NOAA NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
UNITED STATES DEPARTMENT OF COMMERCE

NOAA In Your State

Nevada

***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 Nevada

California-Nevada Climate Applications Program	Reno	NV-2
Special Operations and Research Division	Las Vegas	NV-4
Bipartisan Infrastructure Law (BIL) / Inflation Reduction Act (IRA) Projects	Project Specific	NV

Weather Forecast Offices

Elko	NV-2
Reno	NV-2

Las Vegas NV-4

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 Nevada. There are 122 WFOs nationwide of which three are in Nevada. 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 Nevada weather, visit www.weather.gov and, on the national map, click on the relevant county or district.

NV-2

Denio

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.

Elko

National Weather Service (NWS) - Weather Forecast Office- See Page 1 for details.

Reno

National Weather Service (NWS) - Weather Forecast Office- See Page 1 for details.

National Environmental Satellite, Data, and Information Service (NESDIS) - National Centers for Environmental Information (NCEI) - Western Regional Climate Center

NOAA NCEI's six Regional Climate Centers (RCCs) support the development and delivery of a wide range of place-based climate science and information products and services to assist decision makers with making informed decisions. The RCCs are a federal-university cooperative effort that supports the operational production and delivery of climate data and information to decision-makers at regional levels. The RCCs also participate in basic and applied climate research as well as user engagement and outreach activities. The service provided by the RCCs has evolved through time to become an efficient, user-driven program with many of the components that have been cited for effective regional climate services. The Western RCC is collocated with the Desert Research Institute. It serves MT, ID, UT, NM, AZ, NV, CA, OR, WA, AK, HI, US-affiliated Pacific Islands.

Office of Oceanic and Atmospheric Research (OAR) - Climate Adaptation Partnerships (CAP) Program
The California-Nevada Climate Applications Program (CNAP) is a cooperative agreement between NOAA's Climate Program Office (CPO), Scripps Institution of Oceanography, and the Desert Research Institute. It is one of several Climate Adaptation Partnerships (CAP), formerly Regional Integrated Sciences and Assessments (RISA), that contribute to the advancement of equitable climate adaptation through sustained regional research and community engagement. California and Nevada have made significant progress in addressing climate variability and climate change impacts to their state and local communities, but both states remain vulnerable to climate change impacts. Among these are public health threats from extreme heat and wildfire smoke, impacts on water resources from extended drought, reduced snowpack, and extreme precipitation events, and in California, flooding, beach erosion and degradation of coastal infrastructure and communities. CNAP, in response to these challenges, aims to improve resilience in California and Nevada by providing decision makers with usable climate information through integrating cutting edge physical and social science. Their work emphasizes partnerships and supporting frontline communities that have been and are impacted by social and environmental inequities. CNAP's research projects address: (1) extreme heat impacts in urban low income, unhoused, and vulnerable populations in Southern Nevada; (2) the impact of changing hydroclimatic conditions and water use policy on water availability in California's southern San Joaquin Valley, a key agricultural region in the midst of water and energy transitions; (3) integrated scientific approaches to address uncertainty in coastal planning in Southern California; (4) public health impacts on Northern California and Nevada communities from compound climate hazards of wildfire smoke and heat on under-resourced households; (5) the mental health challenges of climate change professionals, directed through the Adaptive Mind project — a set of skills and capacities designed to support practitioners in the adaption sciences; and (6) supporting climate assessment activities in both states through research and data customization. Core partners of CNAP include the Scripps Institution of Oceanography, the Desert Research Institute, the Western Regional Climate Center, the University of Nevada Las Vegas, the University of Nevada Reno, the University of California Merced, Anderson Smith Consulting, and Kern Community College District.

