

**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.

### Membership:

**Becky Fulkerson**, (Chair)  
Reclamation [rfulkerson@usbr.gov](mailto:rfulkerson@usbr.gov)

**Roger Gorke**, (Vice Chair), EPA  
[Gorke.roger@epa.gov](mailto:Gorke.roger@epa.gov)

**Jean Thomas**, Forest Service  
[jathomas02@fs.fed.us](mailto:jathomas02@fs.fed.us)

**Dionne Thompson**, Reclamation  
[dethompson@usbr.gov](mailto:dethompson@usbr.gov)

**John D'Antonio**, USACE  
[John.R.D'Antonio@usace.army.mil](mailto:John.R.D'Antonio@usace.army.mil)

**Pixie Hamilton**, USGS  
[pahamilt@usgs.gov](mailto:pahamilt@usgs.gov)

**Larisa Ford**, BLM  
[laford@blm.gov](mailto:laford@blm.gov)

**Andrew Hautzinger**, FWS  
[Andrew.Hautzinger@fws.gov](mailto:Andrew.Hautzinger@fws.gov)

**Mike Strobel**, NRCS  
[michael.strobel@por.usda.gov](mailto:michael.strobel@por.usda.gov)

**Roger Pulwarty**, NOAA  
[roger.pulwarty@noaa.gov](mailto:roger.pulwarty@noaa.gov)

**Brad Doorn**, NASA  
[bradley.doorn@nasa.gov](mailto:bradley.doorn@nasa.gov)

**Craig Zamuda**, DOE  
[Craig.Zamuda@Hq.Doe.Gov](mailto:Craig.Zamuda@Hq.Doe.Gov)

**Marc Kodack**, DOD  
[marc.d.kodack.civ@mail.mil](mailto:marc.d.kodack.civ@mail.mil)

**Ed Harvey**, NPS  
[forrest\\_harvey@nps.gov](mailto:forrest_harvey@nps.gov)

**Patrick Lambert**, Federal Liaison  
[patlambert@swc.utah.gov](mailto:patlambert@swc.utah.gov)



# WestFAST News

April 2015

## WestFAST Plays Large Role in WSWC April Meetings *(WSWC)*

On April 15-17, the Western States Water Council (WSWC) held its spring meetings in Tulsa, Oklahoma. WestFAST members and other WestFAST agency representatives presented information, or participated in discussions, in meetings of all WSWC committees during the week.

Tom Iseman, Deputy Assistant Secretary of the Interior for Water and Science, gave a remote update via telephone on Interior's

water-related activities, including Interior's work to finalize guidelines on Department of the Interior implementation of the Principles and Requirements that the Administration enacted last year to guide federal investments in water resource projects. Bureau of Reclamation Drought Coordinator Avra Morgan joined Tom to discuss a new drought response program, which will provide funding for drought contingency planning, projects that build long-term resiliency to drought, and emergency drought actions (see: <http://www.usbr.gov/drought/>).

WestFAST member Kevin Werner, Regional Climate Services Director for the National Oceanic and Atmospheric Administration's (NOAA) Western Region, discussed a recent assessment his agency prepared on California's record-breaking drought. The assessment found that water decision makers require a "whole" review of water system environments. As a result, it recommended that NOAA partner with other federal and state agencies and stakeholders for modeling and monitoring activities to estimate and forecast full natural flows in California's rivers and streams.

WestFAST member Andrew Hautzinger, a hydrologist with the U.S. Fish and Wildlife Service (FWS), joined FWS biologist Daniel Fenner to discuss Endangered Species Act issues in the Southwest. They briefed WSWC on FWS' participation in Interior's



**WestFAST Chair Becky Fulkerson (Reclamation) reviews WestFAST accomplishments with WSWC**

Landscape Conservation Cooperative for the Great Plains, greater use of state information in listing decisions, species status assessments, multi-agency programmatic consultations, and mitigation and "banking" efforts for listed species.

Environmental Protection Agency (EPA) staff provided a series of telephone updates to the WSWC Water Quality Committee on Clean Water Act (CWA) issues and on EPA's study of hydraulic fracturing and potential impacts on drinking water resources. Fred Leutner, Senior Advisor for EPA's National Water Quality Standards Branch, and Sarah Furtak with EPA's Office of Wetlands, Oceans, and Watersheds, reported on the status of rulemaking EPA is developing to clarify the process that tribes must follow to obtain "treatment as states" authorization to administer CWA regulatory programs and to operate Total Daily Maximum Load programs. EPA conducted pre-proposal outreach with the WSWC and other state and tribal organizations on this topic last fall, and expects to conduct similar outreach once it publishes the rules in mid-2015. Jeanne Briskin with EPA's Office of Research and Development, gave an update on the status of a multi-year study regarding possible links, if any, between hydraulic fracturing and drinking water. Jeanne said the study, which Congress ordered in 2011, includes 17 separate research projects. She also said EPA's Science Advisory Board will likely release a draft assessment for public comment this spring. More information on this study can be found at this [link](#).

