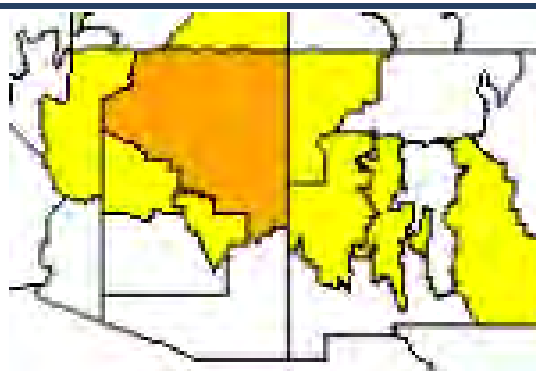




NAVAJO NATION DROUGHT STATUS REPORT

NN Dept. of Water Resources, Water Management Branch

P.O. Drawer 678 Fort Defiance, Arizona 86504 Ph. (928) 729-4004, Fax (928) 729-4126



- +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)

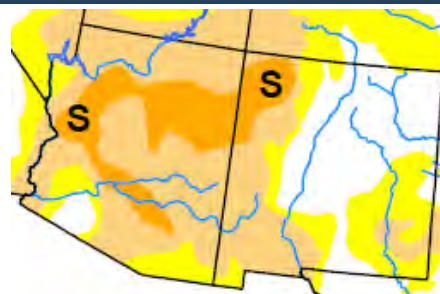
Navajo Nation Drought Stage

Location	6 month SPI September	Stage as of September
NE AZ	-1.60	Emergency
NW NM	-1.19	Warning
SE UT	-0.91	Alert

Drought Intensity Category

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

- Intensity:**
- D0 Abnormally Dry
 - D1 Moderate Drought
 - D2 Severe Drought
 - D3 Extreme Drought
 - D4 Exceptional Drought
- Drought Impact Types:**
- Delineates dominant impacts
 - S** = Short-Term, typically less than 6 months (e.g. agriculture, grasslands)
 - L** = Long-Term, typically greater than 6 months (e.g. hydrology, ecology)



National Drought Summary for September 24, 2019

Summary: Rapidly intensifying “flash drought” — attributed in part to extreme late-summer heat — continued to afflict many areas from the lower Midwest and Mid-Atlantic States to the Gulf Coast. Conversely, heavy to excessive rainfall associated with the remnants of Tropical Storm Imelda eradicated drought but caused locally catastrophic flooding in southeastern Texas and western Louisiana. Farther west, late-season showers on the heels of an abysmal Southwestern monsoon (to-date) helped stem drought increases in the Four Corners region, while rain and mountain snow further reduced lingering drought in the northwestern quarter of the nation. Meanwhile, additional moderate to heavy rain eased or alleviated dryness and drought from the Northwest into the Great Lakes. Outside of the lower 48, additional heavy rainfall eased lingering drought and dryness in south-central Alaska. Elsewhere, short-term drought persisted across the Hawaiian Islands, while Puerto Rico was mostly dry; rain arrived in Puerto Rico after the monitoring period ended (Tuesday morning).

West: Moderate to heavy showers arrived in the Southwest, while unsettled, cool conditions continued across the Northwest. Showers and thunderstorms (1-4 inches, locally more) associated in part with moisture from the remnants of Hurricane Lorena arrived in central Arizona, helping to stem further drought increases (at least temporarily) from the abysmal Southwestern monsoon season-to-date. Despite this week’s showers, 6-month rainfall has totaled a meager 10 to 50 percent of normal, with higher totals (70-100 percent of normal) noted in the mountains of central Arizona. The Southwestern monsoon typically runs from June 15-September 30 and accounts for up to half the total annual precipitation in some parts of the Southwest.

Farther north, near- to below-normal temperatures as well as another round of moderate to heavy rain (1-3 inches) from the Pacific Northwest into the northern Rockies spurred additional reductions of Abnormal Dryness (D0) and Moderate Drought (D1). At week’s end, D0 and D1 were limited to locales still reporting longer-term precipitation deficits (12-month precipitation averaging near 75 percent of normal or less).

