Mexico region.

### **National Ocean Service (NOS) - [Sentinel of the Coast Observing Systems](#)**

Two Sentinels in Texas have replaced water level stations that were destroyed or heavily damaged by recent hurricanes. Elevated atop substantial single pile platforms, these stations are specifically designed to withstand Category 4 Hurricanes. Sentinels ensure data is available when most needed, i.e. storm surge from a hurricane is threatening our coastline and their communities. CO-OPS partnered with Texas A&M Division of Nearshore Research and the U.S. Corps of Engineers to establish these new Sentinels. The new Sentinels are located off of Houston-Galveston Bay and Sabine Pass. An additional 4 Sentinels were installed in partnership with the Texas General Land Office, those stations are at Freeport, Matagorda,

### **National Ocean Service (NOS) - [Phytoplankton Monitoring Network](#)**

The Phytoplankton Monitoring Network (PMN) engages volunteers in monitoring for marine phytoplankton and HABs. Data collected by PMN volunteers is used to better understand species composition and distribution in coastal and Great Lakes waters, and to identify areas for further research and monitoring. Through this program, we have alerted managers to previously undetected toxins in commercial shellfish beds, and the potential for human Amnesic Shellfish Poisoning and domoic acid toxicity in marine animals. This year PMN is active along the West Coast from CA to AK, in Lake Erie, in the Gulf of Maine, and the Gulf of Mexico.

### **National Ocean Service (NOS) - [Forecast of Harmful Algal Blooms](#)**

The Harmful Algal Bloom (HAB) Forecast System develops predictions of the transport and potential development of harmful algae conditions that may impact the coastal areas of the Gulf of Mexico. The system focuses on the most common harmful algae in the Gulf of Mexico, which is the microscopic algal species *Karenia brevis*, commonly known as red tide. If a harmful algal bloom is reported and verified in the Gulf of Mexico, reports are issued twice a week; otherwise, information is updated weekly. The HAB Forecasting System relies on satellite imagery, real-time and forecast winds, and field samples to provide information on the location, extent, and movement of HABs.

### **National Ocean Service (NOS) - [Coastal and Estuarine Land Conservation Program](#)**

The Coastal and Estuarine Land Conservation Program brings conservation partners together to protect coastal and estuarine lands considered important for their ecological, conservation, recreational, historical, or aesthetic values. To date the program has protected more than 100,000 acres of land with program funds and over 16,000 acres with an in-kind match. The program provides state and local governments with matching funds to purchase coastal and estuarine lands or obtain conservation easements for important lands threatened by development. Four projects in Texas have been completed, and these lands are protected in perpetuity. Many of the Texas projects conserve floodplain parks along Buffalo Bayou and Brays Bayou in Houston, which served their natural floodplain function during Hurricane Harvey.

### **National Ocean Service (NOS) - [National Coastal Zone Management Program](#)**

Through a unique Federal-state partnership, NOAA's Office for Coastal Management works with the Texas General Land Office to implement the National Coastal Zone Management Program in Texas. NOAA's Office for Coastal Management provides the state coastal management program with financial and technical assistance to further the goals of the Coastal Zone Management Act and ensure our coastal waters and lands are used in a balanced way to support jobs, reduce use conflicts, and sustain natural resources.

**National Ocean Service (NOS) - [Scientific Support Coordinator and Regional Resource Coordinator](#)**

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

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

**National Ocean Service (NOS) – [Gulf of Mexico Environmental Response Management Application](#)**

Assessing important spatial information and designing successful restoration projects rely upon interpreting and mapping geographic information, including the location, duration, and impacts from oil spills, other hazardous materials, or debris released into the environment. Gulf of Mexico Environmental Response Management Application (ERMA<sup>®</sup>) is an online mapping tool that integrates both static and real-time data, such as Environmental Sensitivity Index maps, ship locations, weather, and ocean currents, in a centralized, easy-to-use format for environmental responders and decision makers. Gulf of Mexico ERMA was extensively used during the Deepwater Horizon Oil Spill. Recently, data and bookmark map views were created in response to Hurricanes Harvey and Irma.

**National Ocean Service (NOS) - [Marine Debris Projects and Partnerships](#)**

The NOAA Marine Debris Program (MDP) leads national and international efforts to research, prevent, and reduce the impacts of marine debris. The program supports marine debris removal, education and outreach, and research projects in partnership with state and local agencies, tribes, non-governmental organizations, academia, and industry. In Texas, the MDP is supporting the development of a new educational display and educational programs at a sea turtle education center on South Padre Island and partnering with the Mission-Aransas NERR to conduct monthly shoreline monitoring in the Coastal Bend area. The MDP is also working with state and local governments, and stakeholders, to develop the Texas Marine Debris Emergency Response Guide.

