

Western States Federal Agency Support Team (WestFAST) is a collaboration between 12 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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Wildfires Continue in the West

(WestFAST/USFS 08/31/18)

The month of August continues the summer of disastrous wildfires throughout the west. To keep up with locations (including Alaska) and nature of the fires, the U.S. Forest Service website has detailed information and real time updating. <https://www.fs.fed.us/science-technology/fire/information>

InciWeb is an interagency all-risk incident information management system. The web-based program provides information for wildland fire emergencies and prescribed fires, but can also be used for other natural disasters and emergency incidents such as earthquakes, floods, hurricanes, tornadoes, etc.

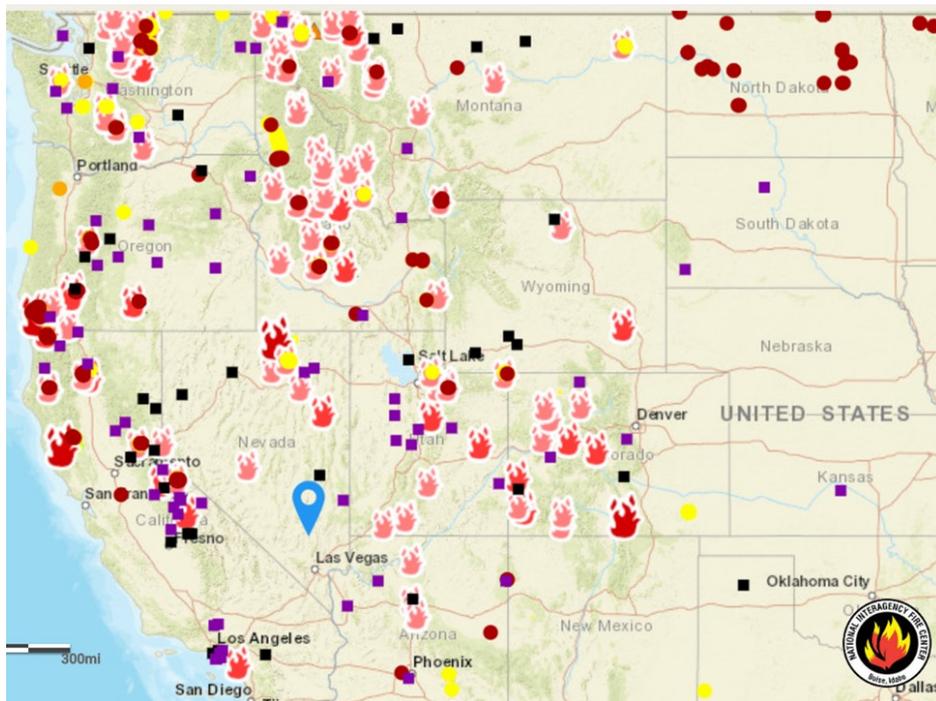
The system was developed with two primary missions:

- Provide the public a single source of incident related information; and
- Provide a standardized reporting tool for the public affairs community

Official announcements include evacuations, road closures, news releases, maps, photographs, and basic information and current situation about the incident.

NASA has provided great assistance in tracking the fires and smoke through the west. The huge Mendocino Complex made up of the River Fire and Ranch Fire is still blazing (8/29/18), it is almost fully contained. At 93% containment, it is expected that full containment of the fire could come as early as September 01, 2018. The total acreage that has been impacted by both fires is 459,102 acres making it by far the largest fire in California history. The next closest was last year's Thomas Fire at 281,893 acres. The Ranch fire alone has consumed 410,182 acres. In the satellite image, smoke from the northernmost edge of the fire is still visible and the dark brown areas that surround the Clear Lake show the areas that the River and Ranch fires have consumed.

Fire officials do not expect any forward fire progression. The potential for more fire spotting lessens as the small islands that are burning burn out. This allows more depth along containment