Outlook: The overall theme of a persistent and stagnant weather pattern will continue into next week. High pressure will maintain dryness and drought from New England to the Gulf Coast Region, though a series of weak cold fronts may provide chances for much-needed shower activity from eastern portions of Kentucky and Tennessee to the central Atlantic Coast. Likewise, mostly dry weather is expected from the Southwest into the central Rockies and Great Plains. In contrast, wet weather will continue from the Northwest into the northern Plains and upper Midwest, with another ribbon of moderate to heavy rain (locally more than 2 inches) possible from the southern High Plains into the Great lakes Region. The NWS 6- to 10-day outlook for October 1-4 calls for above-normal temperatures across the eastern half of the nation in addition to the southern Plains and western Gulf Coast region, while cooler-than-normal weather prevails from the Pacific Coast into the upper Midwest. Near- to above-normal precipitation across much of the nation will contrast with drier-than-normal conditions across the southeastern quarter of the nation.

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

September 2019

Southwest Drought At Glance

Climate Summary by CLIMAS September 2019

Monthly Precipitation and Temperature: August precipitation was much below average in most of Arizona, while most of New Mexico ranged from above average to much below average, and both states saw small pockets of record driest conditions (Fig. 1a). August temperatures were much above average to record warmest in Arizona and New Mexico (Fig. 1b). The daily average temperature anomalies for Aug 1 – Sep 17 highlight the fluctuations at select stations around the region (Fig. 2).

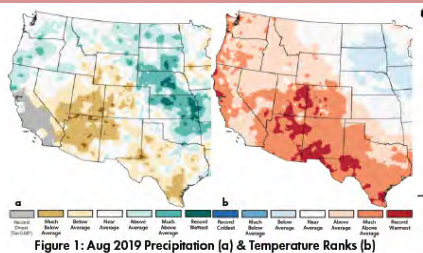


Figure 1: Aug 2019 Precipitation (a) & Temperature Ranks (b)

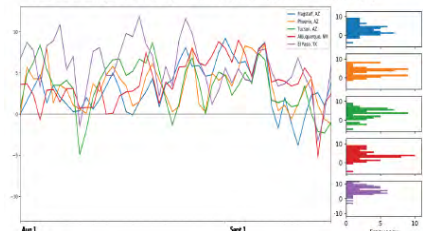


Figure 2: Daily Temperature Anomalies Aug 1 - Sept 17 (L) & Frequency of Anomalies (R)

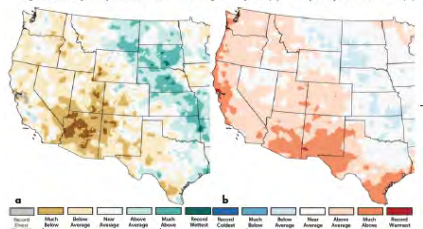


Figure 3: June-July-Aug 2019 Precipitation (a) & Temperature Ranks (b)

Water Supply: Most of the reservoirs in the region are at or above the values recorded at this time last year, but most also remain below their long-term average (see reservoir storage on p. 7). There have been improvements over the last year, but concerns remain about the recent below average precipitation, along with the accumulated water resource deficits associated with multiple years of drought.

Wildfire, Health, and Safety: The National Interagency Fire Center outlooks for September, October, and November all call for average fire risk across the region. With the declining monsoon activity and cooling temperatures, the Southwest should be on the wane for fire activity. Current seasonal statistics for wildfire acres burned show that lightning and human caused fires are above median in Arizona, and below median in New Mexico (Fig. 6).

ENSO Tracker: Oceanic and atmospheric conditions are generally consistent with an ENSO-neutral outlook for 2019 and into 2020.

Precipitation and Temperature Forecast: The three-month outlook for October through December calls for increased chances of above-normal precipitation in much of New Mexico, eastern Arizona, and north Texas, while equal chances of above- or below-normal precipitation are prominent in western Arizona, west Texas, and most of northern Mexico (Fig. 7, top). The three-month temperature outlook calls for increased chances of above-normal temperatures across the U.S. Southwest and northern Mexico (Fig. 7, bottom).

