Southwest Drought Webinar

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Colorado Climate Center
June 25, 2018

Colorado State University

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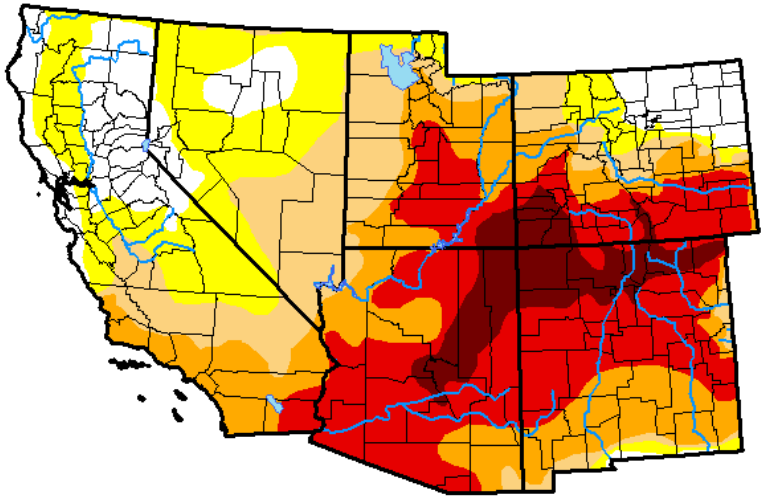
Current Drought

U.S. Drought Monitor
Drought evolution

U.S. Drought Monitor

Southwest



June 19, 2018

(Released Thursday, Jun. 21, 2018)

Valid 8 a.m. EDT

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	12.87	87.13	68.27	51.67	31.95	7.41
Last Week *06-12-2018*	12.51	87.49	68.77	51.95	32.47	7.43
3 Months Ago *03-20-2018*	3.99	96.01	69.32	47.11	16.26	0.00
Start of Calendar Year *01-02-2018*	26.99	73.01	40.50	9.04	0.00	0.00
Start of Water Year *09-26-2017*	72.18	27.82	5.15	0.00	0.00	0.00
One Year Ago *06-20-2017*	76.35	23.65	7.61	0.28	0.00	0.00

Intensity:

- D0 Abnormally Dry
- D1 Moderate Drought
- D2 Severe Drought
- D3 Extreme Drought
- D4 Exceptional Drought

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.

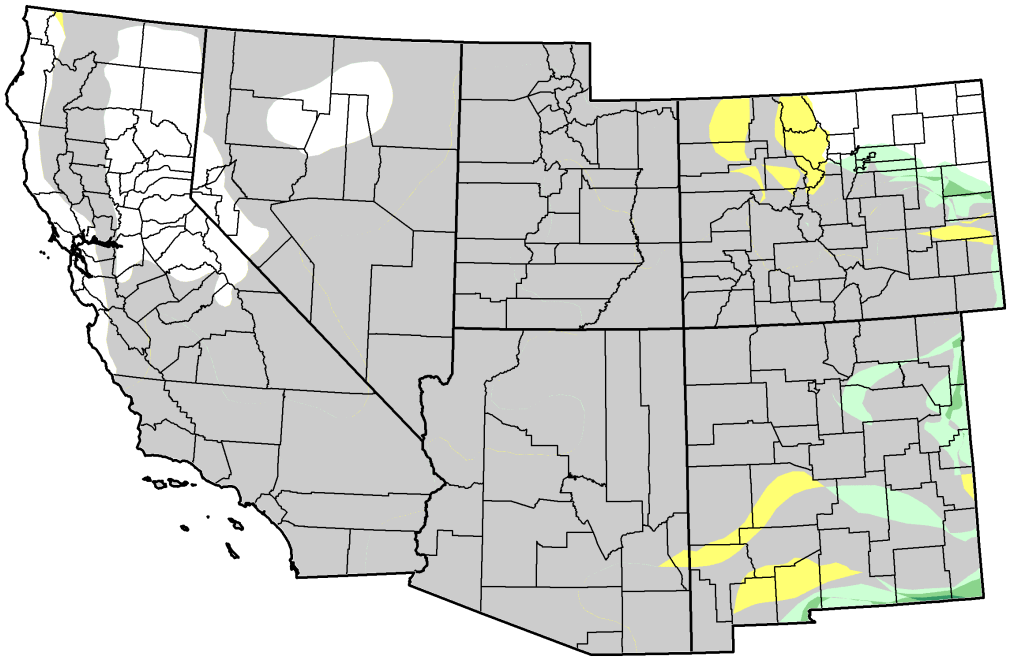
Author:

Brian Fuchs

National Drought Mitigation Center

http://droughtmonitor.unl.edu/

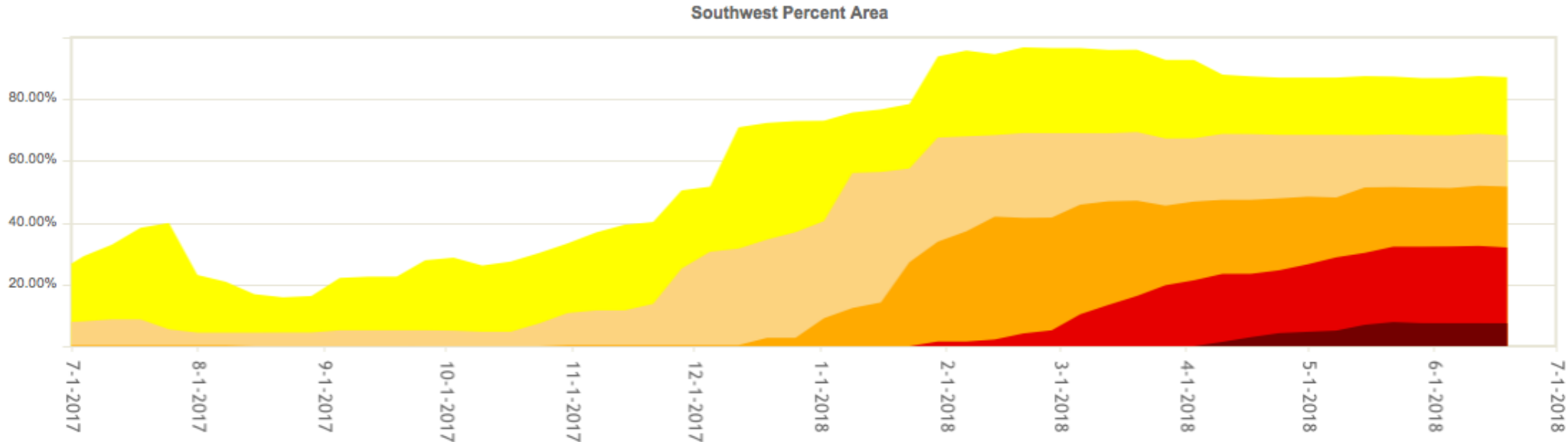
U.S. Drought Monitor Class Change - Southwest
1 Month



June 19, 2018
compared to
May 22, 2018

http://droughtmonitor.unl.edu

- 5 Class Degradation
- 4 Class Degradation
- 3 Class Degradation
- 2 Class Degradation
- 1 Class Degradation
- No Change
- 1 Class Improvement
- 2 Class Improvement
- 3 Class Improvement
- 4 Class Improvement
- 5 Class Improvement



Drought – Exceptional	0 to 2 (D4)
Drought – Extreme	2 to 5 (D3)
Drought – Severe	5 to 10 (D2)
Drought – Moderate	10 to 20 (D1)
Abnormally Dry	20 to 30 (D0)