**National Ocean Service (NOS) - [Gulf of Mexico Coastal Ocean Observing System](#)**

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 Gulf of Mexico Coastal Ocean Observing System (GCOOS), one of the 11 IOOS regional coastal ocean observing systems, seeks to establish a sustained observing system for the Gulf of Mexico that will provide observations and products needed by users in the region for the purposes of detecting and predicting climate variability and consequences, preserving and restoring healthy marine ecosystems, ensuring human health, managing resources, facilitating safe and efficient marine transportation, enhancing national security, and predicting and mitigating against coastal hazards.

**National Ocean Service (NOS) – [NOAA RESTORE Science Program](#)**

The mission of NOAA's RESTORE Science Program is to carry out research, observation, and monitoring to support the long-term sustainability of the Gulf of Mexico ecosystem. The Science Program receives 2.5 percent of the Gulf Coast Restoration Trust Fund, which is funded from penalties associated with the Deepwater Horizon Oil Spill. The Science Program uses stakeholder input to design funding competitions that support teams of resource managers and researchers to work collaboratively to address regional needs. The Science Program has an office at the Stennis Space Center.

**National Ocean Service (NOS) and National Marine Fisheries Service (NMFS) – [Coastal Resilience Grant Award](#)**

These grants help coastal communities prepare for and recover from extreme weather events, climate hazards, and changing ocean conditions. The focus is on comprehensive regional approaches that use science-based solutions and rely on collaborative partnerships. This approach expands reach and impact, thereby ensuring maximum success. In Texas, the NOAA Office for Coastal Management awarded two grants that are ongoing in 2018, including: \$867,700 to the Gulf of Mexico Alliance to identify and implement proactive, cost-effective solutions to increase local coastal resilience in 10 communities across Texas, Louisiana, Mississippi, Alabama, and the Gulf coast of Florida; and \$625,000 to the National Association of Counties Research Foundation to help local officials in the Gulf communicate risk and options for addressing impacts of extreme weather and climate-related hazards to their communities.

**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, weather and marine warning and forecast services are provided in real time by taking 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.

## **TX- 5**

### ***Palestine***

#### **National Environmental Satellite, Data, and Information Service (NESDIS) and Office of Oceanic and Atmospheric Research (OAR) - [U.S. Climate Reference Network](#)**

The U.S. Climate Reference Network (USCRN) is an operationally viable research network of 135 climate stations that are deployed nationwide. Data from the USCRN are used in various climate monitoring activities and for placing current climate anomalies into an historical perspective. The USCRN provides the United States with a reference network that contributes to an International network under the auspices of the Global Climate Observing System (GCOS).

## **TX-6**

### ***Brownsville/Dallas/Houston***

#### **National Marine Fisheries Service (NMFS) - NOAA Fisheries Seafood [Inspection Office](#)**

NOAA's Seafood Inspection Program conducts a voluntary inspection program for fishery products on a fee-for-service basis. The office offers a wide range of 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.

## **TX-9**

### ***Sugarland***

#### **Office of Oceanic and Atmospheric Research (OAR) - [Science On a Sphere® at the Houston Museum of Natural History](#)**

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.

#### **NOAA Office of Education - [Environmental Literacy Program](#)**

NOAA's Environmental Literacy Program (ELP), administered by the Office of Education, provides grants and in-kind support to build the capacity of institutions and networks to advance NOAA's mission through formal (K-12) and informal education at national, regional, and local levels. In Texas, ELP supports the Bay Education Center (Rockport), the Houston Museum of Natural Science at Sugarland, and the International Museum of Art and Science (McAllen) all of which have permanent exhibits featuring NOAA's Science On a Sphere and are members of NOAA's SOS Users Collaborative Network. The SOS Network has more than 100 institutions worldwide, reaching over 60 million people, and shares best practices in using the sphere to bring the latest global forecasts and models to the public. ELP supports the Texas State Aquarium (Corpus Christi), a member of the Coastal Ecosystem Learning Center (CELC) Network, a consortium of 25 aquariums and marine science education centers with a reach of over 20 million people. The CELC Network works with NOAA and each member institution to engage the public in protecting coastal and marine ecosystems. ELP also supports the AMS DataStreme courses for K-12 educators through a grant and in-kind support. Local implementation teams in the state offer DataStreme courses that use weather, climate, and the ocean as contexts for teaching science and improving understanding about the Earth system.

