



NATIONAL OCEANIC AND  
ATMOSPHERIC ADMINISTRATION  
UNITED STATES DEPARTMENT OF COMMERCE



## NOAA In Your State

# Utah

**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 Utah

<a href="#">Colorado Basin River Forecast Center</a>	Salt Lake City	UT-1
<a href="#">Western Region Headquarters</a>	Salt Lake City	UT-1
<a href="#">Incident Meteorologists</a>	Statewide	UT
<a href="#">Bipartisan Infrastructure Law (BIL) / Inflation Reduction Act (IRA) Projects</a>	Project Specific	UT

The state of Utah also has one Weather Forecasting Office and one Science on a Sphere® exhibition.

### Weather Forecast Offices

Salt Lake City    UT-2

**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 Utah. There are 122 [WFOs nationwide](#) of which one is in Utah. 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 Utah weather, visit [www.weather.gov](#) and, on the national map, click on the relevant county or district.

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### Science On a Sphere®

Salt Lake City    UT-2

**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 in a way that is simultaneously intuitive and captivating what are sometimes complex environmental processes. It is located at Clark Planetarium in Salt Lake City.

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### **UT-1**

#### ***Brigham City***

#### **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).

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### **UT-2**

#### ***Salt Lake City***

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

Housed in the Federal Aviation Administration's Salt Lake City 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 Montana, western Wyoming, southern Idaho, western Oregon and northeast Nevada.

**Office of Education**[Oceanic and Atmospheric Research \(OAR\) - Science On a Sphere®](#) - at [Clark Planetarium](#). See [Page 2](#) for details.

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

Co-located with the NWS Weather Forecast Office in Salt Lake City, the Colorado Basin River Forecast Center (RFC) performs continuous river basin modeling and provides hydrologic forecast and guidance products for rivers and streams in the Colorado River basin from the headwaters in Colorado and Wyoming downstream to the international boundary with Mexico. The RFC also covers the river basins west of the Continental Divide in New Mexico and Arizona. 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) - [Weather Forecast Office](#)**- See [Page 2](#) for details.

**National Weather Service (NWS) - [Western Region Headquarters](#)**

The NWS Western Region Headquarters is the administrative and support center for 24 NWS Weather Forecast Offices, four aviation-focused Center Weather Service Units, and three River Forecast Centers located in eight states (Arizona, California, Idaho, Montana, Oregon, Nevada, Utah, and Washington). 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. The headquarters is also the home office of the Western Region Director, who oversees the management and administration of the NWS entities listed above, as well as other region-level officials and program managers.

**Chief Information Officer (CIO) - [N-Wave NOAA Science Network](#)**

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

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

This site is one of seven in the NOAA Global Monitoring Laboratory (GML) surface solar radiation (SOLRAD) monitoring network, based in the continental United States, and is a collaboration with NOAA's Surface Radiation Budget (SURFRAD) Network that supports climate research with accurate, continuous, long-term measurements of the surface radiation budget.

**Torrey**

**Office of Oceanic and Atmospheric Research (OAR) - [U.S. Climate Reference Network](#)**

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). ARL/ATDD manage the USCRN in partnership with NOAA's NESDIS/NCEI.

## **Wendover**

### **Office of Oceanic and Atmospheric Research (OAR) - [Greenhouse Gas Reference Network](#)**

NOAA's Global Monitoring Laboratory (GML) operates the Greenhouse Gas Reference 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 in specially designed flasks each week and delivered to GML in Boulder, CO, for analysis. 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. Air samples have been collected at Wendover, Utah since 1993. The samples collected at Wendover represent air that has passed over the western U.S. and possibly Canada. These measurements help determine the magnitude of carbon sources and sinks in North America.

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## **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 – Arizona, New Mexico, and Utah. 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 two are in Utah.

### **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 nine ASOS stations in Utah.

### **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 153 COOP sites in Utah.

#### **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 17 NWR transmitters in Utah.

#### **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 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.

### ***Bipartisan Infrastructure Law (BIL) / Inflation Reduction Act (IRA) Projects***

The National Oceanic and Atmospheric Administration (NOAA) was entrusted with billions of supplemental federal funding dollars with passage of the Bipartisan Infrastructure Law on November 15, 2021 and the Inflation Reduction Act on August 16, 2022. This historic infrastructure funding has been invested in communities across the nation to build resilience in the face of climate change. NOAA distributed funding to communities, tribal, state and local governments, higher education programs, businesses, non-profit organizations, and facilities in need. NOAA funded billions of dollars in grants and cooperative agreements across the country to fund projects that enhance climate resilience, restore coastal and marine habitats, improve safety, and create jobs. For an interactive map of NOAA BIL and IRA investments in your state, visit <https://www.noaa.gov/bil-ira-awards-explorer>.

#### ***IRA***

##### **Understanding the Evolving Threat of Snow Loads and Rain on Snow Events to Structural Safety, \$300,379**

Building collapse due to the weight of settled snow, or snow load, is dangerous. These collapses are sometimes due to rain on snow (ROS) events, which can cause a surge in the weight of the snowpack immediately preceding the melting phase or ponding on the structure during the melting phase. Climate change is anticipated to increase the threat of extreme, short-term snow loads and/or ROS events in certain regions of the United States. The proposed work will improve our understanding of how the statistical distributions describing extreme snow load accumulation and ROS occurrence evolve in a changing climate across the Conterminous United States (CONUS).

##### **Veery Fledgling Nanosatellite Pathfinder for Coarse Sea Wind, \$175,000**

Care Weather will develop Veery, a nanosatellite scatterometer, to enhance global ocean surface vector winds (OSVW) monitoring. Current daily updates are insufficient for capturing rapid changes crucial for understanding weather phenomena. Veery aims for a near-hourly refresh rate by miniaturizing scatterometer technology into a cost-effective nanosatellite format. This innovation promises to transform meteorological science and operational forecasting, offering scalable solutions for industries reliant on accurate weather data.

##### **A Multi-University Consortium for Advanced Data Assimilation Research and Education (CADRE), \$645,515**

The next-gen NOAA Unified Forecast System Data Assimilation (DA) faces significant challenges associated with earth system modeling and observations. Serious gaps in DA inhibit addressing these challenges. A Multi-University Consortium for Advanced Data Assimilation Research and Education will partner closely with NOAA to advance DA education and research. Supported will be 12 DA research thrusts and their implementation to the UFS. The projects will deliver improvements to DA, the workforce, and improve short range to S2S forecasts.

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

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