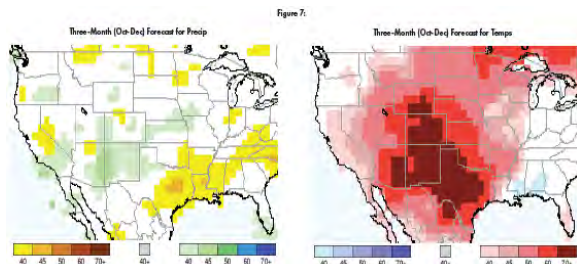


Figure 7:

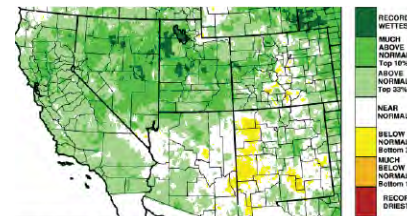


Figure 4: Oct 2018 - Aug 2019 - Precipitation Percentile Ranking

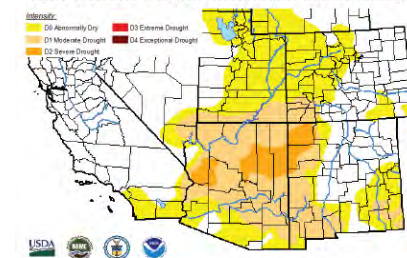


Figure 5: US Drought Monitor - Sep 10, 2019

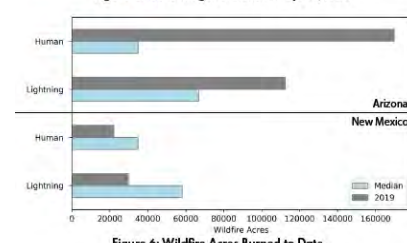


Figure 6: Wildfire Acres Burned to Date

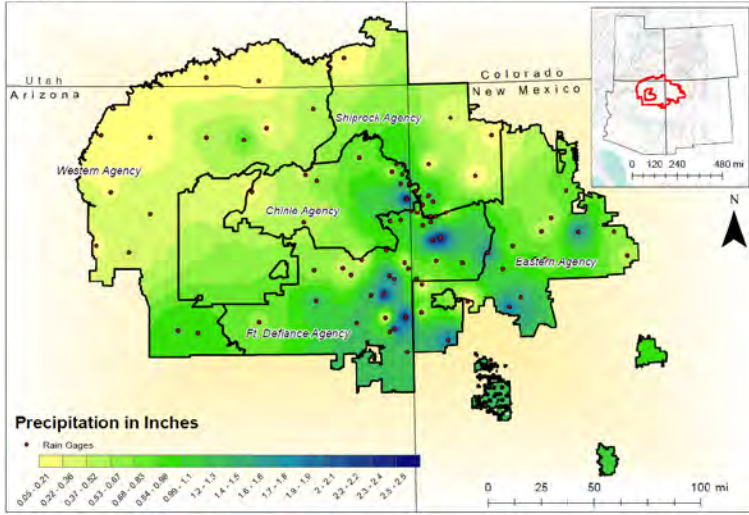
Published by the Climate Assessment for the Southwest (CLIMAS), with support from University of Arizona Cooperative Extension, the Arizona State Climate Office, and the New Mexico State Climate office.

Navajo Nation Precipitation Summary



Observed Precipitation on the Navajo Nation
(August 2019, WY 2019)