## **TX-11**

### **Bronte**

#### **National Environmental Satellite, Data, and Information Service (NESDIS) and Office of Oceanic and Atmospheric Research (OAR) - [U.S. Climate Reference Network](#)**

The U.S. Climate Reference Network (USCRN) is an operationally viable research network of 135 climate stations that are deployed nationwide. Data from the USCRN are used in various climate monitoring activities and for placing current climate anomalies into an historical perspective. The USCRN provides the United States with a reference network that contributes to an International network under the auspices of the Global Climate Observing System (GCOS).

### **Midland/Odessa**

#### **National Ocean Service (NOS) - [Sabine Neches PORTS](#)**

A Physical Oceanographic Real-Time System (PORTS<sup>®</sup>) is operated cooperatively with the local maritime community in Sabine Neches at which real-time data are quality-controlled and disseminated to local users for safe and efficient navigation. Real-time data are available for water level from two stations, for currents from six stations, for meteorological data from one location.

#### **National Weather Service (NWS) - [Weather Forecast Office](#)**

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

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

## ***San Angelo***

### **National Weather Service (NWS) - [Weather Forecast Office](#)**

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

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## ***TX-12***

### ***Fort Worth***

#### **National Weather Service (NWS) - [River Forecast Center](#)**

Co-located with the NWS Weather Forecast Office in Dallas/Fort Worth, the West Gulf River Forecast Center (RFC) performs continuous river basin modeling and provides hydrologic forecast and guidance products for rivers and streams in most of Texas and New Mexico. These products include forecasts of river stage and flow, probabilistic river forecasts, reservoir inflow forecasts, gridded precipitation estimates and forecasts, spring flood outlooks, and flash flood and headwater guidance. Some of the RFCs in the western and central U.S. also provide water supply forecasts. RFCs work closely with local, state and federal water management agencies, including the U.S. Army Corps of Engineers, U.S. Bureau of Reclamation, and U.S. Geological Survey, to provide water and flood information for critical decisions (aka Impact-based Decision-Support Services or IDSS).

#### **National Weather Service (NWS) - [Administrative and Support Center](#)**

The NWS Southern Region Headquarters is the administrative and support center for 32 NWS Weather Forecast Offices, seven aviation-focused Center Weather Service Units, and four River Forecast Centers in 10 states (Texas, New Mexico, Oklahoma, Arkansas, Louisiana, Mississippi, Tennessee, Alabama, Georgia and Florida) and Puerto Rico. Services provided by a regional headquarters to local NWS offices within the region include scientific support and development, program management and guidance, field support for new program implementation, budget support, and employee recruitment and assistance.

**National Environmental Satellite, Data, and Information Service (NESDIS) - [Southern Regional Climate Services Director](#)**

NOAA's six Regional Climate Services Directors (RCSDs), which are part of NCEI, support the development and delivery of a wide range of place-based climate science and information products and services to help people make informed decisions. RCSDs regularly communicate with stakeholders about climate information needs, and help build and strengthen active partner networks with public and private constituents. They play a primary role in integrating the work within NOAA and among its partners engaged in developing and delivering climate services at the regional level. These efforts serve to increase the value of climate information to users and support more efficient, cost-effective delivery of products and services.

**National Weather Service (NWS) - [Weather Forecast Office](#)**

Co-located with the NWS West Gulf River Forecast Center in Dallas/Fort Worth, this NWS Weather Forecast Office (WFO) is staffed around-the-clock every day, and provides the best possible weather, water, and climate forecasts and warnings to residents of north central Texas. Highly trained forecasters issue warnings and forecasts for events, including severe thunderstorms, tornadoes, winter storms, floods, and heat waves. This essential information is provided to the general public, media, emergency management and law enforcement officials, the aviation and marine communities, agricultural interests, businesses, and others. Information is disseminated in many ways, including through dedicated government channels, satellite, the Internet, and NOAA Weather Radio All Hazards.

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

**Office of the Chief Information Officer (OCIO) - [N-Wave Enterprise Network](#)**

Dallas-Fort Worth, TX, is one of five NOAA Trusted Internet Connection Access Points (TICAPs) which monitors the connection of NOAA networks with the greater Internet. This is required by OMB policy to ensure secure communication from NOAA IT systems to untrusted networks. TICAPs are NOAA's first line of defense for protecting NOAA's mission from external cyber-attacks. The information the TICAPs provide is invaluable for determining the nature and scope of cyber threats. NOAA is also able to offer this as a service to other government agencies, eliminating the requirement for them to build and manage their own TICAPs.