Gary Rowe with the U.S. Geological Survey's National Water Quality Assessment (NAWQA) Program, gave a presentation on a recent [NAWQA assessment of the quality of the nation's groundwater](#). The assessment found that geologic sources (arsenic, radon, manganese, and uranium) cause slightly less than 80% of cases in which groundwater quality exceeds human health benchmarks. Manmade sources (nitrates, pesticides, and solvents) make up a little less than 20% of those cases where groundwater quality exceeds benchmarks.

## WestFAST Discusses Federal Water Data Activities with WSWC

Patrick Lambert, WestFAST Federal Liaison to the Western States Water Council (WSWC), briefed the WSWC Water Quality Committee,



during their April Meetings in Tulsa Oklahoma, on selected federal water-data activities including continued progress on the “Water Quality Portal.” The Water Quality Portal is a cooperative service sponsored by the U.S. Geological Survey (USGS), the Environmental Protection Agency (EPA) and the National Water Quality Monitoring Council that integrates publicly available water quality data from principal USGS, EPA and data bases. Patrick



Screen shot of National Groundwater Monitoring Network web-based mapping application—click the figure to visit the NGWMN homepage

reported that “the Portal continues to see steady increase in visitation and use, with March 2015 marking the first time website visitation exceeded 2000 visits, a 45% increase over March 2014.” He noted that in those visits, users generated 615 different web maps on the Portal page while downloading over 500 million discrete result records.

Patrick also reported on the transition from pilot phase to implementation phase of the National Groundwater Monitoring Network (NGWMN). The NGWMN, a product of the Federal Advisory Committee on Water Information, is a compilation of selected groundwater monitoring wells from Federal, State, and local groundwater monitoring networks across the nation in a web-based mapping application. The portal contains current and historical data including water levels, water quality, lithology, and well construction. Patrick reported that the NGWMN is transitioning from a pilot phase into full implementation and will be adding additional data providers to the network. Patrick stated that “funds received in fiscal-year 15 for SECURE Water Act activities focused on NGWMN implementation initially will include cooperative agreements with states” and that “the USGS is working through the required federal paperwork nec-

essary to establish these agreements to begin the transfer of funds to state water-resource agencies that wish to participate.”

Finally Patrick updated the committee on the National Water Use Information Program—a USGS program conducted in cooperation with local, State, and Federal environmental agencies to collect water-use information. Patrick said that “fiscal-year 2015 Water Use Program appropriations will facilitate the integrating of water use or water availability dataset of State water resource agencies into USGS datasets.” He noted that the “first appropriation of \$1,500,000 in 2015 will be delivered to states non-competitively—each state will receive an equal amount.” Patrick stated that “beginning in FY16 the grants will be awarded as part of a targeted competitive process and announced through Grants.gov.”

## NASA Soil Moisture Mission Produces First Global Maps *(NASA, April 21)*

NASA’s new Soil Moisture Active Passive (SMAP) observatory has successfully re-tested its science instruments and generated its first global maps, a key step to beginning routine science operations in May.

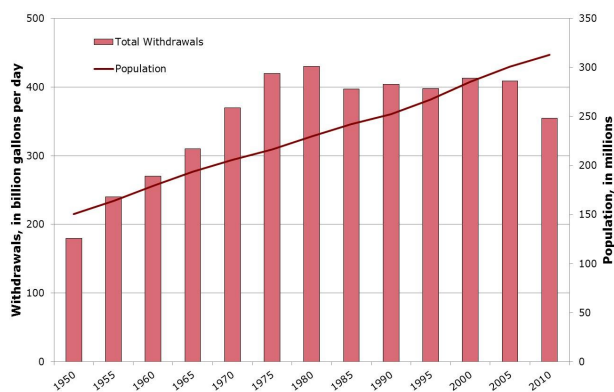
SMAP launched Jan. 31 on a minimum three-year mission to map global soil moisture and detect whether soils are frozen or thawed. The mission will help scientists understand the links among Earth’s water, energy and carbon cycles; help reduce uncertainties in predicting weather and climate; and enhance our ability to monitor and predict natural hazards such as floods and droughts.

In late March, mission controllers at NASA’s Jet Propulsion Laboratory in Pasadena, California, successfully spun SMAP’s 20-foot-wide (6-meter) antenna up to its full speed of 14.6 revolutions per minute in a two-step process. SMAP’s spinning antenna makes cone-shaped scans across Earth’s surface, measuring a 620-mile-wide (1,000-kilometer) swath of the ground as it flies above Earth from pole to pole at an altitude of 426 miles (685 kilometers). The wide swath width and polar orbit allow SMAP to map the entire globe with high-resolution radar data every two to three days.

