



NATIONAL OCEANIC AND  
ATMOSPHERIC ADMINISTRATION  
UNITED STATES DEPARTMENT OF COMMERCE



## NOAA In Your State

# Arizona

**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: Starting with highlights, then by congressional districts and cities or towns, and then statewide programs.

### Highlights of NOAA in Arizona

<u>Climate Adaptation Partnerships (CAP) Program</u>	University of Arizona Cooperative Agreement
<u>Global Energy and Water Exchanges Project</u>	Elgin Observational Site

The state of Arizona also has three Weather Forecasting Offices, four stations in the U.S. Climate Reference Network, and the Environmental Literacy Program.

### Weather Forecast Offices

Flagstaff	AZ-2
Tucson	AZ-7
Phoenix	AZ-3

**National Weather Service (NWS) Weather Forecast Offices (WFO)** are staffed 24/7/365 and provide weather, water, and climate forecasts and warnings to residents of Arizona. There are 122 [WFOs nationwide](#) of which three are in Arizona. Highly trained forecasters issue warnings and forecasts for weather events, including severe thunderstorms, tornadoes, hurricanes, winter storms, floods, and heat waves 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 wireless emergency alerts, social media, [weather.gov](#), and NOAA Weather Radio All Hazards. Each WFO has a Warning Coordination Meteorologist who actively conducts outreach and educational programs that strengthen working relationships with local partners in emergency management, government, the media and academic communities. Forecasters provide Impact-based Decision Support Services (IDSS), both remotely and on-site during critical emergencies such as wildfires, floods, chemical spills, and major recovery efforts. To gather data for forecasting and other purposes, NWS WFO staff monitor, maintain and use Automated Surface Observing Stations and Doppler Weather Radar. In addition to the WFOs, NWS operates specialized national prediction [centers](#) and regional headquarters throughout the U.S. for a total of 168 operational units. Over 85% of NWS' workforce is in the field. For current Arizona weather, visit [www.weather.gov](#) and, on the national map, click on the relevant county or district.

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### U.S. Climate Reference Network

Williams	AZ-2
Elgin	AZ-7
Tucson	AZ-7
Yuma	AZ-7

The US Climate Reference Network (USCRN) is an operationally viable research network of more than 138 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). NOAA's Air Resources Laboratory, Atmospheric Turbulence and Diffusion Division manages the USCRN in partnership with NOAA's NESDIS/NCEI.

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#### **AZ-2**

##### **Flagstaff**

National Weather Service (NWS) - [Weather Forecast Office \(WFO\)](#) - See [Page 2](#) for detail.

##### **Williams**

Office of Oceanic and Atmospheric Research (OAR) - [U.S. Climate Reference Network](#) - See [Page 2](#) for detail.

**AZ-7**

**Elgin**

Office of Oceanic and Atmospheric Research (OAR) - [U.S. Climate Reference Network](#) - See [Page 2](#) for detail.

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

NOAA's Air Resources Laboratory Surface Energy Budget Network (SEBN) has several observational sites that support the World Climate Research Programme's Global Energy and Water Exchanges Project (GEWEX). One of NOAA's SEBN sites is located near Elgin, AZ. SEBN sites were established to provide detailed measurements of the flow of heat, water vapor, momentum, carbon dioxide, air temperature, and relative humidity between the land surface and the atmosphere. They also improve our understanding of the physical and biological processes that occur at the land-atmosphere interface. Observations from these sites are being used to test and improve the current generation of land surface models which help predict regional and global climate.

**Tucson**

Office of Oceanic and Atmospheric Research (OAR) - [U.S. Climate Reference Network](#) - See [Page 2](#) for detail.

National Weather Service (NWS) - [Weather Forecast Office \(WFO\)](#) - See [Page 2](#) for detail.