**Workforce Management Office (WFMO) - [Fort Worth Office](#)**

The Workforce Management Office in Fort Worth provides nationwide consultative services with respect to talent acquisition and strategic workforce planning to the National Weather Service. The HR Business Partners and HR Business Advisors ensure consistency of service, compliance, best practices and knowledge sharing among the team members. The Office manages the workload and resources to account for peak demand, vacancies and talent acquisitions strategies to meet new mission requirements, and escalates these and other issues as necessary to leadership.

## **TX-13**

### **Amarillo**

#### **National Weather Service (NWS) - [Weather Forecast Office](#)**

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

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

### **Edinburgh**

#### **National Environmental Satellite, Data, and Information Service (NESDIS) and Office of Oceanic and Atmospheric Research (OAR) - [U.S. Climate Reference Network](#)**

The U.S. Climate Reference Network (USCRN) is an operationally viable research network of 135 climate stations that are deployed nationwide. Data from the USCRN are used in various climate monitoring activities and for placing current climate anomalies into an historical perspective. The USCRN provides the United States with a reference network that contributes to an International network under the auspices of the Global Climate Observing System (GCOS).

## **TX-14**

### **Galveston**

#### **National Marine Fisheries Service (NMFS) - [Galveston Laboratory](#)**

The Galveston Laboratory is located on the site of Fort Crockett, a NOAA Heritage Asset, one block from the Gulf of Mexico on Galveston Island, Texas. Research at the Laboratory focuses on fisheries management (data collection and analysis pertaining to shrimp and reef fish fisheries), fishery ecology (coastal wetland ecology, coral reef ecology, and habitat restoration science), forecasts of the Texas and Louisiana shrimp fishery, and evaluation of shrimp fishery impacts on other fisheries and protected species. Research on sea turtle ecology and recovery is also conducted at Galveston. The lab has been working with the endangered Kemp's Ridley sea turtle since 1978 and it is the only federal facility in the United States dedicated to captive rearing of sea turtles for research purposes. The fishery observer programs, originally developed to provide an economic evaluation of turtle excluder devices in shrimp trawls, currently encompasses shrimp trawl and reef fish bottom longline and vertical line vessels. A state trip ticket collection system, supported by a federal port agent data collection system established in 1960, provides the fishery dependent data needed for the shrimp stock assessments done at the Laboratory.

### **National Marine Fisheries Service (NMFS) - [Habitat Conservation Division Field Office](#)**

The Southeast Regional Office has the Galveston Field Office which is located in the Galveston Laboratory of NMFS Southeast Fisheries Science Center. This Office is responsible for overseeing NMFS's habitat protection programs in the Gulf of Mexico and implements NMFS's habitat protection programs in Texas and Alabama and in the adjacent waters of the Gulf of Mexico. In addition to conducting mandated essential fish habitat consultations associated with extensive energy and coastal development activities, the Office participates in state and regional habitat planning groups focusing on technical assistance and streamlining Gulf environmental compliance efforts for proposed Gulf restoration projects, and participates in the planning processes for major federal water development projects in Texas and Alabama, such as port expansions and flood damage control structures.

### **National Marine Fisheries Service (NMFS) - [Office of Law Enforcement](#)**

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

### **National Ocean Service (NOS) – [Navigation Response Team](#)**

NOAA's Navigation Response Team 4 operates out of Galveston, supporting navigation in the ports in the western Gulf of Mexico primarily. These three-person teams measure depths of a changing seafloor and search for underwater dangers to navigation that can slow down commercial shipping immediately after storm events and other emergencies. The teams provide time-sensitive information to the U.S. Coast Guard or port officials and transmit data to NOAA cartographers for updating navigational charting products.

### **National Ocean Service (NOS) - [Flower Garden Banks National Marine Sanctuary](#)**

Flower Garden Banks National Marine Sanctuary lies primarily 115 miles off the coast of Texas and Louisiana in the Gulf of Mexico. It contains the northernmost coral reefs on the continental shelf of North America, sitting atop salt domes 55 to 450 feet below the water's surface. Unique in this part of the Gulf, the multi-colored corals, plants and sponges at the Flower Garden Banks sanctuary resemble reef development typically found over 400 miles due south in Mexico's Gulf of Campeche or 790 miles southeast in the Florida Keys. A popular destination for scuba divers, commercial and sport fishers, the reefs serve as a regional reservoir of shallow water Caribbean reef fishes and invertebrates. The Gardens are significant habitat for lobster, snapper, grouper, manta rays, loggerhead and hawksbill turtles and whale sharks. They are managed out of Galveston, Texas where a variety of research and education programs, many through partnerships, are key to maintaining this valuable resource.

Staff continues to monitor the health of the reefs, including a localized mortality event and recovery from a broader coral bleaching event that both happened in 2016. No immediate negative impacts on the reefs from Hurricane Harvey were observed, although staff are keeping a close eye on the situation as freshwater moves out into offshore waters. Invasive lionfish continue to be the subject of a strong research/education focus at the sanctuary.

