

**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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## USGS is Near the Midpoint of Survey of Ground Water Resource *(USGS 12/07/17)*

From 2012 – 2023, the U.S. Geological Survey (USGS) is assessing groundwater throughout the country through extensive sampling. The latest results from four regional aquifers have become available and add to previously released results for five other regional aquifers.

About half of the nation's population relies on groundwater for drinking water.

account for about 75% of the nation's groundwater pumped for public supply and 85% of the groundwater pumped for domestic supply. These 20 principal aquifers are being intensively evaluated by the USGS National Water-Quality Assessment Project between 2012 and 2023. Summary results for nine principal aquifers can be found on the next page.

"The National Water-Quality Assessment Project is critical in helping resource managers understand how contaminants are introduced into the environment. This knowledge helps them make informed decisions about how to manage the nation's water resources," said Don Cline, USGS Associate Director for Water.

### *Groundwater - The Invisible and Vital Resource*



(Jennifer Wilson, USGS)

**About 140 million people** rely on groundwater for drinking water

**68 regionally extensive aquifers (called principal aquifers)** supply nearly 50 percent of the Nation's drinking water

**20 principal aquifers** supply about 75 percent of the groundwater used for public supply; their water quality is being intensively evaluated from 2012-23

**670 deep public-supply wells** sampled from 9 principal aquifers in 2012-14

As the nation's population grows, the need for high-quality drinking water supplies becomes even more urgent.

The USGS has identified 68 principal aquifers, or regionally extensive aquifers that can be used as a source of drinking water, across the country. Groundwater pumped from these aquifers provides nearly 50% of the nation's drinking water. Twenty of these principal aquifers

"Understanding the quality of our water is critical in sustaining this resource for generations to come."

### **A Deep Look at an Unseen Resource**

USGS scientists are assessing water quality in source, or untreated, water from wells in principal aquifers. Most consumers receive water that has been treated by local utilities to meet federal drinking-water standards. Understanding what **constituents** are in untreated water can help decision makers manage and treat water resources.



Source: USGS

This comprehensive sampling, carried out over principal aquifers across the country, is focused on public-supply wells that tap deeper groundwater. Along with detailed information on geology, hydrology, geochemistry and chemical and water use, this data can be used to explain how and why aquifer vulnerability to contamination varies across the nation.



These regional aquifer studies provide water utilities and resource managers with information about:

- Regulated and unregulated constituents from natural or human sources; Pesticides, [volatile organic compounds](#), and other constituents of concern for human health;
- Present groundwater quality as a baseline for future conditions;
- Regional and national statistics on water quality, which serves as a context for individual wells;
- Differences in water quality in the shallow between the shallow and deep parts of aquifer systems;
- Environmental tracers that can be used to understand sources and sustainability of groundwater supplies; Local, regional and national hydrogeology.

[Southeastern Coastal Plain aquifer system](#) (southeastern U.S.)

[Coastal Lowlands aquifer system](#) (south central U.S.)

### Findings:

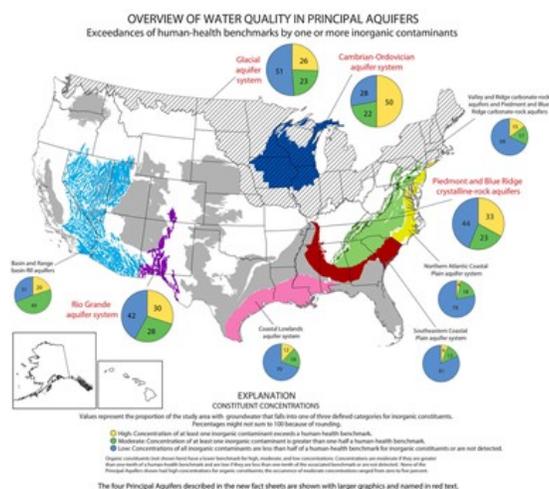
At least one inorganic constituent exceeded a [human-health benchmark](#) in 4 to 50% of samples collected from the nine principal aquifers.

Organic constituents were rarely measured at levels of concern. Constituents from geologic sources – primarily [trace elements](#) such as arsenic, fluoride and manganese – most commonly exceeded human-health benchmarks.

Radioactive constituents exceeded human-health benchmarks in a small percentage of samples –1 to 5% – in most of the nine aquifers studied. The exceptions were the Piedmont and Blue Ridge crystalline-rock aquifers and the Cambrian-Ordovician aquifer system where exceedances were 30 and 45%, respectively.

