

## NOAA In Your State

# Tennessee

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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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### TN

#### Statewide

#### **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.

#### **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 Little Rock, AR serving the Central Plains region - Arkansas, Kansas, Missouri, and Tennessee. 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 9 ASOS stations in Tennessee.

### **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, 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). 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 169 COOP sites in Tennessee.

### **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 21 NWR transmitters in Tennessee.

### ***TN-1***

#### ***Morristown/Knoxville/Tri-Cities***

### **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 eastern Tennessee and western portions of Virginia and North Carolina. 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.

### **TN-3**

#### **Anderson County**

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

A NOAA Air Resources Laboratory Atmospheric Integrated Research Monitoring Network (AIRMoN) site is located in the Walker Branch Watershed, Oak Ridge (Anderson County), TN. The site has been in operation since 1992 collecting data on major ions in precipitation (rain, snow) on a daily basis, and previously since 1980 on an event basis. The major ions collected include: sulfate, nitrate, phosphorus, pH, ammonium, sodium, chloride, and soil cations. AIRMoN is a sub-network of the National Atmospheric Deposition Program.

#### **Oak Ridge**

##### **Office of the Chief Information Officer (OCIO) - [High Performance Computing and Communications](#)**

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

##### **Office of Oceanic and Atmospheric Research (OAR) – [Atmospheric Turbulence and Diffusion Division](#)**

The Atmospheric Turbulence & Diffusion Division (ATDD) of NOAA's Air Resources Laboratory is located in Oak Ridge (Anderson County), TN. ATDD concentrates on air quality and climate-related research directed toward issues of national and global importance. In their air quality research, ATDD develops better methods for predicting transport, dispersion, and air-surface exchange of air pollutants; applies these methods to increasingly realistic situations including nighttime cases, complex terrain, and non-uniform surfaces; and tests these methods against data to determine the confidence limits and uncertainties, which apply. ATDD's climate-related research includes reference-grade measurement of climate change and related physical and chemical processes.

##### **Office of Oceanic and Atmospheric Research (OAR) – [DJI s1000 Unmanned Aircraft System](#)**

Unmanned Aircraft Systems (UAS) are used by NOAA to monitor and understand the global environment and bridge the gap measurements made on Earth's surface and on satellites. The DJI s1000 is a multirotor small UAS and is a cost-effective and innovative technology used by NOAA to assess measurements of atmospheric temperature, humidity, and the earth's surface temperature. Data from the DJI s1000 can be applied to improve severe weather forecasts, perform storm damage surveys in otherwise inaccessible areas, and improve local weather forecasts by having more frequent information available to local forecasters.

##### **Office of Oceanic and Atmospheric Research (OAR) – [Penguin BE Unmanned Aircraft System](#)**

Unmanned Aircraft Systems (UAS) are used by NOAA to monitor and understand the global environment and bridge the gap measurements made on Earth's surface and on satellites. The Penguin BE is a fixed-wing, cost-effective, innovative, and small UAS that can measure atmospheric temperature, relative humidity, the earth's surface temperature and land surface changes over large areas in parts of the atmosphere that cannot be measured in any other way.

**Office of Oceanic and Atmospheric Research (OAR) - [Forest Carbon Sequestration Study](#)**

NOAA's Air Resources Laboratory is conducting research into quantifying the amount of atmospheric carbon taken up annually by forested ecosystems. Data have been and continue to be collected from towers, both above and below the forest canopy. One tower, located within the Walker Branch Watershed, collected data from the mid-1990s until it closed in 2004. A second tower, the Chestnut Ridge tower, has been collecting data since 2004.

**Office of Oceanic and Atmospheric Research (OAR) - [Global Energy and Water Exchanges Project](#)**

NOAA's Air Resources Laboratory has several observational sites that support the World Climate Research Programme's Global Energy and Water Exchanges Project (GEWEX). One of NOAA's GEWEX sites is located near Oak Ridge, TN. GEWEX sites were established to provide detailed measurements (such as turbulent fluxes of heat, water vapor, momentum, carbon dioxide, air temperature, and relative humidity) and other information about the physical and biological processes that occur at the land/surface interface. Observations from these sites are being used to test and improve the current generation of land surface models that are used for both regional and global climate prediction.

***TN-5  
Nashville***

**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 Nashville, TN. 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. Column ozone measurements monitor changes in the stratospheric ozone layer resulting from human-produced chlorine and bromine compounds that destroy ozone. 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.

***TN-6  
Crossville***

**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).

***Nashville***

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

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**TN-9**  
**Memphis**

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

Housed in the Federal Aviation Administration's Memphis Air Traffic Control Center (ARTCC), the NWS Center Weather Service Unit (CWSU) provides forecasts and other weather information to ARTCC personnel for use in directing the safe, smooth flow of aviation traffic in Arkansas, northern Mississippi, western Tennessee, and northwestern Alabama.

**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 western Tennessee, northern Mississippi, northeastern Arkansas, and the boot-heel of Missouri. 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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More information for those offices may be found at [NOAA.gov](#).

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*NOAA In Your State*  
 **Tennessee** 

**NOAA** NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
UNITED STATES DEPARTMENT OF COMMERCE