**National Ocean Service (NOS) – [“REEF ON THE ROAD” traveling exhibit](#)**

Those unable to visit these remote reefs in person, can interact with Flower Garden Banks National Marine Sanctuary’s Reef on the Road traveling exhibit that moves to a new location every six to twelve months.

**National Weather Service (NWS) - [Weather Forecast Office](#)**

Co-located at the Galveston Emergency Operations Center, this NWS Weather Forecast Office (WFO) is staffed around-the-clock every day, and provides the best possible weather, water, and climate forecasts and warnings to residents of southeastern Texas. Highly trained forecasters issue warnings and forecasts for events, including severe thunderstorms, tornadoes, winter storms, floods, and heat waves. This essential information is provided to the general public, media, emergency management and law enforcement officials, the aviation and marine communities, agricultural interests, businesses, and others. Information is disseminated in many ways, including through dedicated government channels, satellite, the Internet, and NOAA Weather Radio All Hazards. Forecasters also provide Impact-based Decision-Support Services (IDSS), both remotely and on-site, during critical emergencies, such as wildfires, floods, chemical spills, and for major recovery efforts such as those following the Joplin and Moore tornadoes, Hurricanes Katrina and Sandy, and the Sept. 11, 2001, terrorist attacks in New York City and Washington D.C. The WFO collects and disseminates precipitation, river, and rainfall data, and prepares local climatological data. Each WFO has a Warning Coordination Meteorologist who actively conducts outreach and educational programs, which helps build strong working relationships with local partners in emergency management, government, the media and academic communities. The WFO operates Automated Surface Observing Stations (ASOS), as well as the local Doppler Weather Radar, which provides critical information about current weather conditions. The radar data enables forecasters to issue warnings for tornadoes, severe thunderstorms, and flash floods.

***TX-14, 18***

***Galveston/Houston***

**National Ocean Service (NOS) - [Houston/Galveston PORTS®](#)**

A Physical Oceanographic Real-Time System (PORTS®) is operated cooperatively with the local maritime community in Houston/Galveston Bay at which real-time data are quality-controlled and disseminated to local users for safe and efficient navigation. Real-time data are available for water level from four stations, for currents from two stations, for meteorological data from four locations and for conductivity at two locations.

***TX-15***

***Austin/San Antonio***

**National Weather Service (NWS) - [Weather Forecast Office](#)**

Located at the New Braunfels Municipal Airport, this NWS Weather Forecast Office (WFO) is staffed around-the-clock every day, and provides the best possible weather, water, and climate forecasts and warnings to residents of south central Texas. Highly trained forecasters issue warnings and forecasts for events, including severe thunderstorms, tornadoes, winter storms, floods, and heat waves. This essential information is provided to the general public, media, emergency management and law enforcement officials, the aviation and marine communities, agricultural interests, businesses, and others. Information is disseminated in many ways, including through dedicated government channels, satellite, the Internet, and NOAA Weather Radio All Hazards.

Forecasters also provide Impact-based Decision-Support Services (IDSS), both remotely and on-site, during critical emergencies, such as wildfires, floods, chemical spills, and for major recovery efforts. The WFO collects and disseminates precipitation, river, and rainfall data, and prepares local climatological data. Each WFO has a Warning Coordination Meteorologist who actively conducts outreach and educational programs, which helps build strong working relationships with local partners in emergency management, government, the media and academic communities. The

WFO operates Automated Surface Observing Stations (ASOS), as well as the local Doppler Weather Radar, which provides critical information about current weather conditions. The radar data enables forecasters to issue warnings for tornadoes, severe thunderstorms, and flash floods.

#### ***McAllen***

#### **Office of Oceanic and Atmospheric Research (OAR) - [Science On a Sphere® at the International Museum of Art and Science](#)**

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.

#### **NOAA Office of Education - [Environmental Literacy Program](#)**

NOAA's Environmental Literacy Program (ELP), administered by the Office of Education, provides grants and in-kind support to build the capacity of institutions and networks to advance NOAA's mission through formal (K-12) and informal education at national, regional, and local levels. In Texas, ELP supports the Bay Education Center (Rockport), the Houston Museum of Natural Science at Sugarland, and the International Museum of Art and Science (McAllen) all of which have permanent exhibits featuring NOAA's Science On a Sphere and are members of NOAA's SOS Users Collaborative Network. The SOS Network has more than 100 institutions worldwide, reaching over 60 million people, and shares best practices in using the sphere to bring the latest global forecasts and models to the public. ELP supports the Texas State Aquarium (Corpus Christi), a member of the Coastal Ecosystem Learning Center (CELC) Network, a consortium of 25 aquariums and marine science education centers with a reach of over 20 million people. The CELC Network works with NOAA and each member institution to engage the public in protecting coastal and marine ecosystems. ELP also supports the AMS DataStreme courses for K-12 educators through a grant and in-kind support. Local implementation teams in the state offer DataStreme courses that use weather, climate, and the ocean as contexts for teaching science and improving understanding about the Earth system.

