

**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 News

September 2015

### EPA and State Agencies Continue to Monitor for the Effects of the August 5th Gold King Mine Release

On September 17, 2015, the U.S. Environmental Protection Agency (EPA) released a draft monitoring plan to further evaluate pre- and post-incident conditions following the August 5 Gold King Mine release in Colorado.

On August 5, 2015, EPA was conducting an investigation of the Gold King Mine near Silverton, Colorado, to assess the on-going water releases from the mine, treat the mine water, and assess the feasibility of further mine remediation. While excavating above the old adit, pressurized water began leaking above the mine tunnel, spilling about three million gallons of water stored behind the collapsed material into Cement Creek, a tributary of the Animas River.

EPA has worked with local and state officials to monitor the effects of the release. "EPA has been sampling conditions since the spill to ensure the safety of residents in the watershed," said EPA Administrator Gina McCarthy. "This monitoring plan represents the next phase of this important work, and reflects our commitment to continue working closely with state, local and tribal officials to evaluate the potential impacts of the spill."

Surface water and sediment have returned to pre-event conditions, but the agency is continuing water sampling out of an abundance of caution. EPA is seeking input on the draft conceptual monitoring plan from the states of Colorado, New Mexico and Utah; the Navajo Nation, Southern Ute, and Ute Mountain Ute tribes; and local governments in the watersheds. EPA recently held a call with tribal, state, and local officials to discuss the draft plan and solicit their input. EPA is committed to monitor the rivers under differing seasonal conditions to determine if fluctuations in contaminant levels reflect pre-spill variability in the watershed.

Sampling activities will include water quality, sediment quality, biological community, and fish tissue under a variety of flow conditions at 23 sites in Cement Creek, the Animas and San Juan rivers and the upper sec-

tion of Lake Powell within Colorado, Southern Ute Reservation, New Mexico, Ute Mountain Ute Reservation, the Navajo Nation, and Utah.



Water monitoring taken in the Animas River near Durango, CO on August 14, 2015. (Credit: Eric Vance/EPA)

After collecting data for one year, EPA will review results to determine appropriate next steps. EPA is coordinating with its regulatory partners and affected stakeholders to understand other organizations' monitoring efforts, prevent duplication, and promote data sharing.

Updated data, documents and other information can be found at the [Gold King Mine response website](#): Click [here](#) to review the Monitoring Plan.

### NASA Offers Online Training in Use of Satellite Mission Data in Water Resource Management

NASA will offer online training via webinar through its Applied Remote Sensing Training (ARSET) Program. The NASA Applied Science Program (ASP), the Capacity Building Program and ARSET, conducts several webinars per year on water resource management. The current training, planned for October and November, focuses on data access best practices, newest versions of data/tools, and case studies on applications.

The online training will provide: 1) information about availability and access to global freshwater data for applications in drought and agricultural management, flooding and reservoir management from NASA remote sensing observations and land-atmosphere models; and 2) GIS-based analysis of regional water budget for applications in water resources. The weekly training schedule is below.

Week-1 (Oct. 13): Overview of NASA Satel-



lite Missions and Land-Atmosphere Models Relevant to Water Resources Management: NASA satellite missions useful for water resources observations, Global and North American Land Data Assimilation Models, Strengths and limitations of remote sensing - and model-based data, and Examples of water resources data applications

Week-2 (Oct 20): Precipitation and Soil Moisture Data: Satellites/sensors and models for precipitation (rain and snow), Satellites/sensors and models for soil moisture, Data access and applications.

Week-3 (Oct. 27): Run off/Streamflow and Reservoir Height Data: Run off and streamflow from hydrology and land-atmosphere models, Satellites/sensors for lake heights, data description, Data access and applications

Week-4 (Nov. 3): Evapotranspiration and Ground Water Data: ET based on water-balance and Energy-balance techniques, Satellite/sensor for ground water, data description, Data access and applications

Week-5 (Nov. 10): Regional Water Budget Estimation and Water Resources Data Applications: Water budget estimation over selected watersheds/river basins/countries using Land Data Assimilation Model, GIS-based analysis of water resources data applications

Registration for the webinar series is free and open but you must register at the link shown below. Space is limited and preference will be given to agencies engaged in water resource management and decision making around the world. Register here (Please only register for one time slot):

[Register for the 10:00 AM \(EDT\) Eastern Daylight Time here.](#)

[Register for the 2:00 PM \(EDT\) Eastern Daylight Time here](#)

For more information on this training and the ARSET Program, please see the [training webpage](#).

