

Western States Federal Agency Support Team (WestFAST) is a collaboration between 13 Federal agencies with water management responsibilities in the West. WestFAST was established to support the Western States Water Council (WSWC) and the Western Governors' Association (WGA) in coordinating Federal efforts regarding water issues.

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WestFAST Participates in WSWC Workshop on Irrigation Management Information

The Western States Water Council (WSWC) and the California Department of Water Resources (CDWR) cosponsored a workshop on irrigation management information systems and networks, held in San Diego, California on August 25-26, 2016.

Agricultural and municipal weather station networks are used for providing irrigation scheduling information to growers and municipal landscape managers. Accurate estimates of reference evapotranspiration and crop-specific evapotranspiration allow growers and landscape managers to improve water use efficiency by precisely scheduling irrigation to provide only the amount of water needed by plantings.

WestFAST representative Forrest Melton, NASA Associate Program Manager for Water Resources in their Applied Sciences Program, briefed attendees on the application of the California Irrigation Management Information System (CIMIS) evapotranspiration information combined with remotely sensed data from satellites to support irrigation scheduling and water management. Dr. Melton also discussed the role of ET data derived from CIMIS and remote sensing in the implementation of the CDWR's strategic plan for its Sustainable Groundwater Management (SGM) Program. Jama Hamel and Jim Prairie of the Bureau of Reclamation briefed attendees on the Pacific Northwest/Great Plains Agrimet System and the Upper Colorado River Basin Agrimet System.

The WSWC has collected information from the workshop for use in preparing a report on the status of existing networks, challenges in maintaining data coverage, data gaps, and opportunities for strengthening collection of this important data. The report will be published later this fall.

View presentation material from the workshop at this [link](#).



Jim Prairie, Bureau of Reclamation, briefs attendees on Upper Colorado River agrimet systems

WestFAST Prepares for WSWC Fall Meetings in St. George, Utah

The WSWC Fall 2016 (182nd) Council Meetings will be held in St. George, Utah on September 28-30, 2016.

WestFAST agencies briefings to the Council will include updates on Department of the Interior activities in the west under the WaterSmart Program and an overview of the recently published Bureau of Reclamation report on activities related to implementation of the SECURE Water Act including highlight findings from basin specific studies to provide a West-wide perspective on anticipated impacts to water resources due to climate change.

Staff from the NASA Jet Propulsion Laboratory in Pasadena California will brief the Council on the status of the soon-to-be opened Western Water Applications Office (WWAO). The new NASA Earth Science Division Applied Science Program office is being established to accelerate the application of NASA Observations and scientific analysis techniques to tangible, important, and timely water management problems.

Since the meetings are being held within the Colorado River Basin, WestFAST agencies will report out on some local activities including ongoing work in the Colorado River Basin Salinity Control Program (CRBSCP). The CRBSCP is a Federal inter-agency and State collaboration which focuses on improving the water quality of the Colorado River to U.S. users. A field trip is planned for September 28 which will visit a CRBSCP study site investigating the feasibility of diverting saline thermal springs discharging from the Virgin River tributary to the Colorado River.

More information is available on the St. George WSWC meetings at this [link](#).

NOAA Launches America's First National Water Forecast Model (NOAA, 8/16)

Launched in August 2016, and run on NOAA's powerful new Cray XC40 supercomputer, the National Water Model uses data from more than 8,000 U.S. Geological Survey gauges to simulate conditions for 2.7 million locations in the contiguous United States. The model generates hourly forecasts for the entire river network. Previously, NOAA was only able to forecast streamflow for 4,000 locations every few hours.

The model also improves NOAA's ability to



meet the needs of its stakeholders — such as emergency managers, reservoir operators, first responders, recreationists, farmers, barge operators, and ecosystem and floodplain managers — with more accurate, detailed, frequent and expanded water information.

The nation has experienced a number of disastrous floods in recent years, including the ongoing flooding this week in Louisiana, accentuating the importance of more detailed water forecasts to help people prepare.