#### ***TX-17***

#### ***Moody***

#### **Office of Oceanic and Atmospheric Research (OAR) - [Tall Tower Carbon Measurements](#)**

NOAA's Earth System Research Laboratory Global Monitoring Division (ESRL/GMD) operates trace gas monitoring sites at tall television transmitter towers in eight states, including Texas. The sites were established to extend ESRL/GMD's monitoring network into the interior of North America in order to provide data to aid estimation of the net carbon balance of the continent. Variations of trace gases, especially carbon dioxide (CO<sub>2</sub>), are largest near the ground, so existing tall (> 400 meters) transmitter towers are utilized as platforms for in situ and flask sampling for atmospheric trace gases. The tower site in Texas is located near the town of Moody, 20 miles south of Waco. Pinnacle Towers Inc. owns the tower, which charges a nominal fee for use of the facility. ESRL monitors CO<sub>2</sub> concentrations on the tower at several heights, up to 500 meters above the ground, and measures wind speed and direction, temperature, humidity, rainfall, solar radiation and barometric pressure. The Blackland Research and Extension Center of Texas A&M University, located in Temple, has helped maintain the site and collect flask samples since early 2001.

**Office of Oceanic and Atmospheric Research (OAR) - [Cooperative Global Air Sampling Network](#)**

NOAA's Earth System Research Laboratory Global Monitoring Division (ESRL/GMD) operates a Cooperative Global Air Sampling Network to measure the distribution and trends of carbon dioxide (CO<sub>2</sub>) and methane (CH<sub>4</sub>), the two gases most responsible for human-caused climate change, as well as other greenhouse gases and volatile organic compounds. Samples are collected weekly at fixed locations and on several commercial ships. The air samples are delivered to ESRL/GMD, located in Boulder, CO. The observed geographical patterns and small but persistent spatial gradients are used to better understand the processes, both natural and human induced, that underlie the trends. These measurements help determine the magnitude of carbon sources and sinks in North America.

**Office of Oceanic and Atmospheric Research (OAR) - [Halocarbon Measurements](#)**

NOAA's Earth System Research Laboratory Global Monitoring Division (ESRL/GMD) operates a sampling network to measure the distribution and trends of the gases most responsible for human-caused depletion of the stratospheric ozone layer. Weekly samples are collected in high-pressure flasks at fixed locations. The air sample flasks are delivered to ESRL/GMD, located in Boulder, CO for analysis. Some locations conduct continuous surface measurements on site. Halocarbon measurements help determine the effectiveness of efforts to protect and restore the ozone layer - so it can protect us from the sun's ultraviolet radiation.

**Office of Oceanic and Atmospheric Research (OAR) - [Ozone Measurements](#)**

NOAA's Earth System Research Laboratory Global Monitoring Division (ESRL/GMD) conducts long-term monitoring of ozone at the surface, with aircraft, and with balloons, through cooperative relationships with local partners. Aircraft based in-situ tropospheric ozone measurements provide data relevant to: pollution events, lower atmosphere mixing dynamics, boundary layer stability, ozone trend studies, and the validity of other samples collected in-flight. Near ground level ozone is currently monitored using ultraviolet absorption photometers at eight sites that are generally representative of background conditions. These sites, four of which have records exceeding 25 years in length, provide information on possible long-term changes in tropospheric ozone near the surface and support air quality research.

***TX-18***

***Houston***

**National Weather Service (NWS) - [Center Weather Service Unit](#)**

Housed in the Federal Aviation Administration's Houston Air Route Traffic Control Center (ARTCC), the NWS Center Weather Service Unit (CWSU) provides aviation forecasts and other weather information to ARTCC personnel for use in directing the safe, smooth flow of aviation traffic in southern Texas, southern Louisiana, southern Mississippi and the southwestern tip of Alabama.