## NASA, USGS, USDA Host DC workshop on Water Security and Evapotranspiration Mapping (WSWC, 9/18)

On September 15-17, NASA, USGS, USDA and the World Bank hosted a workshop on Water Security and Evapotranspiration Mapping in Washington, D.C. Brad Doorn, NASA Headquarters and a WestFAST member, welcomed some 60 attending in person and dozens participating by webinar from around the world. WSWC Executive Director Tony Willardson provided a keynote address on the importance of ET measurement in managing western states' water resources. Case studies of operational applications were highlighted covering the Upper Colorado, Green, Central Platte and Snake River Basins, as well as groundwater resources. Field scale applications were also presented for custom irrigation scheduling and crop management.

Tim Petty, Deputy Legislative Director for Senator James Risch (R-ID), and former Deputy Assistant Secretary, Water and Science, Department of the Interior, provided a congressional perspective on water security and sustainable agricultural water supplies. Various

technological resources for observing and mapping ET were presented. Moreover, emerging technologies and applications were presented for local, regional, national and international applications using thermal imaging, cloud computing, airborne mapping tools, small satellites, unmanned aerial vehicles (UAVs), and center pivot mounted infrared sensors. Various opportunities were presented for water resources management applications from future NASA missions, including uses for microwave, gravitational measurement and other capabilities.

Notably there was participation by the European Space Agency, Chinese Academy of Sciences and United Nations Educational, Scientific and Cultural Organization (UNESCO), with a discussion of integrating international capabilities to meet global measurement needs for water security and sustainability applications.

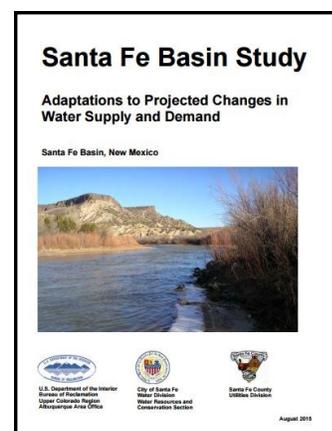
## Reclamation Basin Study Projects Shortfall in Future Water Supply for Santa Fe Basin in New Mexico (USBR, 9/10)

On September 10th, the Bureau of Reclamation released a study of the Santa Fe Basin that found that the water supply for Santa Fe, absent implementation of new strategies, is not adequate to meet future demands even without the influence of climate change.

“Basin Studies provide important information on projected water supplies and demands so water managers can develop strategies to meet the water needs of their residents,” Reclamation Commissioner Estevan López said. “Working collaboratively is the most effective way to manage water resources and the city and county of Santa Fe will benefit from the results of this study.”

The Santa Fe Basin Study identifies shortages in the water supply and potential adaptation strategies to meet the water needs described in the basin's 40-year water demand projections. The area's population is expected to increase about 80 percent by 2055 and, unless action is taken, would be expected to result in a shortfall of about 5,155 acre-feet of water per year, the amount of water that provides for more than 20,000 people. When different climate change scenarios were incorporated into the study, water shortfalls of between 6,342 acre-feet to 9,323 acre-feet per year were projected.

Reliability of the San Juan-Chama Project was also studied under various climate change scenarios. The study found that projected flows within the project would decrease by 25 percent overall. Flows would decrease in the summer but would increase in the spring. Storage in Heron Reservoir is projected to be reduced and sufficient water for a full allocation to contractors will be available



Click the Santa Fe Basin Study report cover page above to view the report



less frequently.

Developing strategies to adapt to expected changes in water supplies is another important component of the Santa Fe Basin Study and included input from the public, the city of Santa Fe and the county of Santa Fe. The portfolio of items selected to study further include the use of reclaimed water, water conservation, direct injection and infiltration for aquifer storage and recovery, and obtaining additional water rights.