“With a changing climate, we’re experiencing more prolonged droughts and a greater frequency of record-breaking floods across the country, underscoring the nation’s need for expanded water information,” said Louis Uccellini, Ph.D., Director of the National Weather Service.

“The National Water Model will improve resiliency to water extremes in American communities. And as our forecasts get better, so will our planning and protection of life and property when there’s either too much water, too little, or poor water quality.”

The announced model fulfills a commitment President Obama made to the American public on World Water Day in March. In a White House statement, he called for “cross-cutting, creative solutions to solving the water problems of today, as well as innovative strategies that will catalyze change in how we use, conserve, protect and think about water in the years to come.”

Initially, the model will benefit flash flood forecasts in headwater areas and provide water forecast information for many areas that currently aren’t covered. As the model evolves, it will provide “zoomed-in,” street-level forecasts and inundation maps to improve flood warnings, and will expand to include water quality forecasts.

“Through our partnership with the research, academic and federal water community, NOAA is bringing the state-of-the-science in water forecasting and prediction to bear operationally,” said Thomas Graziano, Ph.D., Director of NOAA’s new Office of Water Prediction at the National Weather Service. “Over the past 50 years, our capabilities have been limited to forecasting river flow at a relatively limited number of locations. This model expands our forecast locations 700 times and generates several additional water variables, such as soil moisture, runoff, stream velocity, and other parameters to produce a more comprehensive picture of water behavior across the country.”

The underlying technology for the model was developed by the National Center for Atmospheric Research (NCAR). NOAA developed and implemented the model along with NCAR, the Consortium of Universities for the Advancement of Hydrologic Sciences, the National Science Foundation, and federal Integrated Water Resources Science and Services Consortium partners. Continuing to leverage partnerships with the research community will prepare NOAA for new collaborations and even greater innovation in the future.



Click the above map to view more information on the National Water model

USGS/Reclamation Report: Groundwater Recharge in Upper Colorado River Basin May Hold Steady Under Climate Change (USBR, 8/15)

Future increases in precipitation in the Upper Colorado River Basin may increase groundwater recharge, offsetting reductions that would result from increased temperatures, according to a recent study by the U.S. Geological Survey (USGS) and Bureau of Reclamation (Reclamation).

The Colorado River provides water for more than 35 million people in the United States and 3 million people in Mexico. A recent USGS publication suggests that as much as half of the water flowing in rivers and streams in the Upper Colorado River Basin originates as groundwater. Understanding how much groundwater is available and how it’s replenished is important to sustainably manage both groundwater and surface water supplies in the Colorado River basin now and in the future.

USGS and Reclamation scientists estimated projected changes in groundwater recharge for the Upper Colorado River Basin from recent historical (1950–2015) through future (2016–2099) time periods using climate projections and a groundwater-recharge model.

Simulated future groundwater recharge through 2099 is generally expected to be somewhat greater than the historical average in most decades due to an anticipated wetter future climate in the basin under the most advanced climate modeling projections. Groundwater resources are replenished through increases in precipitation, which may offset reductions from increased temperatures. The full report is available online in the journal *Geophysical Research Letters*.



The Colorado River from Moab Rim. Click the figure to explore access to the USGS report. (Photo by Matt Miller, USGS)

While recharge simulations from a majority of the projected climate data sets result in increased recharge in the Upper Colorado River Basin during most future decades, there were some that resulted in decreased future recharge relative to the historical climate period.

“You can’t manage what you don’t measure,” said Fred Tillman, lead author and USGS scientist. “These results are the first step in understanding the quantity of groundwater we can expect in the Upper Colorado River Basin; however, further studies are needed to help more accurately forecast future groundwater availability.”

“Future estimates of groundwater recharge are compounded by the



large-scale of the Upper Colorado River Basin and the uncertainties of future climate projections,” said Reclamation co-author Subhrendu Gangopadhyay.

"Given these uncertainties, multiple-future water supplies scenarios are used to inform Reclamation's water management and planning within the Upper Colorado River Basin," Reclamation's Upper Colorado Region Water Resources Manager Malcolm Wilson added.