**Office of Oceanic and Atmospheric Research (OAR) - [Climate Adaptation Partnerships \(CAP\) Program](#)**

The Climate Assessment of the Southwest (CLIMAS) is a cooperative agreement between NOAA's Climate Program Office (CPO) and the University of Arizona. It is one of several Climate Adaptation Partnerships (CAPs), formerly Regional Integrated Sciences and Assessments (RISA), that contribute to the advancement of equitable climate adaptation through sustained regional research and community engagement. CLIMAS promotes participatory, iterative research involving scientists, decision makers, resource users, educators, and others who need more and better information about climate and its impacts. CLIMAS investigators conduct research on the nature, causes, and consequences of climate change and variability in the southwestern United States. The team implements a program-wide strategy of structured engagement processes across the region designed to identify: new partners, specific climate equity issues they have expertise to address, and a refined set of research questions. They carry out integrated inter- and transdisciplinary research projects focused on the three most pressing climate adaptation issues in the region: water availability, increasing aridity, and extreme heat events. Because human health and well being are inextricably woven through climate research in these three areas, they leverage the engagements, partnerships, and research being done within each project to formally assess how a health lens might further support ongoing projects which do not explicitly consider health impacts at present. Finally, through formal trainings, informal "learning-by-doing" approaches, ongoing outreach activities, and development of climate services to more effectively share climate information throughout the region, CLIMAS increases the capacity of Southwest researchers and practitioners—at all career stages but with a focus on the next generation—to work collaboratively on community-focused, problem-oriented, equity-centered climate research. Core partners of CLIMAS include the University of Arizona and the New Mexico State University. Contact information and more details about this team can be found [here](#).

**Yuma**

Office of Oceanic and Atmospheric Research (OAR) - [U.S. Climate Reference Network](#) - See [Page 2](#) for detail.

**AZ-3**

**Phoenix**

National Weather Service (NWS) - [Weather Forecast Office \(WFO\)](#) - See [Page 2](#) for detail.

## **NOAA Office of Oceanic and Atmospheric Research (OAR)- [National Integrated Heat Health Information System \(NIHHIS\) Center for Collaborative Heat Monitoring](#)**

The National Integrated Heat Health Information System (NIHHIS) Centers of Excellence, made available through funds appropriated to NOAA by the Inflation Reduction Act, allow NIHHIS to enhance community science observations and data collection on extreme heat, and provide assistance to communities planning for and evaluating equitable heat resilience projects. The Center for Collaborative Heat Monitoring will support community science observations and data collection on extreme heat so communities can observe, monitor and evaluate factors influencing heat risk at a local scale. The center will be based at the Museum of Life and Science in Durham, N.C. with additional technical support from CAPA Strategies, Utah State University, and AQUEHS Corp. The center will also include three additional geographically dispersed sites, each serving a different region of the U.S. Each of these sites will help manage a network of urban heat island mapping campaigns in their region, tailoring the campaigns to unique local characteristics, engaging regional communities, and connecting with existing networks for public education and engagement. In addition to the Museum of Life and Science, these hubs include the Arizona Science Center, the Oregon Museum of Science and Industry and the Museum of Science in Boston. The center will build on eight years of NIHHIS efforts to map urban heat islands in over 80 U.S. and international communities. NIHHIS is an integrated information system supporting equitable heat resilience run out of NOAA's Climate Program Office. The NIHHIS Centers of Excellence will work alongside community members and community-based organizations to advance place-based heat information and decision-making, so they can reduce heat-related illness and death, harmful infrastructure impacts and other heat risks.

### ***Statewide***

#### **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 Flagstaff, Arizona serving the Southwest region including Arizona. 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 - [NEXRAD \(WSR-88D\) Systems](#)**

NEXRAD is used to warn the people of the United States about dangerous weather and its location. This radar technology allows meteorologists to warn the public to take shelter with more notice than ever before. The NEXRAD network provides significant improvements in severe weather and flash flood warnings, air traffic safety, flow control for air traffic, resource protection at military bases, and management of water, agriculture, forest, and snow removal. NEXRAD radar has a range of up to 250 nautical miles, and can provide information about wind speed and direction, as well as the location, size, and shape of precipitation. There are 159 operational NEXRAD radar systems deployed throughout the United States and overseas, of which four are in Arizona.

#### **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 18 ASOS stations in Arizona.

#### **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. There are 129 COOP sites in Arizona.

#### **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 1928, 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.

#### **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 13 NWR transmitters in Arizona.

#### **National Ocean Service (NOS) - [Students for Zero Waste Week](#)**

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

**National Ocean Service (NOS) - [NOAA Ocean Guardian Youth Ambassador Program](#)**

Youth aged 13-18 from across the United States and its territories that are committed to ocean conservation and stewardship of our blue planet can apply to become a NOAA Ocean Guardian Youth Ambassador. This year-long program looks for enthusiastic youth with new ideas and a unique perspective who want to learn more about [America's underwater treasures](#) and share their passion with others. Youth learn how to become a leader at their school or in their local community to make a difference in the conservation of the ocean through marine protected areas.

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***NOAA In Your State* is managed by [NOAA's Office of Legislative and Intergovernmental Affairs](#) and maintained with information provided by NOAA's Line, Corporate, and Staff Offices. Questions about specific programs or offices should be directed to the NOAA Line, Corporate, or Staff Office listed.**

More information for those offices may be found at [NOAA.gov](#).

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