Reclamation, the city of Santa Fe and the county of Santa Fe, which co-funded the study, developed the Santa Fe Basin Study. The basin includes the upper Rio Grande watershed, tributaries within the San Juan River watershed, a portion of water delivered to Santa Fe through Reclamation's San Juan-Chama Project, and groundwater aquifers of the Santa Fe area. The basin includes the city of Santa Fe, the main municipality in the watershed, and the northern portion of Santa Fe County.

The Basin Study Program is part of the WaterSMART Program. WaterSMART is the Department of the Interior's sustainable water initiative that uses the best available science to improve water conservation and help water resource managers identify strategies to narrow the gap between supply and demand. Click [here](#) to learn more about WaterSMART.

## USGS Publishes Tool to Predict Pesticides in Streams and Rivers *(USGS, 9/16)*

A new interactive mapping tool provides predicted concentrations for 108 pesticides in streams and rivers across the Nation and identifies which streams are most likely to exceed water-quality guidelines for human health or aquatic life.

Citizens and water managers can create maps showing where pesticides are likely to occur in local streams and rivers and evaluate the likelihood of concentrations exceeding water-quality guidelines. The predictions can also be used to design cost-effective monitoring programs.

"Because pesticide monitoring is very expensive, we cannot afford to directly measure pesticides in all streams and rivers," said William Werkeiser, USGS Associate Director for Water. "This model can be used to estimate pesticide levels at unmonitored locations to provide a national assessment of pesticide occurrence."

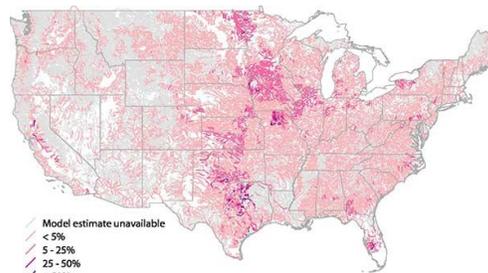
"The USGS pesticide model is a valuable tool that we can use, along with other modeling and analytical tools, to evaluate data as we complete ecological risk assessments for pesticides," said Dr. Donald J. Brady, Director, Environmental Fate and Effects Division, Office of Pesticide Programs, U.S. Environmental Protection Agency.

"Streams and rivers most vulnerable to pesticides can be assessed," said Wes Stone, USGS hydrologist and lead developer of the model. "For instance, many streams in the Corn Belt region are predicted to have a greater than 50 percent probability that one or more pesticides exceed aquatic-life benchmarks."

The online mapping tool is based on a USGS statistical model —

referred to as Watershed Regression for Pesticides (or "WARP") — which provides key statistics for thousands of streams, including the probability that a pesticide may exceed a water-quality benchmark and the reliability of each prediction.

The WARP model estimates concentrations using information on the physical and chemical properties of pesticides, agricultural pesticide use, soil characteristics, hydrology, and climate.



**Example of mapping tool product— modeled national perspective of the prevalence of the insecticide chlorpyrifos, 2012 data. Click on the map to view the Watershed Regressions for Pesticides (WARP) tool.**

The model used by the mapping tool is based on data from USGS monitoring of pesticides in streams across the Nation since 1992

as part of the National Water-Quality Assessment (NAWQA) Program. Since 1991, NAWQA has been a primary source of nationally consistent data and information on the quality of the Nation's streams and groundwater. Objective and nationally consistent water-quality data and models provide answers to where, when, and why the Nation's water quality is degraded and what can be done to improve it for human and ecosystem needs.

Interactive mapping of predicted pesticide levels for streams in the U.S. are available online.

National maps and trend graphs of agricultural use of 459 pesticides from 1992 to 2012 for the conterminous U.S. are also available online.

## WSWC/CDWR and NOAA to Hold Workshop on Seasonal Climate Forecasting for Western Water Resource

The WSWC, the California Department of Water Resources (CDWR), and the National Oceanic and Atmospheric Administration (NOAA) will cosponsor a workshop on advancing seasonal prediction for western water resources. The WSWC/CDWR have invited WSWC members, representatives from water management agencies and federal agencies to address seasonal forecasting capabilities. The workshop is being held on October 21-22, 2015 in Salt Lake City. Participants will address opportunities for and challenges to advancing our forecasting capabilities and improving our predictive skill.