Interior Department and State of California Announce Support for the Salton Sea *(DOI, 8/31)*

Following President Obama's remarks on August 31 at the Annual Lake Tahoe Summit on Climate and Conservation Challenges, Deputy Secretary of the Interior Michael Connor and State of California Natural Resources Secretary John Laird signed a Memorandum of Understanding (MOU) to strengthen coordination of management activities to benefit the Salton Sea, boost the region's climate resilience, spur the region's economic growth, and improve public health.

The MOU provides a framework for collaboration through 2026, with Interior and the State of California working towards the state-identified goal of up to 25,000 acres of resource mitigation. The effort will ensure coordination of activities within the federal and state partnership to facilitate projects in a timely manner to improve air and water quality, fish and wildlife habitat, existing obligations to Native American communities, and collaboration of scientific research efforts.

"Our partnership at the Salton Sea will bring real benefits to this vital California resource and provide stability for surrounding communities," said Deputy Secretary Connor. "The federal government will continue to work with our partners on our shared interests by identifying innovative approaches to help the State find a path forward to a sustainable Salton Sea."

"We welcome the commitments and investments from the federal government to augment the significant resources and state investments we are making, as well as their support of our program to help avert an environmental and public health crisis at the Salton Sea" said California Natural Resources Secretary John Laird. "The State of California has committed more than \$80 million in voter-approved bond funds to restore habitat and suppress dust at the lake in the near term, but greater investment by multiple agencies will be needed. Today's agreement between the State and U.S. Department of Interior moves us closer to the level of investment and participation it will take to protect public health and the ecological values threatened by a receding Salton Sea."

The Salton Sea, located in California's Imperial and Riverside counties, is the State's largest lake. The Sea faces a critical tipping point in environmental degradation. If action is not taken to manage the Sea, the air quality is likely to decline to levels that jeopardize pub-

lic health, and California will lose critically important Pacific Flyway habitat for waterfowl and shorebirds.

The MOU affirms California's leading role in resource mitigation and a commitment by the State and Interior that will further the objectives established by Governor Edmund G. Brown Jr.'s Salton Sea Task Force. The federal investment will direct resources to include continued scientific monitoring, technical assistance in permitting and projects, and improved on-farm activities.

The Salton Sea currently supports a robust tilapia population which provides a vital stop for migratory birds along the Pacific Flyway. This terminal lake is sustained by agricultural runoff, which has been declining, resulting in a host of environmental and economic issues. Air and water quality has degraded, as has critical fish, avian, and wildlife habitat. Socio-economic conditions for surrounding communities have been affected by the Sea's condition. Current conditions are not sustainable and present many challenges, some of which the resources provided by the MOU will be able to address.

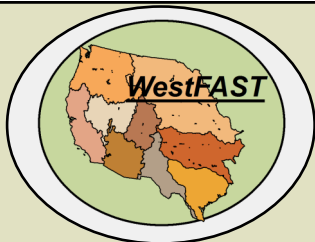
Ed Roberson Named BLM Utah State Director *(BLM, 8/24)*

The Bureau of Land Management (BLM) announced that it is appointing veteran BLM manager Edwin L. Roberson as the BLM Utah State Director, a key leadership position based in Salt Lake City.

Roberson, a 37-year career leader with the BLM, comes to the Utah post after serving as Director of the BLM National Operations Center in Denver, where he oversaw the Agency's operational and technical support for information technology, finance, and human resources. Roberson also served in top leadership roles in New Mexico, and held senior level positions in Washington, D.C., including a seven-year tenure as the BLM Assistant Director for Renewable Resources and Planning, a position that oversees a number of BLM resource programs.

"Ed is a good listener, a proven coalition-builder and a natural leader. We are fortunate to have his experience and expertise in Utah," said BLM Director Neil Kornze. "Ed has guided some of the agency's most important work during his career, and his experience working with local communities makes him the perfect fit for this job."