With its spin-up activities complete, the observatory’s radar and radiometer instruments were powered on from March 31 to April 3 in a test designed to verify the pointing accuracy of the antenna and the overall performance of the radar and radiometer instruments. The radar data acquired from the test have been processed to generate data products with a spatial resolution of about 19 miles (30 kilometers). The first full global maps produced during the test are online at: <http://photojournal.jpl.nasa.gov/catalog/PIA18057>, and <http://photojournal.jpl.nasa.gov/catalog/PIA18058>.

SMAP’s radar, operating at 1.2 gigahertz, works by transmitting microwave pulses to the ground and receiving and measuring the strength of the signals that bounce back from Earth, called backscatter. Water -- including water in soil -- responds differently than dry soil does to microwaves. Water changes the strength of backscatter and microwaves’ polarization (the orientation of the electrical field of the microwaves). Therefore, backscatter from soil containing more moisture is stronger and is polarized differently than backscatter from drier soil. The extent of this difference

Trends in population and total withdrawals, 1950-2010



Graph indicating national water-use trends from most recent USGS use compilation—Click [here](#) to view report





allows scientists to distinguish the amount of moisture present in the soil. SMAP's radar emits pulses with two different polarizations, horizontal and vertical, to make a more complete measurement of this effect.

Like the radar, SMAP's radiometer detects differences in microwaves caused by water in soil; but it measures Earth's natural microwave emissions at the frequency of 1.4 gigahertz. Around the globe, the most striking difference in these natural emissions is between water and land surfaces. A desert emits microwaves at about three times the rate a lake does. Because the difference is so large, even a small amount of moisture in soil causes a change that a radiometer can measure accurately.

Scientists will combine measurements from SMAP's radar and radiometer sensors to capitalize on the strengths of each and work around their weaknesses. The radar alone can produce a soil moisture measurement with a spatial resolution of about 1.9 miles (3 kilometers), but the measurement itself is less accurate than the one made by the radiometer. The radiometer alone achieves a highly accurate observation of soil moisture but with a much poorer spatial resolution of about 25 miles (40 kilometers). By combining these separate measurements through advanced data processing, SMAP will provide the user community with a combined soil moisture measurement that has high accuracy and a resolution of 5.6 miles (9 kilometers).

For more information on SMAP, click [here](#)

## Snowpack Melts Early Across the West

(NRCS, April 10)

West-wide snowpack is melting earlier than usual, according to data from the fourth 2015 forecast by the United States Department of Agriculture's Natural Resources Conservation Service (NRCS).

"Almost all of the West Coast continues to have record low snowpack," NRCS Hydrologist David Garen said. "March was warm and dry in most of the West; as a result, snow is melting earlier than usual."

Historically, April 1 is the peak snowpack. This year, the peak came earlier. There was little snow accumulation in March, and much of the existing snow has already melted.

"The only holdouts are higher elevations in the Rockies," said Garen. "Look at the map and you'll see that almost everywhere else is red." Red indicates less than half of the normal snowpack remains.

A consequence of the early snowmelt is that Western states will have reduced streamflow later this spring and summer.

In Western states where snowmelt accounts for the majority of seasonal water supply, information about snowpack serves as an indicator of [future water availability](#). Streamflow in the West consists largely of accumulated mountain snow that melts and flows into streams as temperatures warm in spring and summer. National Water and Climate Center scientists analyze the snowpack, precipitation, air temperature and other measurements taken from remote

sites to develop the water supply forecasts.

NRCS monitors conditions year-round and will continue to issue monthly forecasts until June. The water supply forecast is part of several USDA efforts to improve public awareness and manage the impacts of climate change, including drought and other extreme weather events. Through the creation of the National Drought Resilience Partnership, launched as part of the President's Climate Action Plan, federal agencies are working closely with states, tribes and local governments to develop a coordinated response to drought.

Click [here](#) to view information by state.

## NOAA to Host WGA Drought Forums (WSWC)

NOAA will host two meetings in support of the Western Governors' Association (WGA) [Drought Forum](#). The first will be in July on drought management. State drought coordinators will be invited to attend the meeting, which will seek to foster communication and coordination on drought-related issues. In addition, the discussions that result from this meeting will help inform a second meeting that will include state foresters and fire managers and will focus on wildfire management. It will take place in September or October, 2015. The WGA will provide more specific information on their [webpage](#) as it becomes available.