The [nutrient](#) nitrate was the only constituent from manmade sources that exceeded the human-health benchmark, typically at low levels (1 or 2 %). These exceedances occurred in the Glacial aquifer system, the Rio Grande aquifer system, and the Valley and Ridge and Piedmont and Blue Ridge carbonate-rock aquifers.

Full article with additional information on findings [is here](#)



[Click here to link to the full size map](#)

### New Regional Aquifer Studies

In-depth, regional-scale assessments conducted or planned for 2012 through 2023 focus on 20 of the most heavily used aquifers in the nation. Groundwater quality results for principal aquifers sampled in 2014 are available today, in addition to those previously available for principal aquifers samples in 2012-13, and summarized in the fact sheets below. Almost 670 deep public-supply wells were sampled within these aquifers, which were analyzed for a broad range of water-quality constituents.

[NEW: Rio Grande aquifer system](#) (southwestern U.S.)

[NEW: Glacial aquifer system](#) (northern U.S.)

[NEW: Cambrian-Ordovician aquifer system](#) (north central U.S.)

[NEW: Piedmont and Blue Ridge crystalline-rock aquifers](#) (eastern U.S.)

[Basin and Range basin-fill aquifers](#) (western U.S.)

[Valley and Ridge carbonate-rock aquifers and the Piedmont and Blue Ridge carbonate-rock aquifers](#) (eastern U.S.)

[Northern Atlantic Coastal Plain aquifer system](#) (east coast of U.S.)

## Western Governors' Association - Winter Meeting

(WSWC/WGA/WestFAST 12/8/17)

The Western Governors' Association's (WGA) winter meeting was held in Phoenix, Arizona on December 1-2. WGA Chair and South Dakota Governor Dennis Daugaard was joined at the meeting by WGA Vice Chair and Hawaii Governor David Ige. They were joined by ten others (see <http://westgov.org/meetings/2017-winter-meeting>).

The meeting featured keynotes by U.S. Department of Transportation Secretary Elaine Chao and Labor Secretary Alexander Acosta. Acosta focused on "The workplace is changing and Chao that "Safety will always be our number one priority and second is addressing infrastructure needs – repairing and rebuilding our infrastructure. And third, preparing for the future by encouraging innovation." Both affirmed their support of and need for education.

Among other speakers, the Governors also heard from Forest Service Chief Tony Tooke. Tooke said, "We see that there is a lack of sufficient coordination across landscapes and we see the excessive costs associated with environmental planning and environmental analysis.... So to improve our customer service, we need to better understand what the requirements are of each of those customers and expand our best practices, and we will apply those innovative tools to overcome obstacles that get in the way of us doing that."



The changing face of the West, workforce development, disaster preparedness, energy, infrastructure, transportation, state-federal relations and the ability of technology to impact the rural West were among the topics addressed by a series of panels. A couple with particular interest to WestFAST were with Bruce Hallin, Salt River Project stated: "Drought resilience requires significant investments, partnerships, and certainty.... Forest and watershed health depends on effective forest management." Also, Jeffrey Pillon, National Association of State Energy Officials: "The risk to the nation's infrastructure is significant when considering the potential economic and human impacts. "Last year, power outages cost the U.S. \$150 million; so far in 2017, we've had 15 weather disasters costing over \$1 billion."

A panel of historians lectured on state-federal relations. Patty Limerick, Center of the American West at the University of Colorado: "The Founders didn't have the West in mind. New institutions came into play to deal with the vast, rugged, often arid landscapes of the West." Peter Onuf, Thomas Jefferson Foundation Professor of History, Emeritus, University of Virginia: "American history is the history of federalism ... We need to keep looking back to our country's founding because it helps us understand the larger arc and how we fit into it." Leisl Carr Childers, Assistant Professor of History, University of Northern Iowa: "The story of public and federal lands was trial and error.... Crafting the legal structure was necessary where realities of rugged and arid lands were being sparsely populated. Federal government provided support to see that public lands could be used to still have economic value to the nation." Sarah S. Elkind, Professor of History, San Diego State University: "We want to look at the way federal policies still reflect the bottom-up process. In the Twentieth Century, lots of Americans went from seeing governments as protectors of liberty to the biggest threat."

The Western Governors will meet next for their 2018 Annual Meeting on June 25-27, in Rapid City, South Dakota.

## Wildfire Season Continues Parts of the West (CalFire/WestFAST 12/29/17)

December 3-7, 2017 many wildfires were started and burned out of control for several days in Southern California. The flames were fanned by strong Santa Ana Winds that gusted to 50 mph or greater in many areas with some of the mountain passes having winds more than 70 mph with widespread relative humidity's in the single digits. These fires have impacted and will continue to impact many WestFAST agencies, especially the U.S. Forest Service (USFS), National Oceanic and Atmospheric Administration (NOAA), Bureau of Land Management (BLM), U.S. Geological Survey (USGS) and the Environmental Protection Agency (EPA) for weeks to come.