**Office of Oceanic and Atmospheric Research (OAR) - [Total Column Ozone Measurements](#)**

NOAA's Earth System Research Laboratory Global Monitoring Division (ESRL/GMD)) makes measurements of the column amounts of ozone between the earth's surface and the top of the atmosphere at a number of locations around the United States, including Boulder, CO. The observations are obtained with ground-based spectrometers that measure the attenuation by ozone of ultraviolet light. This integrated ozone amount is critical in determining the amount of ultraviolet radiation reaching the earth's surface. Excess ultraviolet radiation is responsible for human skin cancer and is also harmful to other biogenic organisms. With controls now in place on the manufacture and use of these ozone destroying compounds, it will be important to monitor the ozone layer for the expected recovery and determine whether other factors such as long-term climate change are influencing this recovery.

**Office of Oceanic and Atmospheric Research (OAR) - [Ultraviolet Radiation Monitoring Network](#)**

NOAA's Earth System Research Laboratory Global Monitoring Division (ESRL/GMD) operates an ultraviolet radiation (UV) monitoring network site in Houston. These measurements are done as part of ESRL's research on the Earth's surface radiation budget. Research efforts are devoted to the extent and cause of observed variations in long-term radiation and meteorological measurements, using satellite observations and climate model calculations. In addition, observations of spectral solar radiation are made for remote sensing of certain atmospheric constituents and spectral solar UV is measured for the investigation of the interaction of ozone and solar radiation. ESRL/GMD also provides essential instrument calibration services for national and worldwide partner UV monitoring networks.

***TX-19***

***Lubbock***

**National Weather Service (NWS) - [Weather Forecast Office](#)**

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

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

***TX-19, 21, 23***

***Austin, Monahans, Muleshoe, Panther Junction***

**National Environmental Satellite, Data, and Information Service (NESDIS) and Office of Oceanic and Atmospheric Research (OAR) - [U.S. Climate Reference Network](#)**

The U.S. Climate Reference Network (USCRN) is an operationally viable research network of 135 climate stations that are deployed nationwide. Data from the USCRN are used in various climate monitoring activities and for placing current climate anomalies into an historical perspective. The USCRN provides the United States with a reference network that contributes to an International network under the auspices of the Global Climate Observing System (GCOS).

***TX-24***

***Fort Worth***

**National Weather Service (NWS) - [Center Weather Service Unit](#)**

Housed in the Federal Aviation Administration's Dallas/Fort Worth Air Route Traffic Control Center (ARTCC), the NWS Center Weather Service Unit (CWSU) provide aviation forecasts and other weather information to ARTCC personnel for use in directing the safe, smooth flow of aviation traffic in northern and western Texas, southern Oklahoma, southwestern Arkansas, northwestern Louisiana, and the southeastern tip of New Mexico.

## **TX-27**

### **Corpus Christi**

#### **National Ocean Service (NOS) – [Spatial Reference Center](#)**

Partnering with the National Geodetic Survey (NGS), Texas A&M University - Corpus Christi's Conrad Blutcher Institute for Surveying and Science created the Texas Spatial Reference Center (TSRC). The mission of TSRC is to conduct basic and applied research contributing to NGS's national Height Modernization program. TSRC is a repository for information used by researchers to develop improved understanding of elevation data and geodetic datums in the state of Texas. TSRC establishes accurate positioning and elevations throughout Texas in cooperation with qualified geospatial scientists, professional engineers, and professional land surveyors.

#### **National Weather Service (NWS) - [Weather Forecast Office](#)**

Located at the Corpus Christi International Airport, this NWS Weather Forecast Office (WFO) is staffed around-the-clock every day, and provides the best possible weather, water, and climate forecasts and warnings to residents of Texas' coastal bend. Highly trained forecasters issue warnings and forecasts for events, including severe thunderstorms, tornadoes, winter storms, floods, and heat waves. This essential information is provided to the general public, media, emergency management and law enforcement officials, the aviation and marine communities, agricultural interests, businesses, and others. Information is disseminated in many ways, including through dedicated government channels, satellite, the Internet, and NOAA Weather Radio All Hazards.

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#### **NOAA Office of Education - [Environmental Literacy Program](#)**

NOAA's Environmental Literacy Program (ELP), administered by the Office of Education, provides grants and in-kind support to build the capacity of institutions and networks to advance NOAA's mission through formal (K-12) and informal education at national, regional, and local levels. In Texas, ELP supports the Bay Education Center (Rockport), the Houston Museum of Natural Science at Sugarland, and the International Museum of Art and Science (McAllen) all of which have permanent exhibits featuring NOAA's Science On a Sphere and are members of NOAA's SOS Users Collaborative Network. The SOS Network has more than 100 institutions worldwide, reaching over 60 million people, and shares best practices in using the sphere to bring the latest global forecasts and models to the public. ELP supports the Texas State Aquarium (Corpus Christi), a member of the Coastal Ecosystem Learning Center (CELC) Network, a consortium of 25 aquariums and marine science education centers with a reach of over 20 million people. The CELC Network works with NOAA and each member institution to engage the public in protecting coastal and marine ecosystems. ELP also supports the AMS DataStreme courses for K-12 educators through a grant and in-kind support. Local implementation teams in the state offer DataStreme courses that use weather, climate, and the ocean as contexts for teaching science and improving understanding about the Earth system.

