

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.



NOAA Spring Outlook: Risk of major flooding in North Dakota, moderate flooding in Idaho (NOAA 3/16/17)

Northern North Dakota – the Souris River, Devils Lake and the northernmost reaches of the Red River – has the greatest risk of major flooding this spring, while moderate flooding is possible over southern Idaho in the Snake River basin, according to NOAA's Spring Outlook released today.

California, which saw extensive flooding in February, is susceptible to additional flooding from possible storms through the remainder of the wet season and later, from snowmelt.

"If you're in northern North Dakota, or in



NOAA Upper Missouri Flooding

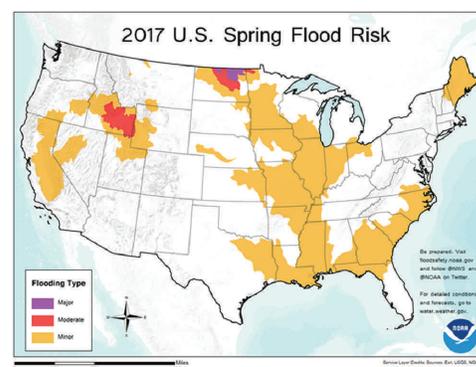
the Snake River basin in Idaho, prepare for moderate to major flooding this spring," said Tom Graziano, Ph.D., director of NOAA's Office of Water Prediction. "Snowpack is heavy in the West and northern plains, and if our long term warm-up coincides with spring rains, already saturated soils will not be able to absorb the increased water, which would lead to increased runoff and potential flooding."

But while the extreme north could see flooding, the rest of the country could be warmer than average, forecasters said. "Above average temperatures are favored for much of the U.S. this spring with the south-central Plains and eastern U.S. having the highest chance for warmer than average conditions," said Jon Gottschalck, chief, Operational Prediction Branch, NOAA's Climate Prediction Center.

There was a remarkable turnaround in

California's five-year drought over the winter. According to the [U.S. Drought Monitor](#) [toroffsites link](#), issued today, the geographic extent of drought in the state dropped from 73 percent three months ago to eight percent this week, due to near-record precipitation from a series of powerful winter storms. Also, in February, only three percent of the contiguous U.S. saw severe to exceptional drought, the lowest level in seven years. [\[See our video summary of the Spring Outlook\]](#)

Spring Flood Risk



NOAA March 16, 2017 Outlook

Driving the forecast for major flooding in northern North Dakota is an extensive snowpack, containing up to four inches of liquid water that could increase with additional storms through April. When this snowpack melts, the already saturated and frozen soil won't be able to absorb it, creating runoff and potential flooding. The location of greatest concern is Devils Lake, where forecasters are projecting a near record runoff that could cause the lake to rise three to four feet, possibly exceeding its record high flood level set in June 2011.

Central and southeastern Idaho in the Snake River basin, which received its second highest snowfall on record this winter, has a moderate flood risk. Rapid snowmelt from rain storms on top of snowpack has already caused flooding at lower elevations of this region. How long the flooding could last and how intense it will be depends on future precipitation and temperatures.

California and Nevada may experience snowmelt flooding in the spring. Numerous storms this winter brought record-breaking rain and snow to the western

Membership:

Roger Gorke, (Chair), EPA
Gorke.roger@epa.gov

Kevin Werner, (Vice Chair), NOAA
kevin.werner@noaa.gov

Becky Fulkerson, Reclamation
rfulkerson@usbr.gov

John D'Antonio, USACE
John.R.D'Antonio@usace.army.mil

Sonya Jones, USGS
sajones@usgs.gov

Paul (Doug) Curtis, BLM
pcurtis@blm.gov

Andrew Hautzinger, FWS
Andrew_Hautzinger@fws.gov

Mike Strobel, NRCS
michael.strobel@por.usda.gov

Roger Pulwarty, NOAA
roger.pulwarty@noaa.gov

Brad Doorn, NASA
bradley.doorn@nasa.gov

Craig Zamuda, DOE
Craig.Zamuda@Hq.Doe.Gov

Marc Kodack, DOD
marc.d.kodack.civ@mail.mil

Ed Harvey, NPS
forrest_harvey@nps.gov

Patrick Lambert, USGS
patlambert@swc.utah.gov

Roger Pierce, WestFAST Liaison
rogervpierce@swc.utah.gov



United States. Snowpack is above normal in most of this region, with the Sierra Nevada Mountains having the heaviest snowpack in more than 20 years. Rivers in the area have already experienced elevated stream flows and flooding, while most reservoirs are at or above capacity. Snowpack is

areas in the west

Link [NRCS Snow Survey](#)