Presentations and discussions will include the state of the science and future research focus for seasonal forecasting, and the approach to the development of a seasonal precipitation forecast improvement project



## WestFAST Webinar Series Continues in October With Presentations on USFS Water Resource Activities

WestFAST representatives collaborate among themselves to improve efficiency in carrying out their agencies' water-related missions. In this role, WestFAST initiated a "Special Topics" Webinar Series to present, and allow discussion on a range of WestFAST federal agency water-resource activities with the objective of improving awareness of and collaboration in water programs.

In September 2015, WestFAST members and webinar participants reviewed selected USGS Water Resources Programs with focus on the [National Water Census](#). Pixie Hamilton, USGS Cooperative Water Program National Coordinator and Sonja Jones, USGS Water Census Programs, led an overview of the USGS Water Availability and Science Program. Ms Jones discussed the overarching goals of these programs which include providing a Nationwide system to deliver water accounting information. Ms Jones reported that "key components of this system will include regional and water-shed scale water budgets." She reviewed programs within the National Water Census to improve the computation of regional and national water use including a new "States Water Use Grants Program" which will "provide financial resources, through cooperative agreements with State water resource agencies for water use tasks".

Click [here](#) to find September WestFAST webinar presentation materials.

On October 29th, Jean Thomas, USDA Forest Service Water Uses Program Leader, will review priority water resource issues and programs in the Forest Service, and Daniel Isaak, USFS Research Fish Biologist will give an overview of activities and products of the [USFS NorWest stream-temperature database and modeling program](#). Find information for the September WestFAST Webinar [WestFAST webpage](#).

## Federal News

9/1: [EPA Kicks Off Campus RainWorks Challenge to Develop Innovative Approaches to Stormwater Management](#)

9/4: [Reclamation to Deliver Water to Lower Klamath National Wildlife Refuge, Mitigating Drought and Assisting in Fall/Winter Migration](#)

9/9: [Reclamation Awards \\$11.8 Million Contract to Build Latest Portion of Navajo-Gallup Water Supply Project](#)

9/9: [NOAA report finds El Niño may accelerate nuisance flood-](#)

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9/10: [Reclamation Releases Final Environmental Impact Statement for the Central Valley Project Municipal and Industrial Water Shortage Policy](#)

9/15: [New Strategic Plan Targets Current, Future Challenges to Fish and Aquatic Resources](#)

9/15: [EPA Updates Gold King Mine Response Website with Sampling Results, Documents](#)

9/17: [USDA Partners with EPA, Offers New Resources to Support Water Quality Trading](#)

9/21: [El Niño and La Niña will Exacerbate Coastal Hazards Across Entire Pacific](#)

9/24: [EPA Finalizes Rule to Modernize Clean Water Act Reporting](#)

9/25: [Reclamation Selects Roland Springer to Lead the Snake River Area Office](#)

9/25: [Reclamation Awards a \\$1 Million Contract to Upgrade Four Dolores Project Pumping Plants](#)

9/28: [USGS-Storms after Wildfire Lead to Impaired Water Quality](#)

9/29: [History of Minidoka Dam - One of Reclamation's Oldest Dams](#)

9/30: [Reclamation Releases Draft Environmental Document on the Carson River Floodplain Rehabilitation and Habitat Restoration Project](#)

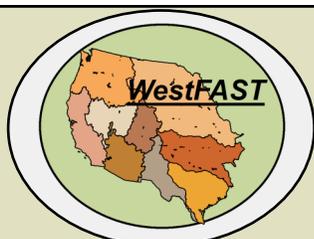
9/30: [BLM Announces Leadership Appointments in California, New Mexico, and Nevada](#)

9/30: [September 2015 was second warmest September for contiguous U.S.](#)

9/30: [Global average temperature record high for August, June-August, and year to date](#)

## Upcoming WSWC Meetings & Events

- October 20-21— NOAA/WSWC/CDWR Workshop on Advancing Seasonal Climate Prediction, Salt Lake City, Utah



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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