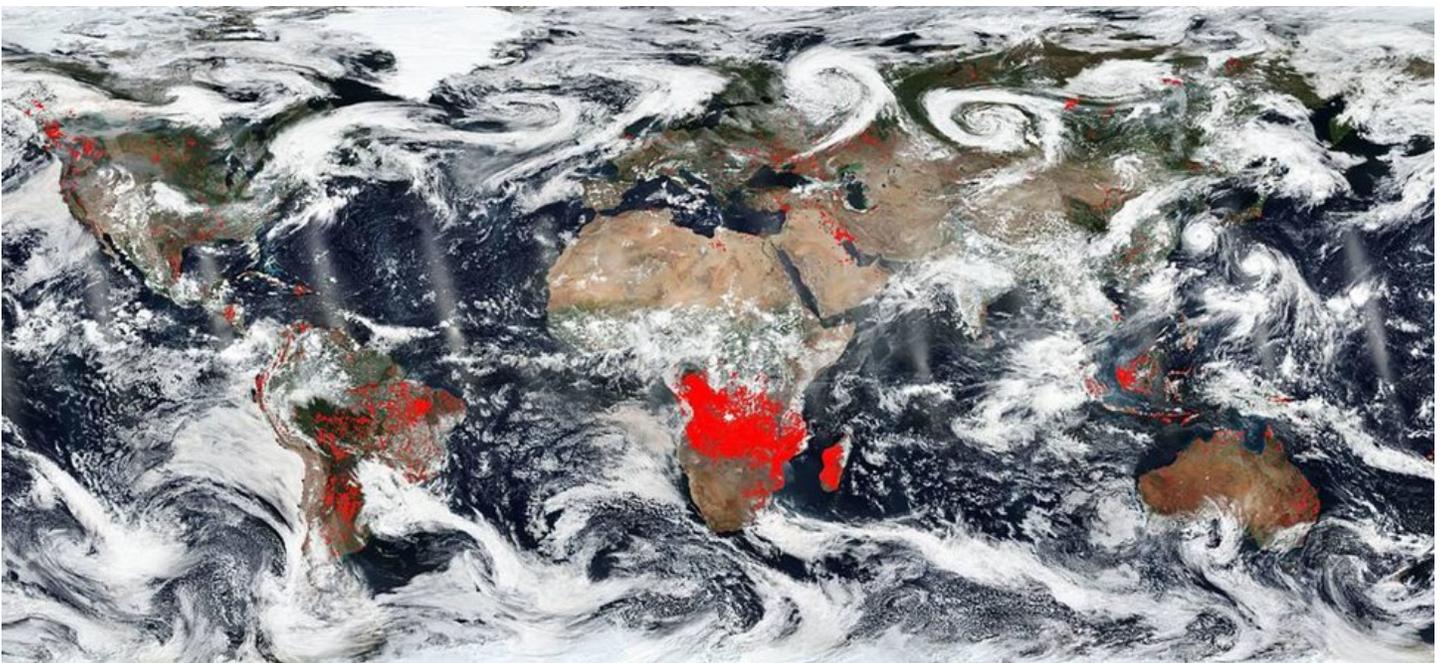
that by using thermal bands detect actively burning fires. Africa seems to have the most concentrated fires. This could be due to the fact that these are most likely agricultural fires. The location, widespread nature, and number of fires suggest that these fires were deliberately set to manage land. Farmers often use fire to return nutrients to the soil and to clear the ground of unwanted plants. While fire helps enhance crops and grasses for pasture, the fires also produce smoke that degrades air quality.

Elsewhere the fires, such as in North America are wildfires for the most part. In South America, specifically Chile has had horrendous numbers of wildfires this year. A study conducted by Montana State University found that: "Besides low humidity, high winds and extreme temperatures—some of the same factors contributing to fires raging across the United States—central Chile is experiencing a mega drought and large portions of its diverse native forests have been converted to more flammable tree plantations, the researchers said."

NASA's [Earth Observing System Data and Information System \(EOSDIS\) Worldview](#) application provides the capability to interactively browse over 700 global, full-resolution satellite imagery layers and then download the underlying data. Many of the available imagery layers are updated within three hours of observation, essentially showing the entire Earth as it looks "right now." This satellite image was collected on August 29, 2018. Actively burning fires, detected by thermal bands, are shown as red points. Image Courtesy: NASA Worldview, Earth Observing System Data and Information System (EOSDIS).

More on this study can be found here: <https://phys.org/news/2018-08-massive-south-central-chile.html#jCp>

The world is on fire. Or so it appears in this image below from NASA's Worldview. The red points overlaid on the image designate those areas





Smoke has been another problem to detect and to assist communities better understand where the smoke is going which often gets asked of the Environmental Protection Agency and NOAA's National Weather Service. Again, satellites have been a major help in tracking smoke and below are images generated by NASA/NOAA/NIFC

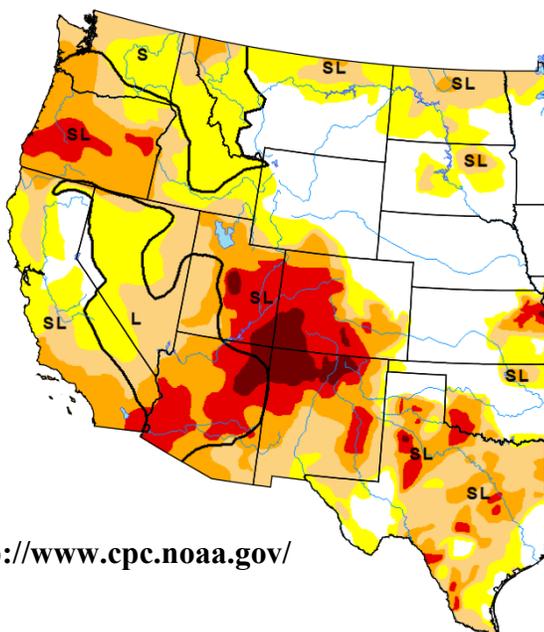


Here are related links of WestFAST agency actions:

NOAA Forecasting Models <https://rapidrefresh.noaa.gov/hrrr/HRRRsmoke/>
 NASA [NASA's 'Space Botanist' Observes California, Nevada Wildfires](#)

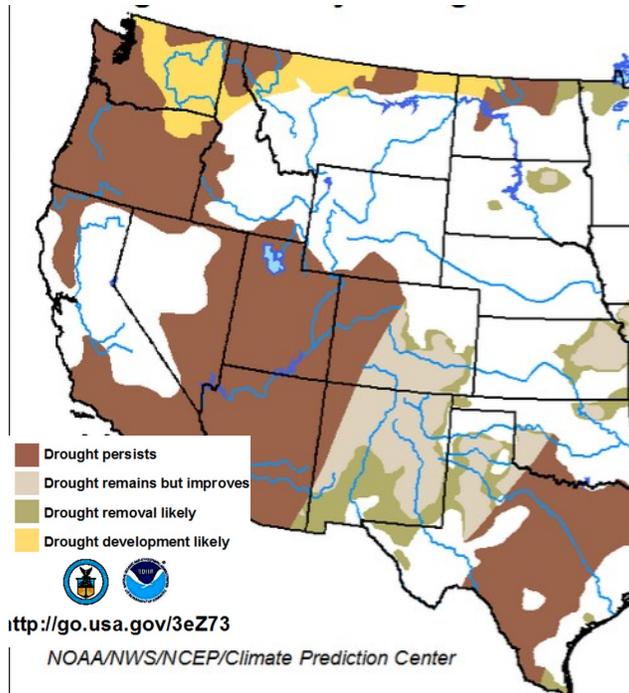
BLM [Wildfire Prevention and Education Team Mobilized](#)
 COE <http://www.spk.usace.army.mil/CAwildfire/>

The latest Drought Monitor (below) shows some improvement in drought conditions in Arizona and New Mexico, but drying in the Pacific Northwest while widespread dry conditions persist in the West.



<http://www.cpc.noaa.gov/>

Drought Outlook August 31, 2018



- Drought persists
- Drought remains but improves
- Drought removal likely
- Drought development likely



<http://go.usa.gov/3eZ73>

NOAA/NWS/NCEP/Climate Prediction Center

~ - Delineates dominant impacts

S - Short-Term impacts, typically less than 6 months (e.g. agriculture, grasslands)

L - Long-Term impacts, typically greater than 6 months (e.g. hydrology, ecology)

The Drought Outlook shows some continued improvement in drought relief across parts of New Mexico, Colorado into Texas, with a lot of persistent drought expected in a good deal of the west with ac and actually expanding dry conditions along the northern tier of the Western States.



Drought Outlook — Alaska 8/31/18

Intensity and Impacts

- None
- D0 (Abnormally Dry)
- D1 (Moderate Drought)
- D2 (Severe Drought)
- D3 (Extreme Drought)
- D4 (Exceptional Drought)

Drought Monitor—Alaska 9/04/18





Surveys from Above Give Scientists a New Perspective on Water *(USGS 08/03/18)*

In February, 2018, the USGS began the first phase of airborne geophysical surveys in a series of high-resolution flights near Greenwood, Mississippi, to



CGG Tempest Fixed-Wing Aircraft. (Credit: Amanda Heydorn, CGG. Public domain.)

acquire large-scale airborne geophysical data in support of the [Mississippi Alluvial Plain \(MAP\) Regional Water Availability Study](#). The contract was awarded to [CGG](#), and the USGS is working in partnership with multiple state agencies to conduct the research.

The geophysical instruments used in this study are able to map aquifer properties below ground, to depths of up to about 1,000 feet.



(Credit: Burke Minsley, USGS. Public domain.)

This airborne survey, which could last through 2022, will be used to map nearly 100,000 square kilome-

ters, or 38,627 square miles, of the surficial Mississippi River Valley alluvial aquifer system, which includes portions of seven states—Illinois, Missouri, Kentucky, Tennessee, Arkansas, Mississippi and Louisiana. A multi-sensor platform featuring electromagnetic, magnetic and radiometric sensors will be deployed to map the underground aquifer system and deeper hydrogeologic setting.

Each subsequent airborne geophysical survey, including the upcoming August effort also based out of

Greenwood, Mississippi, will last approximately one-to-two months and cover the regional flight lines over the entire MAP project area. Additional data collection efforts will take place in following years as mapping needs and funding are identified.

