NAVAJO NATION DROUGHT STATUS REPORT

NN Dept. of Water Resources, Water Management Branch

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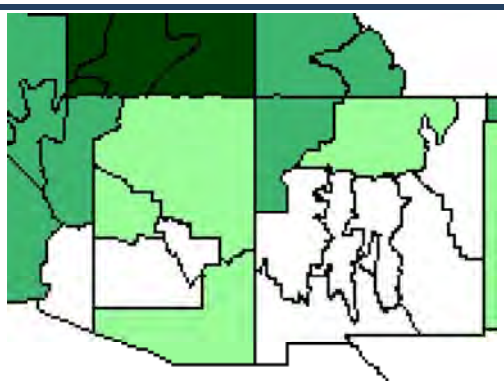


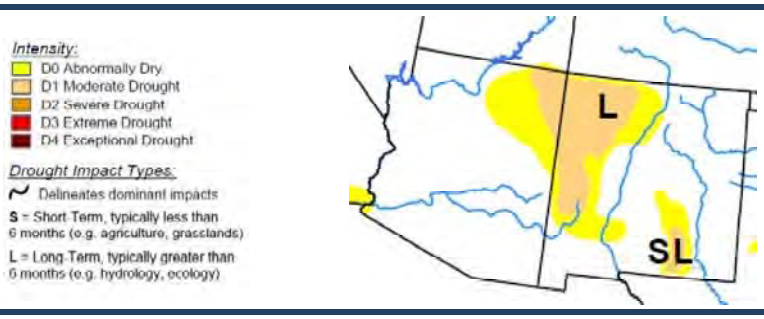
- +3.00 and above (exceptionally wet)
- +2.00 to +2.99 (extremely wet)
- +1.25 to +1.99 (very wet)
- +0.75 to +1.24 (moderately wet)
- -0.74 to +0.74 (near normal)
- -1.24 to -0.75 (moderately dry)
- -1.99 to -1.25 (very dry)
- -2.99 to -2.00 (extremely dry)
- -3.00 and below (exceptionally dry)

Navajo Nation Drought Stage

Location	6 month SPI May	Stage as of May
NE AZ	1.05	Normal
NW NM	1.36	Normal
SE UT	2.04	Normal

Drought Intensity Category

NN Drought	*US Drought*	
Normal	Normal	D0
Alert	Moderate	D1
Warning	Severe	D2
Emergency	Extreme/Exceptional	D3 & D4



National Drought Summary for May 28, 2019

Summary: During this U.S. Drought Monitor (USDM) week, a strong high pressure ridge was anchored over the southeastern contiguous U.S. (CONUS) while an upper-level trough dominated the West. This pattern set up a southwesterly flow across the central part of the country, which funneled moist and unstable air from the Gulf of Mexico into the Plains. Pacific weather systems moving in the jet stream flow plunged into the western trough, bringing precipitation and cooler-than-normal temperatures to much of the country from the Rockies westward. The weather systems intensified as they moved into the Plains, triggering another week of severe weather and heavy flooding rains. Two or more inches of precipitation occurred across the Plains to Midwest and in upslope areas of Montana and Wyoming, with locally 5 inches or more. Weekly precipitation was wetter than normal across much of the Southwest, and from much of the Great Plains to Great Lakes. Half an inch to locally 2 inches was observed from the central Appalachians to New England, but these amounts were mostly below normal. The week ended up drier than normal across western Washington, northern Idaho and northern Montana, southern Arizona, most of New Mexico, and central to southern Texas. The subtropical high kept the Southeast drier and warmer than normal, with record high temperatures reported. As a result of this weather pattern, drought contracted in Oregon, Wyoming, and the central Plains, but expanded in the northern Rockies, Texas, the Tennessee Valley, and the Southeast.

West: D0-D1 remained in parts of Arizona and New Mexico, and D0 remained in southern California, both reflecting long-term dryness which has built up over the last 5 to 6 years (and low reservoirs in southern California), and in Washington to northwest Oregon. Precipitation was above normal in southeast Oregon at most time scales, so the D0 there was deleted. But in western Washington to northwest Oregon, this week was dry and most of the last 1 to 2 years have been drier than normal, mountain snowpack was diminished from normal values for this time of year, and streamflow was much below normal to record low. D0-D1 here reflected these conditions for now, but D2 may be needed if conditions worsen. D0-D1 expanded in the Rockies of northeast Oregon, far northern Idaho, and northwest Montana where streamflow and precipitation and SPI values for the last 4 months were low.