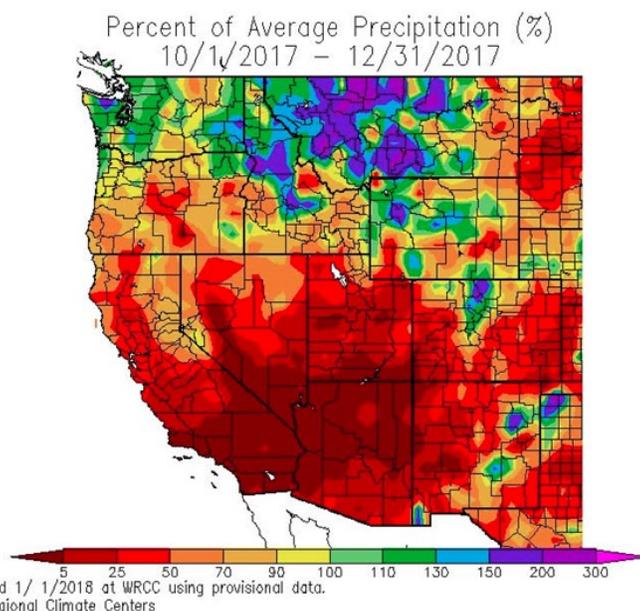
The Thomas Fire, now the largest wildfire in California history, which started on December 4, is still only 29% contained. The cause is still under investigation with 281,893 acres burned, 1,063 structures destroyed and 280 structures damaged. The fire fight continues with helicopter water drops and

aerial surveys. Crews are repairing landscape impacted by the construction of wildfire containment lines and other suppression activities. More than 157 miles of suppression repair to fire lines has been completed out of about 279 miles of containment lines.

The Fire, now mainly in Los Padres National Forest, is closed to the public within the Thomas Fire perimeter on the Santa Barbara and Ojai Ranger Districts. The federal Burn Area Emergency Response (BAER) team with representatives from many of the WestFAST agencies and California Watershed Emergency Response Team (WERT) are assessing areas within the Thomas Fire for burn severity and identifying locations at risk for flooding, debris flows and other post-fire hazards. After a wildfire, flood risk is usually highest until vegetation returns, which can take up to five years. Flood preparation information is available at [www.countyofsb.org/pwd/floodprep.sbc](http://www.countyofsb.org/pwd/floodprep.sbc) for Santa Barbara County and [www.venturacountyrecovers.org](http://www.venturacountyrecovers.org) for Ventura County. CalFire [http://www.fire.ca.gov/current\\_incidents](http://www.fire.ca.gov/current_incidents)

## Record Dry Conditions Prevail Across the Southwest (WestFAST/NOAA 12/29/17)

The map below from NOAA's Western Regional Climate Center shows the precipitation as a percent of average for the 2017-18 Wet Season from October through the end of December 2017. As you can see very dry conditions are occurring over the southwest with many areas having record low precipitation reported for this first half of the dry season.



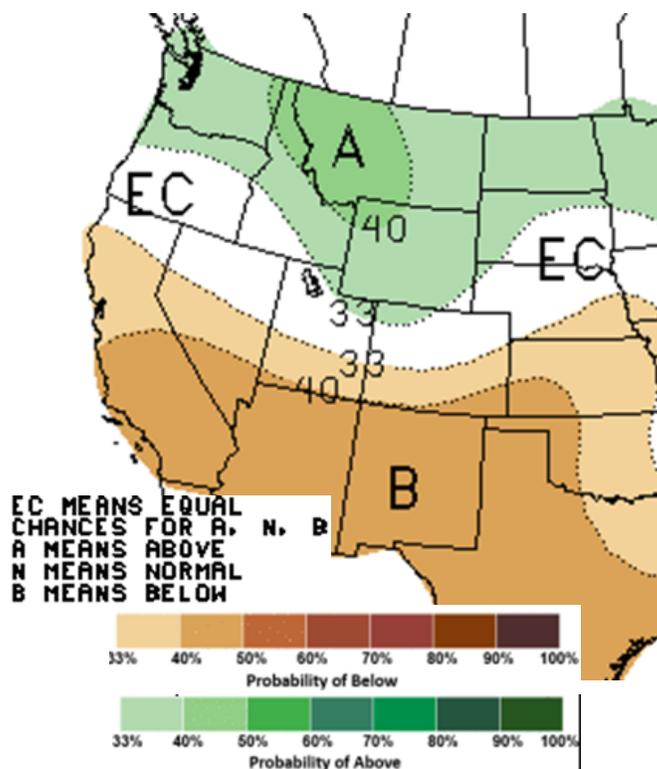
This is more extreme dry conditions than expected based on NOAA forecasts from earlier this year. The La Nina conditions are occurring and expected to continue through the winter season. The latest forecasts (**next page**) are indicat-



ing more below average precipitation expected for the remainder of the wet season (through March).