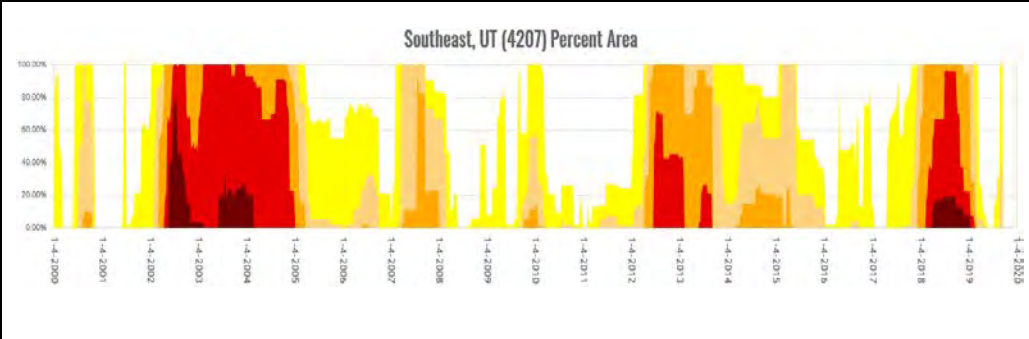
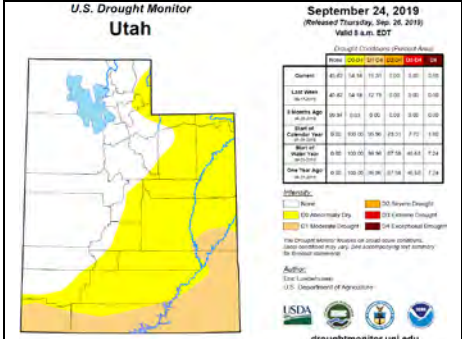
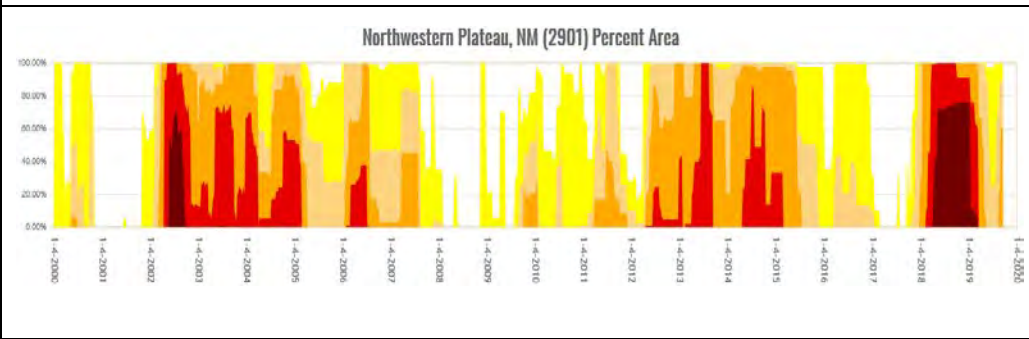
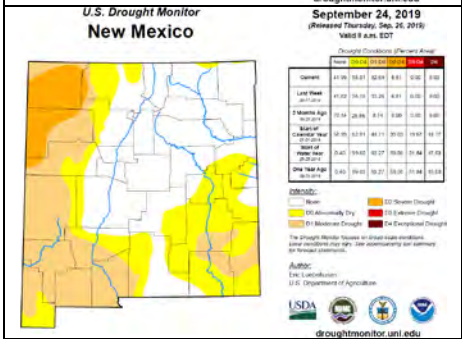
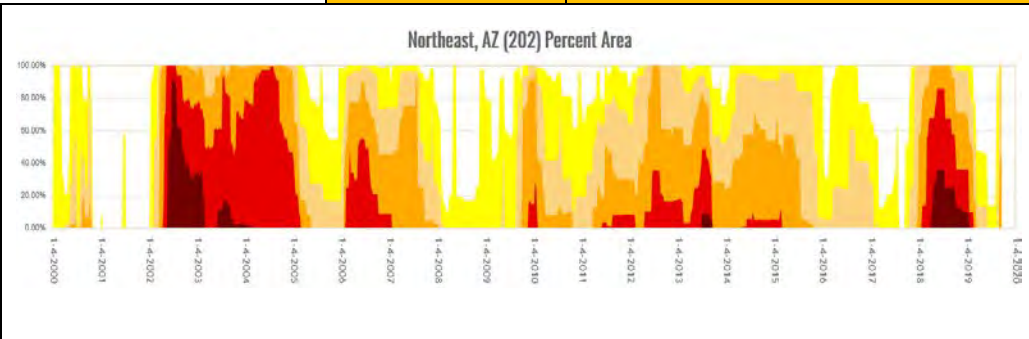
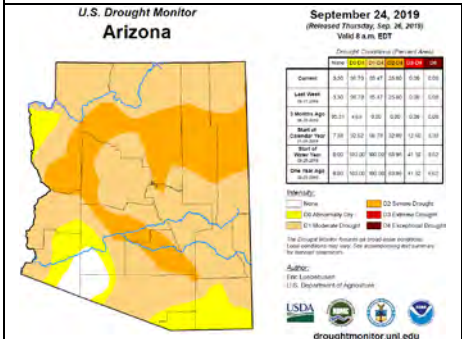
Division of Natural Resources
Department of Water Resources
Water Management Branch, WMI Section
PO Box 478
Fort Defiance, Arizona 86504
Phone: (929) 729-4804
Map by: Carlee McClellan, 2019



Agency	August	Avg	% of Avg
Chinle	0.86	1.83	47%
Eastern	0.85	1.57	54%
Fort Defiance	1.07	2.20	49%
Shiprock	0.55	1.56	35%
Western	0.35	1.23	28%

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/~nddwr_wmb/



September 2019