NRCS Snow Survey

expected to continue to build over the next month, making it currently too early for forecasters to determine final spring snowmelt flooding severity.

Minor flooding is possible in parts of Minnesota and Wisconsin southward to eastern Texas, and in a narrow band across the Southeast up the coast to southern Virginia. Minor flooding is also possible across Maine and parts of New Hampshire. The flood threat is low in southern New England and the Mid-Atlantic, due to below-normal precipitation this winter, even with this week's late-season nor'easter that brought the region significant snow.

NOAA Link: [Drought Outlook](#)

NOAA Link: [Temperature and Precipitation Outlook](#)

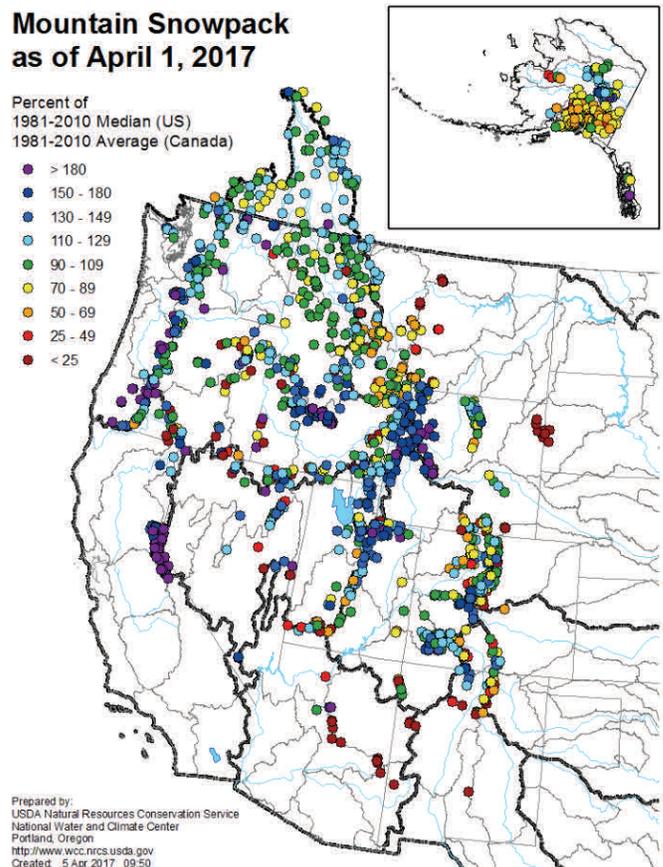
More: [NOAA's Spring Weather Safety Campaign](#) has tips on how to stay safe during a tornado, flood, thunderstorm, hail, lightning, heat, wildfires, and rip currents.

NRCS Snow Survey —shows snowpack on track (WestFAST 03/30/17)

The latest Natural Resources Conservation Service (NRCS) snow survey continues to show the snowpack on track for a good water supply in much of the Western United States. The latest details are available here but as indicated by the NOAA report above, there may be too much water in some

Mountain Snowpack as of April 1, 2017

- Percent of
1981-2010 Median (US)
1981-2010 Average (Canada)
- > 180
 - 150 - 180
 - 130 - 149
 - 110 - 129
 - 90 - 109
 - 70 - 89
 - 50 - 69
 - 25 - 49
 - < 25



Weather Bill Passes House and Senate

(WestFAST 03/29/2017)