U.S. Drought Monitor Time Series:
droughtmonitor.unl.edu/Data/Timeseries.aspx

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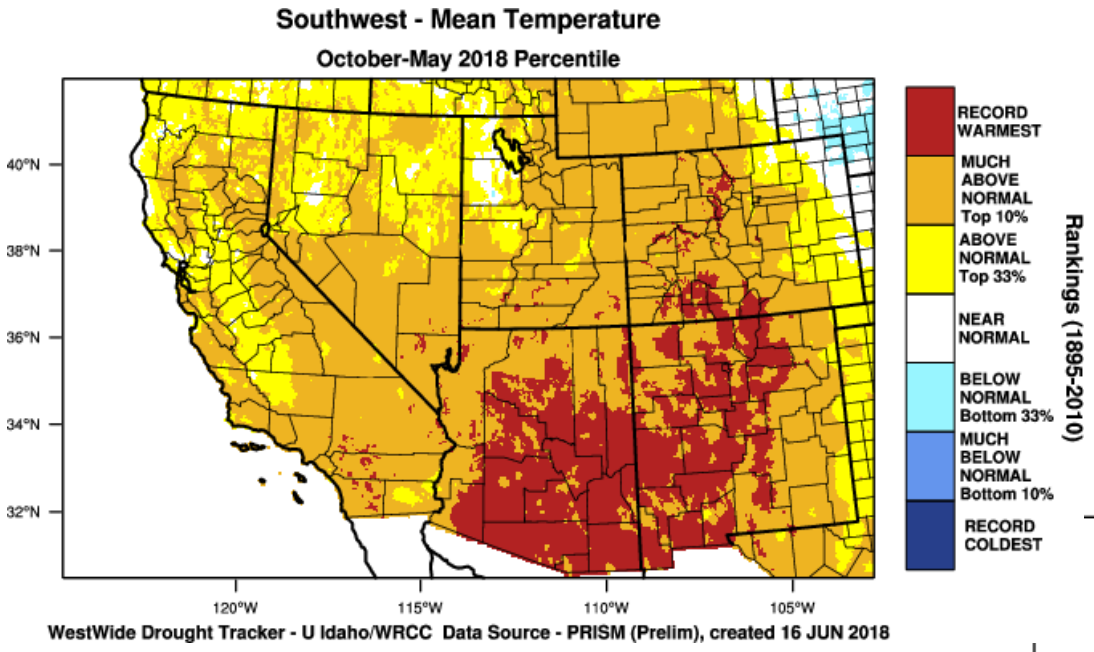
from denverpost.com (June Record High Temperatures)