Looking Ahead: Next week (May 30-June 4), an upper-level weather system will move across the eastern CONUS while another takes up residence over the Southwest. The high pressure ridge over the Southeast gradually shifts to the Plains. During this process, fronts and low pressure systems will trigger heavy rains again across the Plains to Midwest, with 1 to locally over 3 inches progged from northern Texas to Illinois, and from Illinois to Pennsylvania. An inch or more of precipitation is expected over much of the Northeast. Little to no precipitation is forecasted for much of the Southeast, most of California, the western half of the 4 Corners States, western Oregon, much of Washington, the High Plains of Wyoming and Montana, most of North Dakota, and northern Minnesota. Above-normal temperatures will continue in the Southeast for much of this period, and spread from the Pacific Northwest into the northern and central Plains, while cooler-than-normal temperatures will linger in the Southwest and from the eastern Great Lakes to New England. For June 5-12, odds favor above-normal precipitation from the 4 Corners States to the southern Appalachians, eventually spreading across the Southeast; along most of the Mississippi River; and over the northern half of Alaska, including the panhandle. Statistical odds favor drier-than-normal weather over the Great Lakes to Northeast, from northern California to the northern High Plains, and over southwestern Alaska. Cooler-than-normal weather is expected across New Mexico to western Texas, over Washington State, from the Great Lakes to New England, and over central Alaska. There is a high probability for warmer-than-normal weather over the northern to central Plains stretching into California, over the Southeast stretching to the Gulf of Mexico coast and Mid-Atlantic coast, and over southern and northern Alaska.

For further enquires contact Mr. Carlee McClellan, Senior Hydrologist, Ph. (928) 729-4125, Email: cmcclellan@navajo-nsn.gov

Southwest Drought At Glance

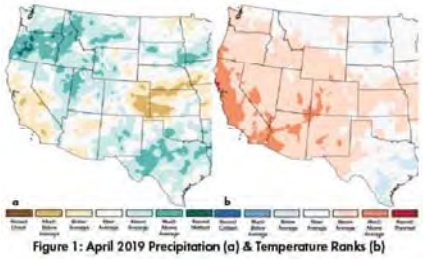


Figure 1: April 2019 Precipitation (a) & Temperature Ranks (b)

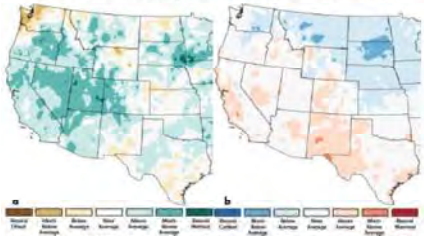


Figure 2: Jan 2019 - Apr 2019 Precipitation (a) & Temperature Ranks (b)

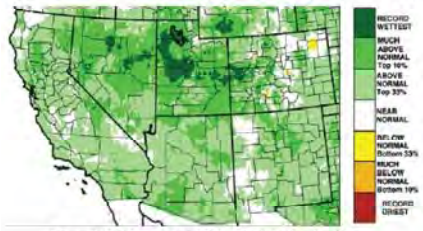


Figure 3: Oct 2018 - Apr 2019 - Precipitation Rankings

Climate Summary by CLIMAS May 2019

April Precipitation and Temperature: April precipitation was average to much above-average in most of New Mexico, while Arizona ranged from below-average to above-average (Fig. 1a). April temperatures were almost entirely above-average to much above-average across the Southwest (Fig. 1b), while temperatures so far in May have been mostly below-average.

Seasonal Precipitation and Temperature: Year-to-date precipitation (Jan-Apr) is above-average for most of the western U.S. (Fig. 2a). Most of Arizona and northern New Mexico were above-average or much above-average, and across the Southwest, only southern New Mexico and far west Texas recorded below-average precipitation. Temperatures for Jan-Apr were average to above-average in Arizona and mostly above-average in New Mexico (Fig. 2b).

Drought: Water year precipitation is above normal (top 33%) for much of the Southwest, with large areas of much above normal (top 10%) and smaller pockets of record wet conditions (Fig. 3). The May. 7 U.S. Drought Monitor (USDM) continues to show improvements in regional drought conditions in the Southwest, with Arizona nearly clear of drought designations, and the intensity of drought characterizations in the four corners region and northern New Mexico further reduced compared to last month (Fig. 4).

Snowpack & Water Supply: Late season snowpack in the Southwest is waning, and snow water equivalent (SWE) in Arizona and New Mexico reflect this seasonal transition. Many stations are no longer reporting values, but those still reporting show over 200-percent of average (Fig. 5). Upper elevation areas in Utah and Colorado mostly range from 110- to 200-percent of average, which bodes well for short term reservoir storage.

Wildfire, Health, and Safety: Wildfire outlooks for June and July paint a similar picture for lower elevation areas of Arizona, with above normal fire risk (Fig. 6), linked to widespread fine fuel growth driven by above-average precipitation in the cool season. Northern Arizona and New Mexico are projected to see below normal fire risk in June and return to normal risk in July. Cool season precipitation has done wonders for the wildflower season and helped with drought, but wildfire risk and the impact of pollen production for allergy sufferers provide examples of trade-offs associated with increased precipitation.