As BLM Utah State Director, Roberson will lead a team that administers 23 million acres of public lands and 32 million acres of minerals and energy resources in Utah. BLM public lands in Utah feature some of the most spectacular scenery in the world, from snow-capped peaks of remote mountain ranges to colorful red-rock canyons. They offer a unique combination of archaeological, paleontological, and geological resources along with unmatched opportunities for many outdoor recreation activities. Roberson begins his new job October 3rd.



WestFAST News is published monthly. To get an Agency Announcement published or to get added to the WestFAST News distribution list contact:

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Check out the WestFAST Web Site: <http://www.westernstateswater.org/westfast>

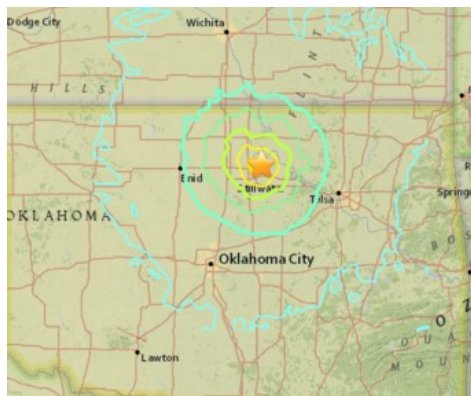


Update: Magnitude 5.6 Earthquake in Oklahoma (USGS, 9/3)

A magnitude 5.6 earthquake struck in Oklahoma on September 3, 2016 at 12:02:44 UTC (7:02 am local time).

Visit the [USGS event page](#) for more details on this earthquake.

Without studying the specifics of the wastewater injection and oil and gas production in this area, the USGS cannot currently conclude whether or not this particular earthquake was caused by industrial-related, human activities. However, it is known that many earthquakes in Oklahoma have been triggered by wastewater fluid injection. The USGS will continue to process seismic data that will help answer this question.



Oklahoma earthquake location

An earthquake of comparable size last occurred in Oklahoma in 2011. A magnitude 5.1 earthquake also struck in Oklahoma on February 13, 2016.

Federal News

8/1: [Reclamation Releases Final Environmental Documents on Recapturing San Joaquin River Restoration Program Flows for One Year](#)

8/2: [NOAA: International report confirms Earth is hot and getting hotter](#)

8/2: [Reclamation Releases Draft Environmental Document to Supplement Flows in the Lower Klamath River with Trinity Reservoir Water](#)

8/2: [Reclamation: Colorado River More Important Than Ever](#)

8/9: [Nutrient Experiments May Help Gain a Better Understanding of Algal Blooms in Utah](#)

8/11: [Ecosystems in the Southeastern U.S. Are Vulnerable to Climate Change](#)

8/12: [2015 State of the Climate: El Niño came, saw, and conquered](#)

8/15: [Groundwater Recharge in Upper Colorado River Basin May Hold Steady Under Climate Change](#)

8/17: [July was hottest month on record for the globe](#)

8/18: [USGS Records Historic Flooding in South Louisiana](#)

8/18: [Water Levels Declining in Areas Along San Pedro River near Sierra Vista, Arizona](#)

8/18: [USDA to Fund Agricultural Wetland Mitigation Banks in 10 States](#)

8/19: [NASA Monitors the 'New Normal' of Sea Ice](#)

8/22: [USGS: Fighting the Floods](#)

8/25: [National Park Service 100th Birthday](#)

8/25: [More than a Century of USGS Water Quality Studies in National Parks](#)

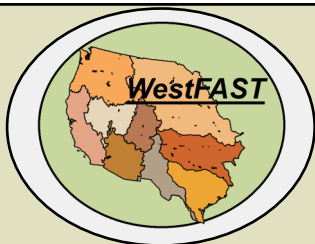
State News

8/1: [WATCH: Utah Gov. Herbert defends Salt Lake City in 'Sharknado 4'](#)

8/16: [Drought Update: California loses \\$600 million to drought, Lake Powell in peril](#)

Upcoming WSWC Meetings & Events

- 9/28-30 - [Fall 2016 \(182nd\) Council Meetings](#), St. George, Utah



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