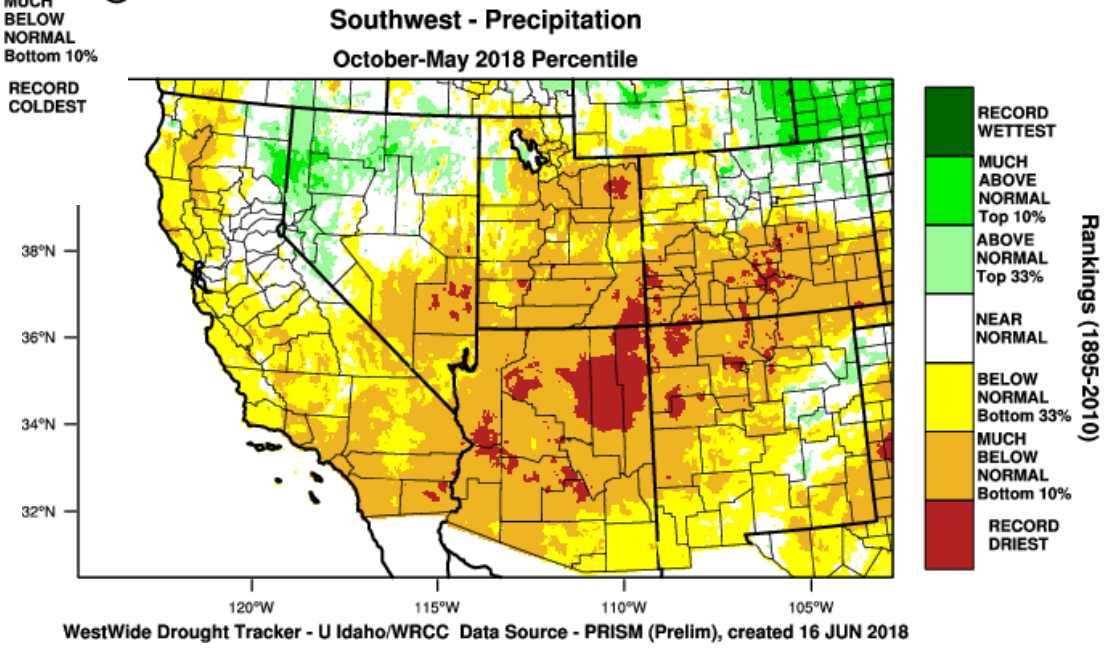
Recent Climate

Precipitation
Temperature
Historical Ranks

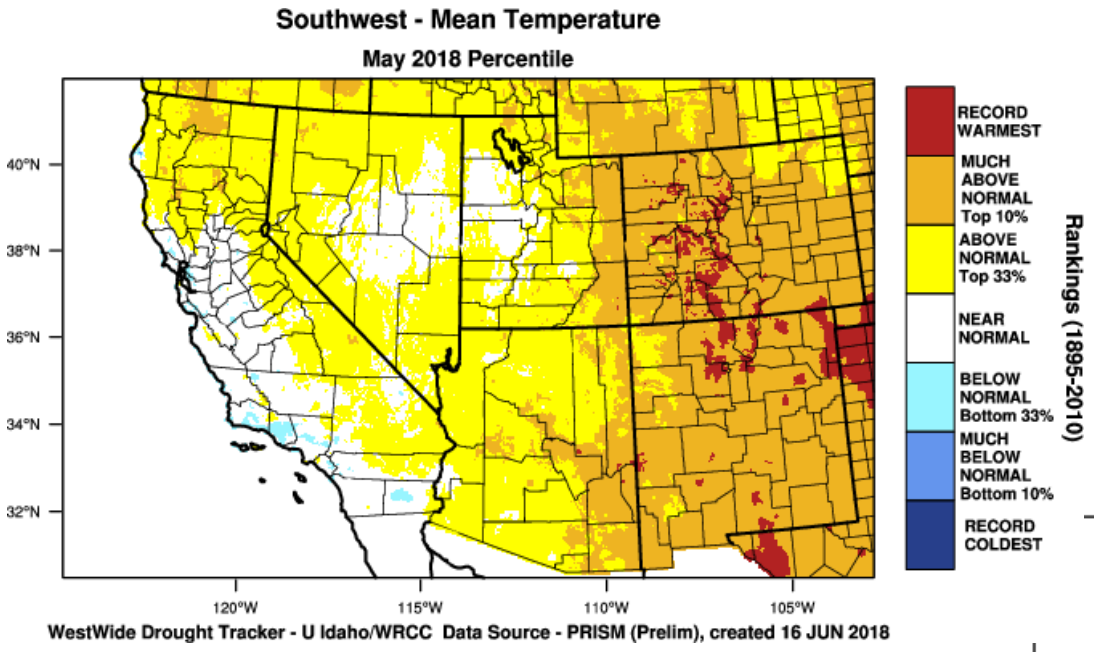
Hydrology
Vegetation



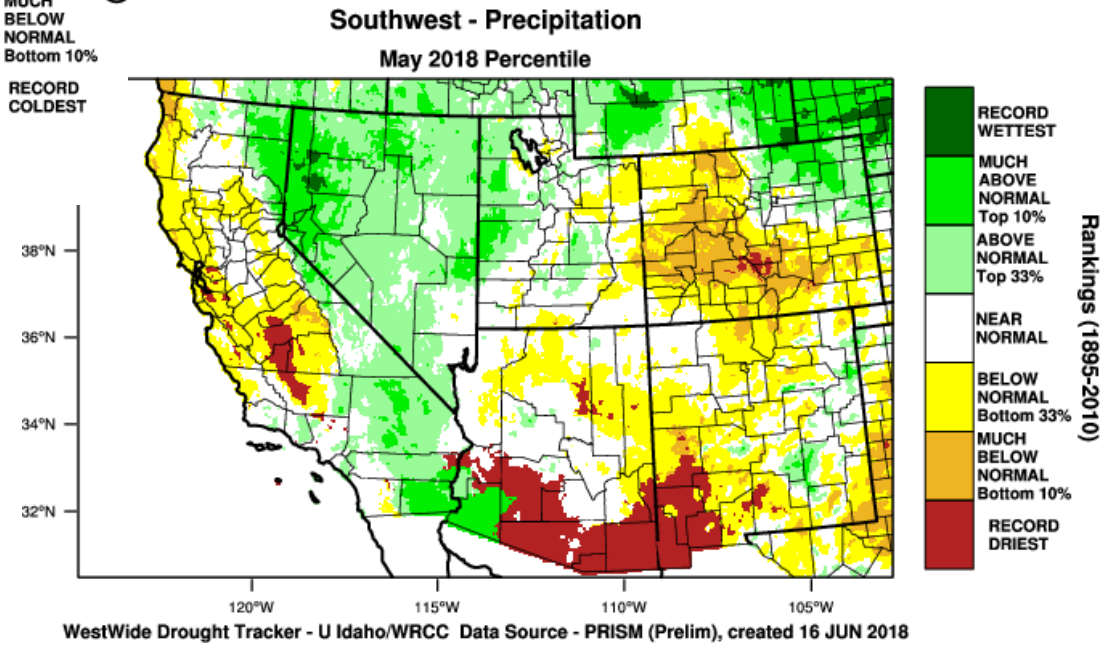
What's been happening since the beginning of the water year?