### **Port Aransas**

#### **National Ocean Service (NOS) - [Mission Aransas National Estuarine Research Reserve](#)**

The 186,189-acre Mission-Aransas Research Reserve, designated in 2006 and managed by the University of Texas Marine Science Institute, is a large contiguous complex of wetland, terrestrial, and marine environments and named for the two river systems that flow into it. Located on the Texas Coastal Bend, 30 miles northeast of Corpus Christi, the reserve is representative of Western Gulf estuaries. The site's new 35,940 square-foot research center provides office, wet and dry laboratories and seminar facilities supporting reserve staff and programs. Another reserve facility, the Bay Education Center, located in the City of Rockport, Texas, provides educational exhibits and hosts NOAA's Science on the Sphere. Research includes bio-monitoring and mapping of reserve habitats, water inflow requirements in the face of climate change, oil spill impacts, and monitoring environmental conditions including harmful algal blooms. Training programs target coastal decision-makers with relevant science information based on audience needs.

#### **National Environmental Satellite, Data, and Information Service (NESDIS) and Office of Oceanic and Atmospheric Research (OAR) - [U.S. Climate Reference Network](#)**

The U.S. Climate Reference Network (USCRN) is an operationally viable research network of 135 climate stations that are deployed nationwide. Data from the USCRN are used in various climate monitoring activities and for placing current climate anomalies into an historical perspective. The USCRN provides the United States with a reference network that contributes to an International network under the auspices of the Global Climate Observing System (GCOS).

### **Rockport**

#### **Office of Oceanic and Atmospheric Research (OAR) - [Science On a Sphere® at the Bay Education 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.

### **TX-30**

#### **Dallas**

#### **Office of Oceanic and Atmospheric Research (OAR) - [Science On a Sphere® at Earth Day Texas](#)**

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.

### **TX-34**

#### **Brownsville**

#### **National Marine Fisheries Service (NMFS) - [Lot Inspection Office](#)**

The National Seafood Inspection Program conducts a voluntary inspection program for fishery products on a fee-for-service basis. The office offers a wide range of 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 Weather Service (NWS) - [Weather Forecast Office](#)**

Located at the South Padre Island International Airport in Brownsville, this NWS Weather Forecast Office (WFO) is staffed around-the-clock every day, and provides the best possible weather, water, and climate forecasts and warnings to residents of the lower Rio Grande Valley. This office also provides marine warnings and forecasts for portions of the Texas Gulf Coast. Highly trained forecasters issue warnings and forecasts for events, including severe thunderstorms, tornadoes, winter storms, floods, and heat waves. This essential information is provided to the general public, media, emergency management and law enforcement officials, the aviation and marine communities, agricultural interests, businesses, and others. Information is disseminated in many ways, including through dedicated government channels, satellite, the Internet, and NOAA Weather Radio All Hazards.

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

### **[Harlingen](#)**

#### **National Marine Fisheries Service (NMFS) - [Office of Law Enforcement](#)**

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

### **[Sinton](#)**

#### **Office of Oceanic and Atmospheric Research (OAR) - [Carbon Cycle Gases and Halocarbons](#)**

NOAA's Earth System Research Laboratory Global Monitoring Division (ESRL/GMD) operates a small aircraft-based North American network of sampling sites to measure vertical profiles of important greenhouse gas concentrations. Air is sampled above the surface up to approximately 25,000 feet above sea level using a relatively small, light, and economical automated system developed by ESRL researchers. These air samples are delivered to ESRL/GMD in Boulder, Colorado for measurements of CO<sub>2</sub>, CH<sub>4</sub>, and other greenhouse gasses. This data will improve understanding and models of the global carbon cycle. Sampling is conducted bi-weekly. Some air samples from the small aircraft program are also analyzed for halocarbon gases that can destroy the stratospheric ozone layer. Halocarbon measurements help determine the effectiveness of efforts to protect and restore the ozone layer so it can protect us from the sun's ultraviolet radiation.

**TX-36**

**La Porte**

**National Marine Fisheries Service (NMFS) - [Federal Inspection Office](#)**

NOAA's Seafood Inspection Program conducts a voluntary inspection program for fishery products on a fee-for-service basis. The office offers a wide range of 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.

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