El Niño Tracker: Atmospheric and oceanic conditions remain in line with a weak El Niño, and most forecasts call for this event to last at least through summer. There is considerable uncertainty, however, for forecasts made in Spring, and in the Southwest, there is little in the way of a precipitation signal to alter in May and early June.

Precipitation and Temperature Forecast: The three-month outlook for June through August calls for increased chances of below-normal precipitation in northern and central Arizona and equal chances of above- or below-normal precipitation in much of the rest of Arizona, New Mexico, west Texas, and northern Mexico (Fig. 7, top). The three-month temperature outlook calls for increased chances of above-normal temperatures in most of Arizona, and parts of northern New Mexico, and northern Mexico, with equal chances of above- or below-average temperatures in the rest of the region (Fig. 7, bottom).

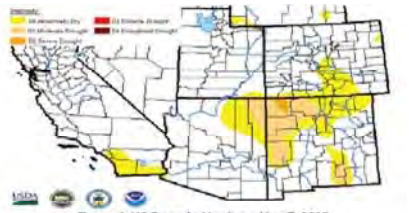


Figure 4: US Drought Monitor - May 7, 2019

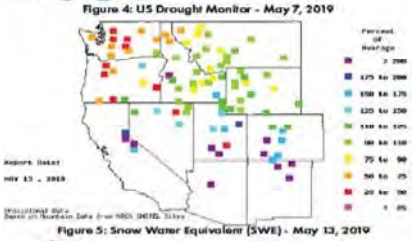
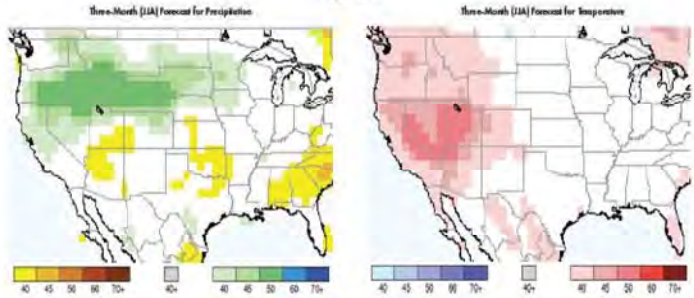


Figure 5: Snow Water Equivalent (SWE) - May 13, 2019

Figure 6: Significant Wildland Fire Potential June (Left) & July (Right)

Figure 7:



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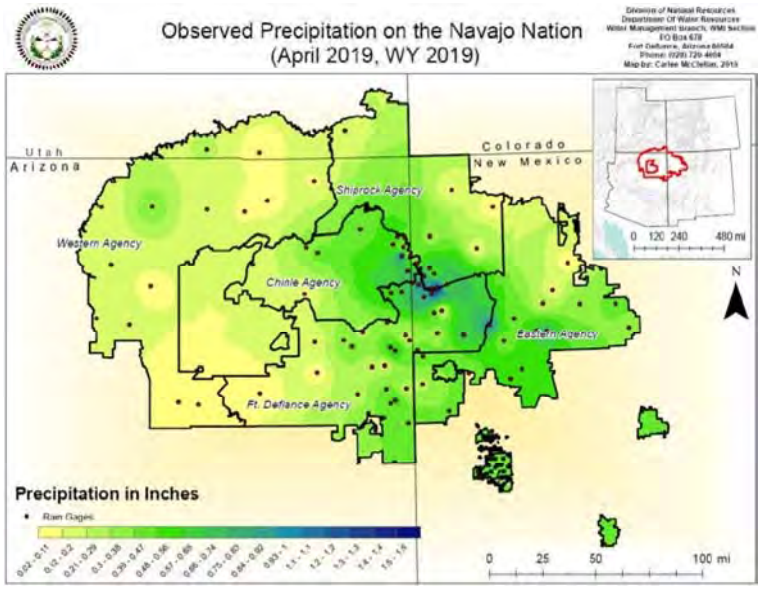
Navajo Nation Precipitation Summary

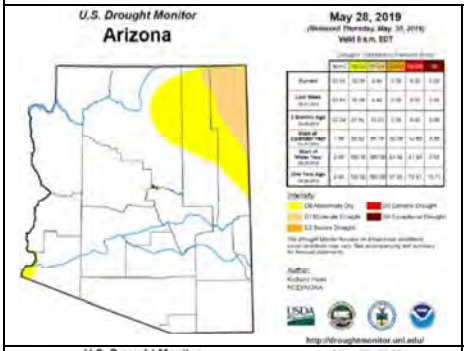


Agency	April	Avg	% of Avg
Chinle	2.33	0.79	295%
Eastern	1.43	0.48	298%
Fort Defiance	1.73	0.69	251%
Shiprock	2.16	0.70	309%
Western	1.34	0.44	305%