WestWide Drought Tracker:
https://wrcc.dri.edu/wwdt/



What happened last month?



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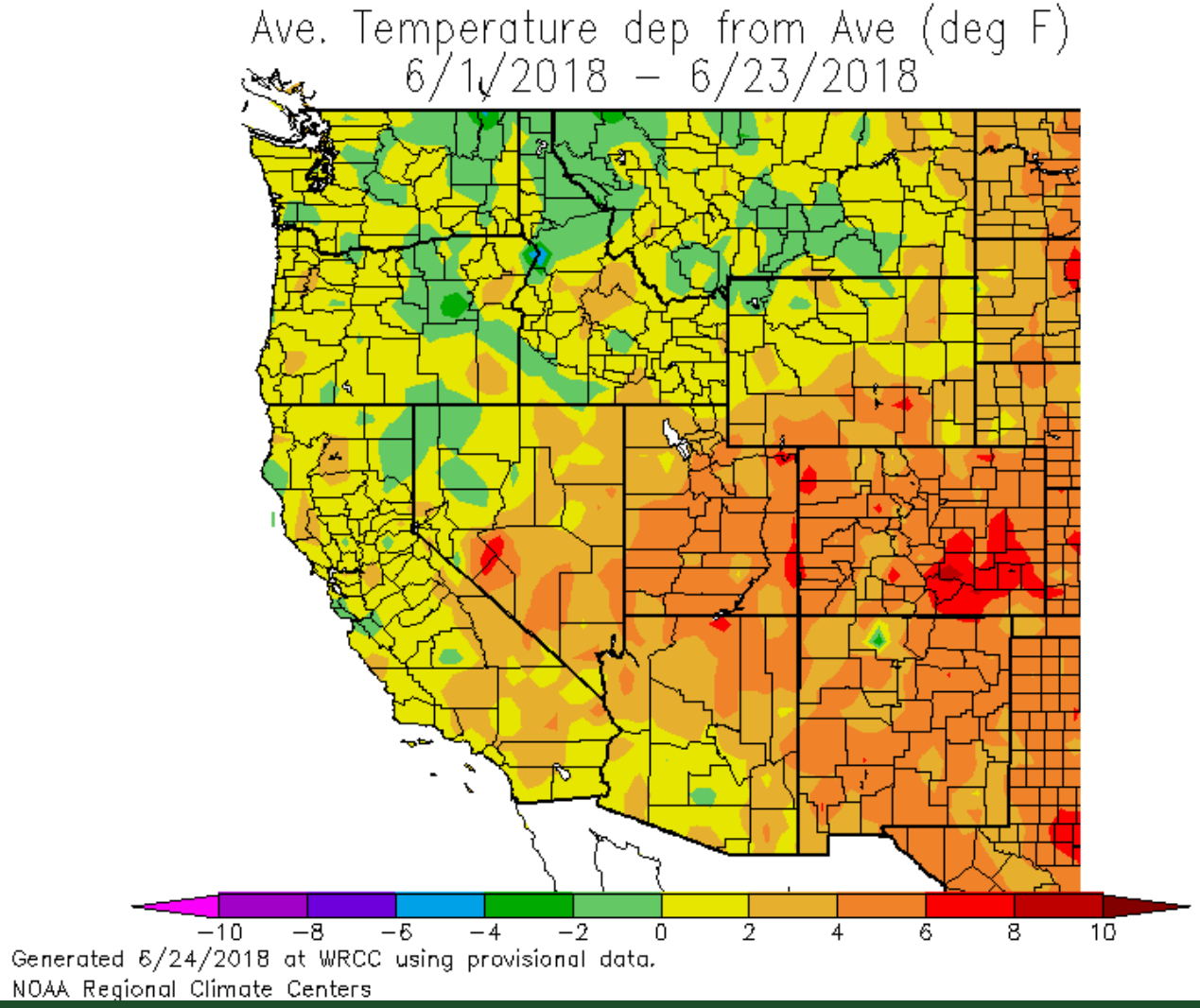
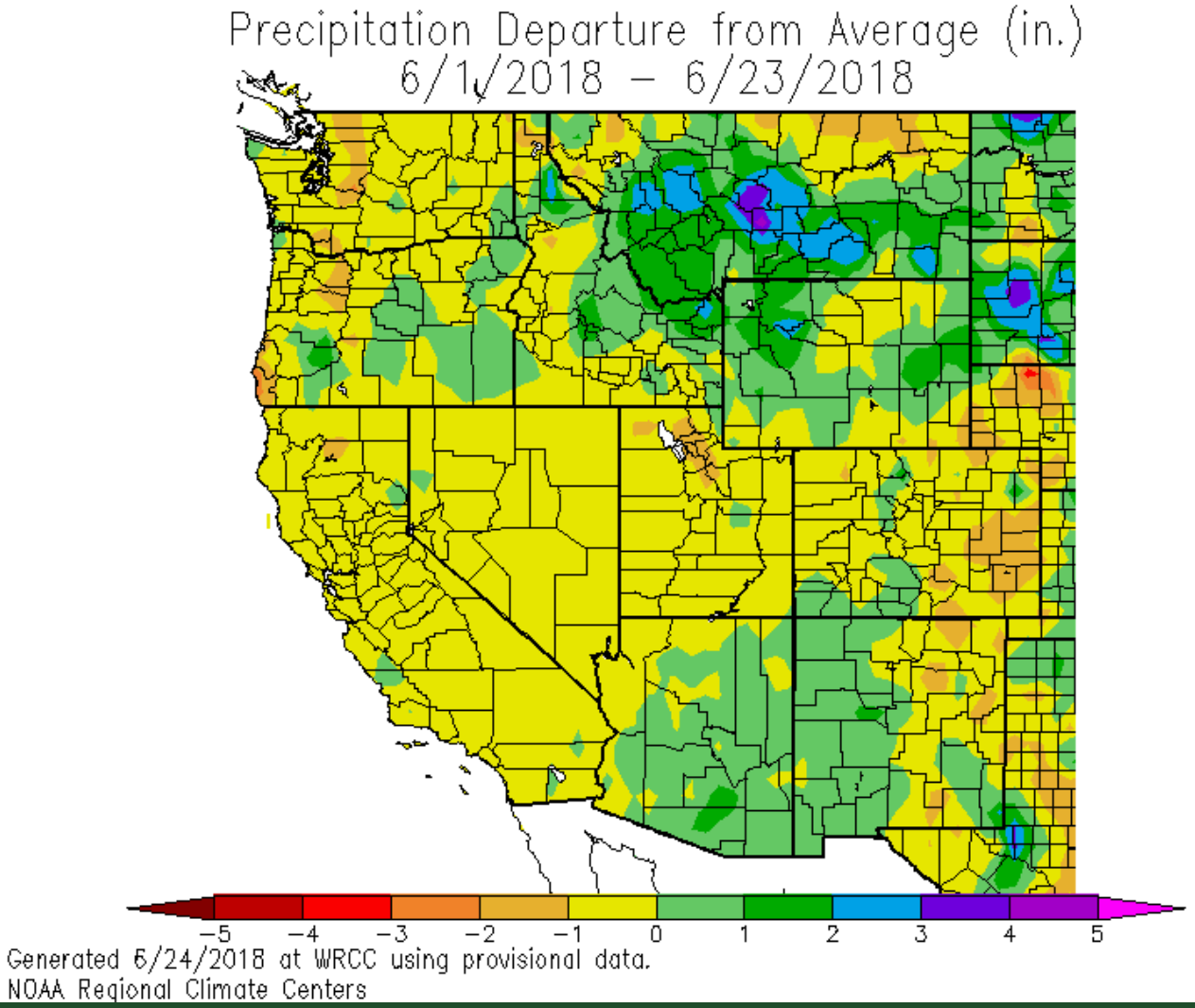