## NOAA Outlook: CPC Jan—Feb—March 2018



## Upcoming Meetings:

NASA's Western Water Applications Office and WSWC are co-sponsoring a **Water Information Management Systems (WIMS) Workshop** being held January 16-18, 2018 at the Jet Propulsion Lab in Pasadena, CA.

**The WSWC Spring (186<sup>th</sup>) Meetings** and Washington, DC Roundtable, co-sponsored with the Interstate Council on Water Policy will be held in Arlington, Virginia on March 14-15, 2018. A meeting with the WestFAST Principals is scheduled for March 16th at NOAA Headquarters in Washington, DC.

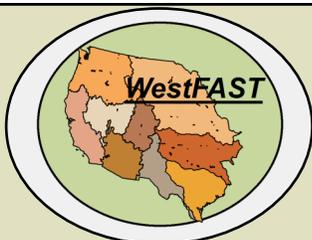
For further information, please see:

<http://www.westernstateswater.org/upcoming-meetings/>.

**Instream Flow Council Flow 2018** - Conference in Colorado: Managing Rivers, Reservoirs, and Lakes in the Face of Drought - Practical Tools and Strategies for Sustaining and Protecting Ecological Values of Water Fort Collins, Colorado April 24-26, 2018.

## Federal News (Control click to articles)

- 12/06: [Santa Ana Winds Help Flame Huge Firestorm](#)
- 12/06: [USDA Offers Assistance to Protect Privately-Owned Wetlands, Agricultural Lands and Grasslands](#)
- 12/08: [Connect NOAA Education at the Fall AGU Meeting](#)
- 12/08: [NASA Science Team Surveys California Fires with High-Altitude ER-2](#)
- 12/12: [NOAA/NASA's Suomi NPP Satellite Provides Information on California's Fires](#)
- 12/13: [Special Report: 2016 Extreme Weather Events and Ties to Climate change](#)
- 12/13: [California Forests, Air, Soil and Water Benefit from \\$84.6 Million EQIP Investment](#)
- 12/13: [Sierras Lost Water Weight & Taller During Drought](#)
- 12/14: [Colorado NRCS Announces \\$3.9 Million in Funding for 2018 Agricultural Conservation Program](#)
- 12/14: [Kansas NRCS and The Nature Conservancy Providing \\$1.4M Financial Assistance](#)
- 12/14: [Kansas NRCS and the Fish and Wildlife Foundation Providing \\$182,000 in Financial Assistance](#)
- 12/14: [Kansas NRCS and Kansas Department of Ag. Providing \\$1.4M Financial Assistance](#)
- 12/14: [BOR launches prize competition looking to eradicate invasive quagga and zebra mussels](#)
- 12/15: [Reclamation Commissioner Brenda Burman Addresses Colorado River Water Users Association](#)
- 12/15: [The Changing Arctic: a greener, warmer, and increasingly accessible region](#)
- 12/18: [Globe Had 3<sup>rd</sup> Warmest Year to Date and the 5<sup>th</sup> Warmest November on Record](#)
- 12/19: [USDA Seeks Applications for \\$10 Million in Conservation Innovation Grants](#)
- 12/19: [Art bridges the gap between nature and people](#)
- 12/20: [USDA Seeks Applications for Innovative Conservation Grants by Feb. 26, 2018](#)
- 12/20: [NRCS Delivers Healthier Natural Resources, Greater Public Safety, Better Service in 2017](#)
- 12/20: [NASA's Look At the Thomas Fire in California](#)
- 12/20: [USACE responds to hurricanes, wildfires](#)
- 12/21: [USDA Invests \\$30 Million in High-Priority Watersheds](#)
- 12/21: [Wet Winters May Not Dampen Small Wildfires](#)
- 12/21: [Forest Service, reflects on year of progress](#)
- 12/26: [Bureau of Reclamation supporting debris removal following October wildfires in NorCAL](#)
- 12/26: [Highlights 2017: NOAA Satellite Service](#)



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