The bill from the House of Representatives (H.R. 353) entitled "An Act to improve the National Oceanic and Atmospheric Administration's weather research", has been passed by the House and Senate and is waiting Presidential action. The [97-page bill](#), the Weather Research and Forecasting Innovation Act of 2017, H.R. 353, gained bipartisan support in Congress. Weather Research and Forecasting Innovation Act is a major step toward more accurate and timely weather predictions. The bill was introduced by Thune and Lucas in the Senate and House. Bill co-sponsors include Sen. Brian Schatz (D-Hawaii) and Reps. Smith, Jim Bridenstine (R-Okla.), Dana Rohrabacher (R-Calif.), Chris Stewart (R-Utah) and Suzanne Bonamici (D-Ore), and Del. Aumua



Amata Coleman Radewagen (R-American Samoa)

The cost is over 100 million and in addition to working on a number of weather themes like hurricanes, heavy rainfall, numerical weather modeling, computer systems, improved back-up systems and communications, the bill also seems to have a lot of reporting requirements. This is indicative of recent actions with initiatives coming to the National Oceanic and Atmospheric Administration (NOAA). An area of interest for the WestFAST is the bills language supporting improvements on longer range weather forecast that go from several days out to two years that would be of value to water supply management in the west.

It is unclear how the President will take action on this bill. His initial budget plans for FY18 were directed cuts with protection of spending of parts of NOAA such as the National Weather Service. There are concerns being raised that the bill may not provide additional appropriations, but force re-direction of ex-

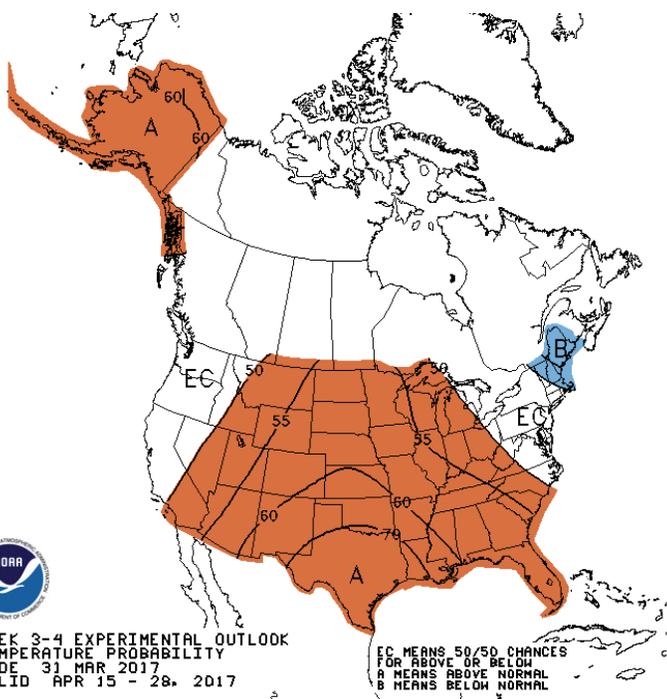
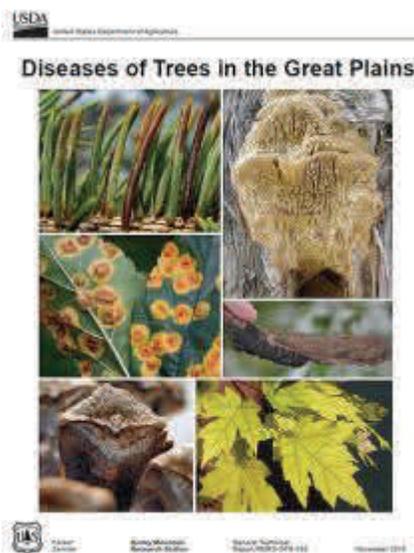
mously Tuesday to name Julie Cunningham as the agency's next executive director. Cunningham had been serving as the interim executive director since October 2016 following the departure of J.D. Strong to lead the Oklahoma Department of Wildlife Conservation. Julie has been working closely with the Southwest Oklahoma Water Action Plan (SWAP) for water supply in the Altus, OK area. The SWAP has been of interest to Western States Federal Agency Support Team (WestFAST) as an example of how plans of this nature fit within the context of the National Drought Resiliency Partnership (NDRP). Julie has been working with members of the WestFAST that have directly supported the SWAP since its inception, but WestFAST has broadened up our coordination efforts in recent months with monthly calls and Western States Water Council is devoting part of their spring meeting to SWAP in Nebraska City, NE, the morning of April 12, 2017,

The Benefits of Helping Great Plains Trees - One Diagnosis at a Time *(FS 03/10/17)*

It began as a causal conversation in a hotel lobby in Kansas. After a day of discussions during the annual meeting of the [Great Plains Tree Pest Council](#) (link is external), the after-hours talk turned to the idea of updating the 1986 *Diseases of Trees in the Great Plains* manual.