CGG RESOLVE helicopter system in Greenwood, Mississippi. The USGS is working with CGG and other partners to gather geophysical information related to the Mississippi Alluvial Plain. The helicopter will be deployed in several smaller focus areas of interest where a series of high-resolution survey grids will be acquired.

“This represents the largest-to-date public-sector initiative to acquire airborne electromagnetic data for hydrologic applications in the United States,” said Don Cline, Associate Director for the USGS Water Resources Mission Area. “The data collected from these surveys will greatly improve our knowledge of water resources in the MAP study area.”



Interpretative products developed from this survey will include improved maps of the below-surface aquifer system that are needed to better inform water availability models. They will help support collaborative engineering projects with the U.S. Army Corps of



Engineers and the United States Department of Agriculture's Agricultural Research Service as well as address the needs of state and local water resource managers in the MAP region.

"The MAP airborne geophysical survey will allow us to develop a high-resolution three-dimensional representation of the groundwater resources for one the most important irrigated agricultural regions in the U.S.," said project lead and USGS scientist Wade H. Kress.

Regional data collection will be accomplished with the [CGG Tempest fixed-wing system](#) that will acquire data along a [pre-planned grid of flight lines that spans the entire survey area](#). Flight paths will be separated by approximately 2 to 12 kilometers—1.2 to 7.5 miles—in the first year, and funding in subsequent years will be used to enhance the overall survey resolution by adding additional flight lines in between those previously flown. In addition, the CGG RESOLVE helicopter system will be deployed in several smaller focus areas of interest where a series of high-resolution survey grids will be acquired.

"Airborne geophysical data fill a critical role in aquifer mapping studies, since such large-scale data cannot be acquired effectively on the ground," said Dr. Burke Minsley, a Denver-based USGS research geophysicist who is helping to lead the airborne geophysical effort. "We are excited to add cutting-edge airborne geophysical technologies to advance groundwater modeling and decision-making efforts in this study."

As with all USGS data, the information acquired from the airborne surveys will undergo rigorous analysis. The data will then be integrated with groundwater modeling efforts prior to becoming fully available to the public.

Upcoming Meetings:

The WSWC Fall (188th) Meeting will be held in Coeur d'Alene, Idaho on October 23-26, 2018. For further information, please see: <http://www.westernstateswater.org/upcoming-meetings/>.

Federal News *(Control click to articles)*

7/31: [USFWS Keeping Sea Otters Wild](#)

8/01: [2017 was One of Three Warmest Years on Record, International Report Confirms](#)

8/01: [Farmers Keeping Nutrients on the Field, Out of the Streams](#)

8/01: [EPA Provides \\$135 Million for Innovative Groundwater Replenishment Project Expansion in Orange County, California](#)

8/3: [New Study: The Arctic Carbon Cycle is Speeding Up](#)

8/8: [EPA Awards \\$1,217,516 to Idaho Department of Environmental Quality to Improve Air Quality](#)

8/8: [July 2018 was the 11th Warmest July on Record for the U.S.](#)

8/8: [Ask the Scientist: Extreme Rainfall Why it Happens and How We Predict it](#)

8/8: [South Dakota Hosts National North American Manure Expo](#)

8/8: [Video: In FLASH, Forecaster Predict Fast-moving Floods](#)

8/8: [Expedition Probes Ocean's Smallest Organisms for Climate Answers](#)

8/9: [NASA Finds Amazon Drought Leaves Long Legacy of Damage](#)

8/14: [NASA Team Demonstrates "Science on a Shoestring" with Greenhouse Gas-Measuring Instrument](#)

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8/14: [NRCS Conservation Road Trip: Making a Difference in Oklahoma](#)

8/15: [USDA Invests in 22 New Projects to Spur Innovation in Grazing Lands, Organic Systems and Soil Health](#)

8/15: [U.S. EPA approves expansion of Navajo Nation regulatory authority over drinking water systems](#)

8/15: [Severe Storms Show off their "Plume-age"](#)

8/16: [EPA Receives Record Number of Letters of Interest for WIFIA Water Infrastructure Loans](#)

8/20: [EPA Selects Environmental Education Grantees to Receive \\$3.3 Million to Support Projects Nationwide](#)

8/20: [July 2018 was the 4th Warmest July on Record for the Globe](#)

8/22: [WHAT THEY ARE SAYING - About EPA's New Affordable Clean Energy Rule](#)

8/23: [EPA Air Quality Advisory Extended for Tribal Reservations in Western Washington](#)

8/29: [Five Questions Non-Operator Landowners Should Ask Their Farmers about Soil Health](#)

8/30: [EPA Seeks Input on Regulatory Approach for Managing Excess Flows](#)

8/30: [EPA Reaches Settlement on Clean Water Act Violations with Two Animal Feeding Operations in West Point area of Nebraska](#)



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