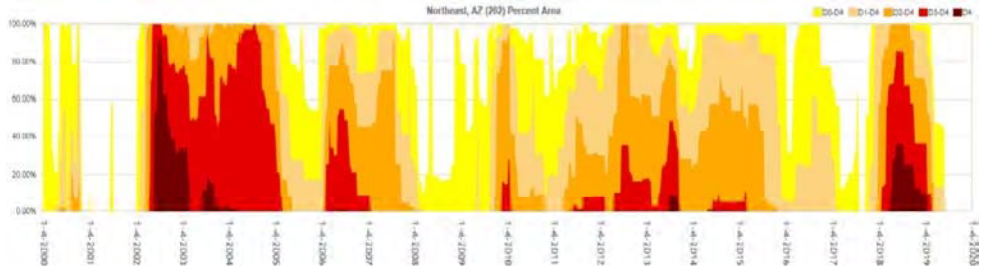
Useful Drought Related Sites:

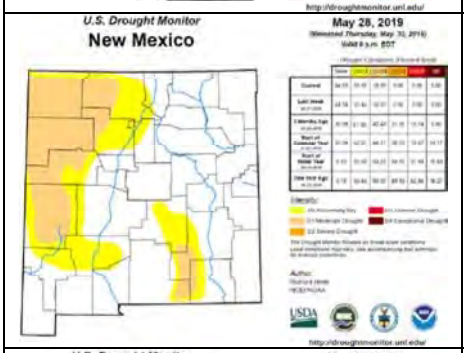
NWS-CPC Seasonal Outlook
www.drought.unl.edu
USGS Daily Stream Flow
www.usgs.gov/water/
Western Regional Climate Center
www.wrcc.dri.edu
CLIMAS Southwest Climate Outlook
www.climas.arizona.edu

New Mexico Governor's Drought Task Force
http://www.ose.state.nm.us/DroughtTask Force/index.html
ADWR Drought Program
http://www.azwater.gov/azdwr/StatewidePlanning/Drought
Utah Division of Water Resources
http://www.water.utah.gov/DroughtConditions/
Navajo DWR-Water Management Branch
http://www.frontiernet.net/~nndwr_wmb/

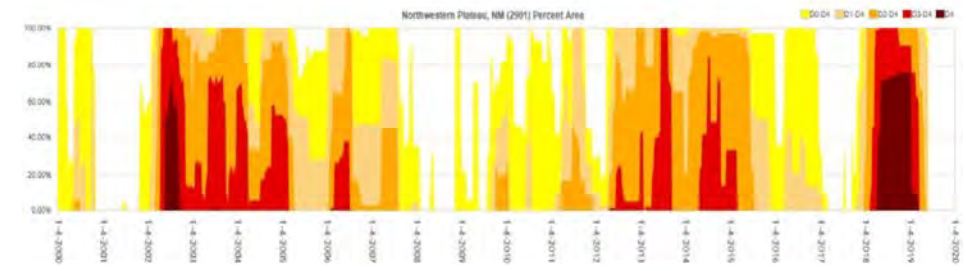


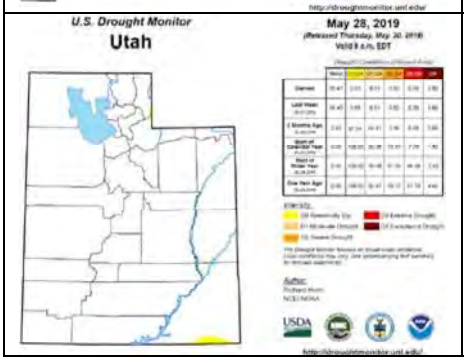
Northeast, AZ (202) Percent Area



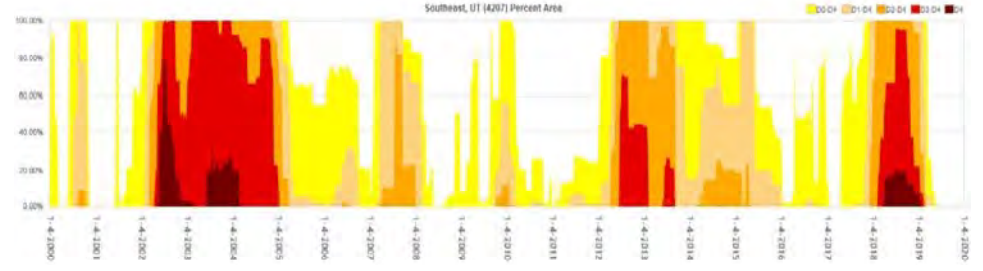


Northwestern Plateau, NM (2901) Percent Area





Southeast, UT (4207) Percent Area



May 2019