The manual had been a staple for years, riding along in many a Plains forester's truck and used in pathology labs across the region. With a pen and notebook in hand, Council Secretary Aaron Bergdahl started jotting down notes around what the updated book might look like; the next thing he knew, he was nominated to co-coordinate its production.

That fateful conversation stimulated a four-year and 229-page, fully-updated, color publication, with double the number of tree species and diseases from the original greatly benefiting those doing research. The new *Diseases of Trees in the Great Plains* would not have been possible without the cooperation and comradery found amongst the Council's members.



Example of an experimental 3-4 week outlook that could receive funding for improvements

isting funds and competing interest that have impact on the west.

Julie Cunningham Named OWRB Executive Director *(WestFAST & OWRB 03/22/17)*

The Oklahoma Water Resources Board (OWRB) voted unani-



The U.S. Geological Survey releases a new tile cached map service for hydrography *(USGS 03/27/17)*

The new “USGS Hydrography - Cached” overlay service is designed to act as a fast “overlay”, displaying hydrography in the familiar USGS topo map symbology, for display on top of basemaps, satellite imagery, or other map services. Because it is cached, the service should perform well at many different scales. This new cache supports visualization zooming down to 1:9,000 scale (Level 17 in Google Maps tile levels). The service is available as both an [ESRI REST](#) service enabling its use in ArcGIS desktop, ArcGIS Online, and as a Web Map Tile Service for inclusion into many other interactive mapping applications.

Screen shot of streams near the Dillon Reservoir, Frisco, CO on imagery basemap(USGS)

The USGS Hydrography - Cached overlay is built from [The National Hydrography Dataset](#) (NHD). The NHD is a comprehensive set of digital spatial data that encodes information about naturally occurring and constructed bodies of surface water (lakes, ponds, and reservoirs), paths through which water flows (canals, ditches, streams, and rivers), and related entities such as point features (springs, wells, stream gages,



and dams).

The previous Hydrography basemap, “USGS Hydro NHD”, incorporated shaded relief as part of the map, and thus, could not be used as a map overlay. This older Hydrography base-

map service is planned for decommissioning in the near future (April-May 2017) when a new updated shaded relief (a.k.a hill shade basemap) will be published. A similar view to the planned retired basemap can be created using the Hydrography - Cached service overlain on top of the new, to be published, shaded relief basemap. Note also that the new cached map does not include the [Watershed Boundaries Dataset](#), but will continue to be available in the [dynamic NHD web service](#), and can be added as a separate layer if desired.

More details and the full list of web based map services available from [The National Map services](#) webpage. Link to this [article](#)

Western States Water Council Spring Meeting

The WSWC Spring Meeting will be held April 12-14, 2017, in Nebraska City, NE.

[Link to Agenda](#)

Federal News *(control click to links)*

[2/27: Successful Maneuver Spells Beginning of the End for Landsat 7](#)

[2/28: https://www.nasa.gov/feature/jpl/nasa-data-show-californias-san-joaquin-valley-still-sinking](https://www.nasa.gov/feature/jpl/nasa-data-show-californias-san-joaquin-valley-still-sinking)

[03/01: Rural West sees more smog; now scientists may know why](#)

[3/01: Ryan Zinke Sworn In as 52nd Secretary of the Interior](#)
[3/2":NASA Study Improves Forecasts of Summer Arctic Sea Ice](#)

[3/3: NASA Study Improves Forecasts of Summer Arctic Sea Ice](#)

[3/07: February runoff above average; Public meetings scheduled for April 11-13](#)

[3/7: Arctic Sea Ice Reaches Another Record Low](#)