## WestFAST "Special Topics" Webinar Series Marks 4th Month with Discussion on Fracking

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. The WestFAST May webinar briefed attendees on selected federal activities on hydraulic fracturing. The webinar acted as an extension of WestFAST information sharing in the Western States Water Council (WSWC) April meetings in Tulsa, Oklahoma and allowed additional detail to be given on selected assessments to a larger federal and state audience.

Three water-resource assessment areas on unconventional oil and gas development activities were discussed:

- Environmental Protection Agency (EPA) study of potential impacts of hydraulic fracturing on drinking water resources: Presented by Jeanne Briskin ([briskin.jeanne@epa.gov](mailto:briskin.jeanne@epa.gov)) Hydraulic Fracturing Research Coordinator, EPA Office of Research and Development;
- Trends in water quality in areas of unconventional oil and gas development – Watershed/surface-water resources: Presented by Zach Bowen ([bowenz@usgs.gov](mailto:bowenz@usgs.gov)) Ecosystem Dynamics Branch, U.S. Geological Survey (USGS) Fort Collins Science Center; and



- Injection induced earthquakes: Presented by Bill Ellsworth (ellsworth@usgs.gov), USGS Earthquake Science Center Staff Director.

Presentation materials for the April webinar can be viewed [here](#).

In the scheduled May webinar, WestFAST and the [Western Regional Partnership](#) (WRP) will host a presentation and primer on western water law and policies. The WRP provides a framework for collaboration among Federal, State and Tribal leadership on emerging issues in the states of Arizona, California, Nevada, New Mexico and Utah to develop solutions that support and protect natural resources, while promoting sustainability, homeland security and military readiness. Tony Willardson, Executive Director of the WSWC will lead this month's discussion with WestFAST and WRP on the varying approaches to water right allocation in the west and western states' concepts of water supply and availability.

For further information on the WestFAST past and future webinars click [here](#).

## Federal News

- 4/1: [NASA: California Tuolumne Snowpack 40 Percent of Worst Year](#)
- 4/2: [Reclamation and U.S. Army Corps of Engineers to Release 2015 Annual Operating Plan for Middle Rio Grande](#)
- 4/3: [New Website Provides Map-Based Groundwater Levels of the Upper Klamath Basin](#)
- 4/6: [Yakima Basin Water Supply - April Forecast Released](#)
- 4/6: [Reclamation Issues Snowmelt Forecast for North Platte](#)
- 4/7: [Multiple Satellite Eyes to Track Algal Threat to U.S. Freshwater](#)
- 4/7: [EPA Releases New Website Enabling the Public to Track Compliance Status of Public Water Systems](#)
- 4/9: [USDA invests in critical dam rehabilitation and assessment projects in 23 States](#)
- 4/10: [The Water-Energy Nexus: An Earth Science Perspective](#)
- 4:13: [Coal-Tar-Sealant Runoff Causes Toxicity and DNA Damage](#)
- 4/15: [April Showers may Bring May Flowers, but Winter Snow is Water in the Bank](#)

4/21: [DOI, EPA, NOAA announce Resilient Lands and Waters Initiative to prepare natural resources for climate change](#)

4/21: [From Texas to Maine, NOAA's expanded flood information tool promotes resilience](#)

4/21: [DOI, EPA, NOAA announce Resilient Lands and Waters Initiative to prepare natural resources for climate change](#)

4/22: [Reclamation Releases Environmental Documents for a Temporary Warren Act Contract for Storage and Conveyance](#)

4/23: [New Insight on Ground Shaking from Man-Made Earthquakes](#)

## State News

4/7: [Drought Forum Webinar: Tip of the Spear: The Horizon for Drought Data and Technology](#)

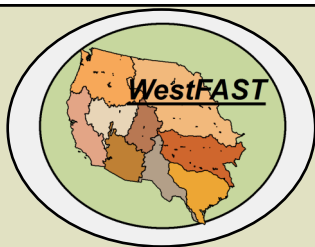
4/8: [Drought Update: Gov. Sandoval creates Nevada Drought Forum](#)

4/14: [WGA Executive Director Jim Ogsbury testifies before House Natural Resources Water Subcommittee](#)

4/18: [Drought Declaration Expanded In Washington State, Coming Soon In Oregon](#)

## Upcoming WSWC Meetings & Events

- May 27-29, 2015, WSWC/CDWR Precipitation Forecasting Workshop, San Diego, California, Doubletree San Diego Downtown
- June 24-26, 2015, WGA Annual Meeting, Lake Tahoe, Nevada
- July 8-10, 2015, Summer (178th) Council Meeting and WSWC 50th Anniversary, Lake Tahoe, Nevada



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Patrick M. Lambert, WestFAST Federal Liaison  
Email: [patlambert@wswc.utah.gov](mailto:patlambert@wswc.utah.gov)  
Phone: 801-685-2555

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