NV-3

Baker

Office of Oceanic and Atmospheric Research (OAR) - U.S. Climate Reference Network
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Desert Rock

Office of Oceanic and Atmospheric Research (OAR) - Surface Radiation Measurement Network
The Earth System Research Laboratory Global Monitoring Laboratory(ESRL/GML) operates seven stations as part of its surface radiation budget network (SURFRAD). The station measurements support regional and global weather and climate research with accurate, continuous, long-term measurements of the surface radiation budget over the United States. Solar radiation is the driving energy for geophysical and biological processes that control weather and affect planetary life; understanding the global surface energy budget is therefore key to understanding climate and the environmental consequences to agriculture and other statewide concerns. Because it is impractical to cover the whole earth with monitoring stations, the answer to global coverage lies in reliable satellite-based observations. Accurate and precise ground-based measurements across a range of climate regions are essential to refine and verify the satellite observations. One of these stations is located near Desert Rock. These ground-based measurements also support special research projects on radiation and climate processes in the Nevada region and serve as important verification for weather forecasts.

NV-4

Mercury

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

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Las Vegas

Office of Oceanic and Atmospheric Research (OAR) - Special Operations and Research Division

The Air Resources Laboratory (ARL) conducts research on the boundary layer, the lowest part of the atmosphere where we live and breathe. World-class research on the chemistry and physics of the boundary layer contributes to accurate regional and global predictions of weather, air quality and climate variability.

ARL's Special Operations Research Division in Nevada (SORD-NV) is located in Las Vegas, NV. SORD-NV conducts basic and applied research to advance the understanding of the processes occurring in the lowest layer of the atmosphere. Under a cooperative agreement with the Department of Energy National Nuclear Security Administration, SORD-NV collects and analyzes meteorological data and conducts site-specific weather prediction and surveillance. This work supports the Nevada Field Office and the Nevada National Security Site and includes national security experiment support and emergency preparedness and response activities.

National Weather Service (NWS) - Weather Forecast Office- See Page 1 for details.

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 La Jolla, CA serving the Pacific Southwest region – California and Nevada. 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 three are in Nevada.

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 10 ASOS stations in Nevada.

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). There are 80 COOP sites in Nevada.

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 14 NWR transmitters in Nevada.

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.

BIL

Applications of AI to ensemble forecasts of compound extreme weather events in support of operational adaptation of electric utilities, $174,708
We propose a high-impact innovation for weather forecasting that integrates global ensemble weather forecasts with an AI-driven post-processing model of extreme weather indices. This innovation will provide the basis for skillful probabilistic forecasts of compound extreme weather events at extended lead times. Extreme weather/climate events of relevance to electric utilities focused on in Phase I are heat and cold extremes, wind droughts, extreme wind gusts, hail and lightning.

Understanding the Role of Social Infrastructure in Extreme Heat and Wildfire Smoke Vulnerability Mitigation: A Regional Comparison, $474,859
Exposure to extreme heat and wildfire smoke pose significant human health risks, often with disproportionate impacts to historically underserved communities given higher rates of preexisting health conditions and outdoor employment, lower access to health care and means for preventing illness, and limited ability to advocate for solutions. Important questions remain as to what specifically constitutes beneficial social infrastructure in the context of extreme heat and wildfire smoke, and whether and how its presence or absence either facilitates or impedes vulnerability mitigation. *This award supports work in NV and WA.*

Applying AI to forecasting compound extreme weather events, $150,555
This project will develop a Reflectivity Control and Direction Device (RCDD) to enhance solar sail propulsion for space weather monitoring sensors. This innovative device uses polymer dispersed liquid crystal (PDLC) material between polyimide layers, allowing it to switch from opaque to transparent with an electrical voltage. Integrated with a flexible membrane diffraction grating, the RCDD can generate forces in both in-plane and out-of-plane directions, enabling full six-degree-of-freedom (6DOF) control. This innovation simplifies sailcraft control, reduces weight, and improves warning times for harmful space weather events.

IRA

Understanding the Evolving Threat of Snow Loads and Rain on Snow Events to Structural Safety, $186,810
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).