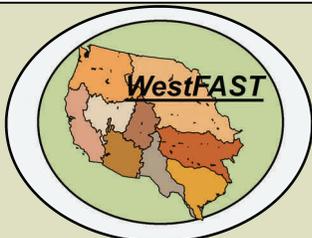
[3/07: Snowy February Improves Snowpack in Montana and Streamflow Prospects for Spring](#)

[3/09: How Well Do You Know Groundwater](#)

[03/09: USDA Seeks Project Proposals to Protect and Restore Critical Wetlands](#)

[03/10: The Benefits of Helping Great Plains Trees - One Diagnosis at a Time](#)

[03/10: Carbon dioxide levels rose at record pace for 2nd straight year](#)



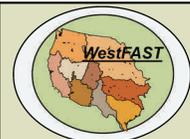
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Roger V. Pierce, WestFAST Federal Liaison

Email: rogervpierce@wswc.utah.gov

Phone: 801-685-2555

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



- [3/13: Water managers explore new strategies to protect fish in California's Bay Delta](#)
- [3/14: Reclamation Seeks Applicants for Applied Science Projects within the Desert and Southern Rockies Landscape Conservation Cooperatives](#)
- [3/15: Information Flows Freely, Even in a Drought](#)
- [3/15: Changing Temperatures and Precipitation May Affect Living Skin of Drylands](#)
- [3/15: GRACE Mission: 15 Years of Watching Water on Earth](#)
- [3/16: NASA Acting Administrator Statement on FY2018 Budget Proposal](#)
- [3/17: Earth had 2nd warmest February, season and year to date on record](#)
- [3/20: History of Abrupt Sinking of the Seal Beach Wetlands: New Study Reveals Past Quakes along Fault and Offers Glimpse into the Future](#)
- [3/21: NASA Acting Administrator Statement on the NASA Authorization Act](#)
- [03/21: NRCS Announces Funds Available for Working Lands for Wildlife program for the Greater Sage Grouse Initiative](#)
- [3/21: Corps and others continue to monitor and manage Columbia Basin river and reservoir levels](#)
- [03/21: Kansas NRCS Announces Additional Funding to Aid Farmers Affected by the Fires](#)
- [3/22: Sea Ice Extent Sinks to Record Lows at Both Poles](#)
- [3/23: NASA Examines Peru's Deadly Rainfall](#)
- [3/24: Could Leftover Heat from Last El Niño Fuel a New One?](#)
- [3/24: New "Landsat Collections" Help Facilitate Land Change Science](#)
- [3/27: Disappearing Beaches: Modeling Shoreline Change in Southern California](#)
- [3/27: New Hydro Map Service Available](#)
- [3/27: Helping Desert Communities Find Hidden Water](#)
- [3/29: NASA-University Study Finds 11 Percent of Disappearing Groundwater Used to Grow Internationally Traded Food](#)
- [3/30: Online Training on Using The National Map Products and Services](#)
- [03/30: USDA Offers Renewal Options for Expiring Conservation Stewardship Program Contracts](#)

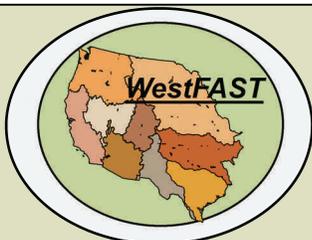
in many parts of the Southwestern U.S. Expect this bloom to expand northward with spring.

Photos—upper left by Internet photo by Notey; upper right Internet photo by Strange sounds; Middle left by Flickr Bob Bertholf, to the right is Ethan Gibney, visiting Scientist at the NOAA NWSFO San Diego; and at the bottom is by Dan Gregoria, Forecaster, NOAA, NWSFO San Diego.



A Wildflower Superbloom Overtakes the Deserts in March 2017 *(WestFast 04/05/17)*

The Desert Southwest has experienced 3 to 5 years of drought. This winter has produced an abundance of precipitation across much of the west, including the Desert regions. The extra water with years of seeds and dormant vegetation a spectacular bloom of wildflowers has transformed the Deserts



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Phone: 801-685-2555

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