Western Climate Anomaly Maps:
https://wrcc.dri.edu/anom/



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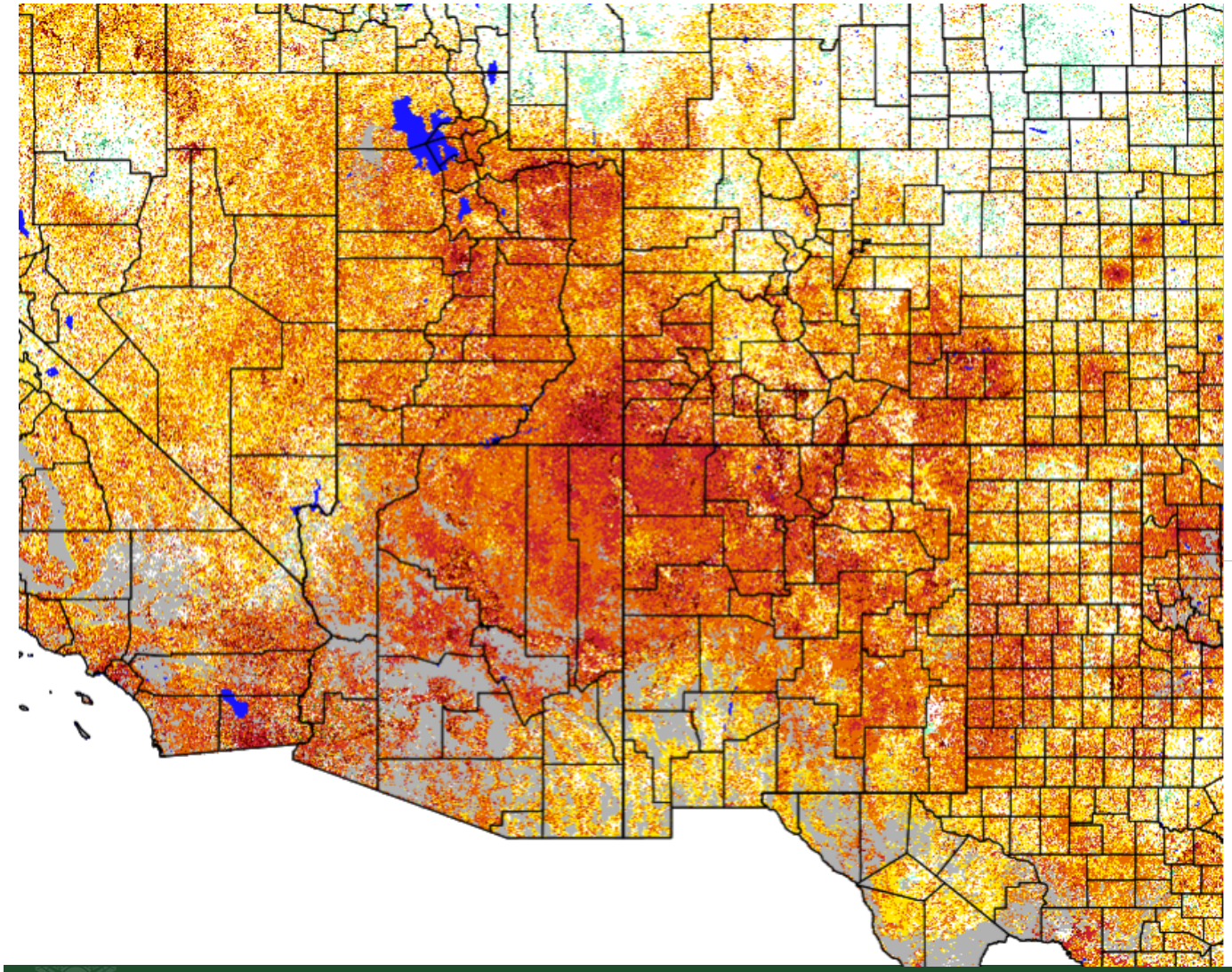
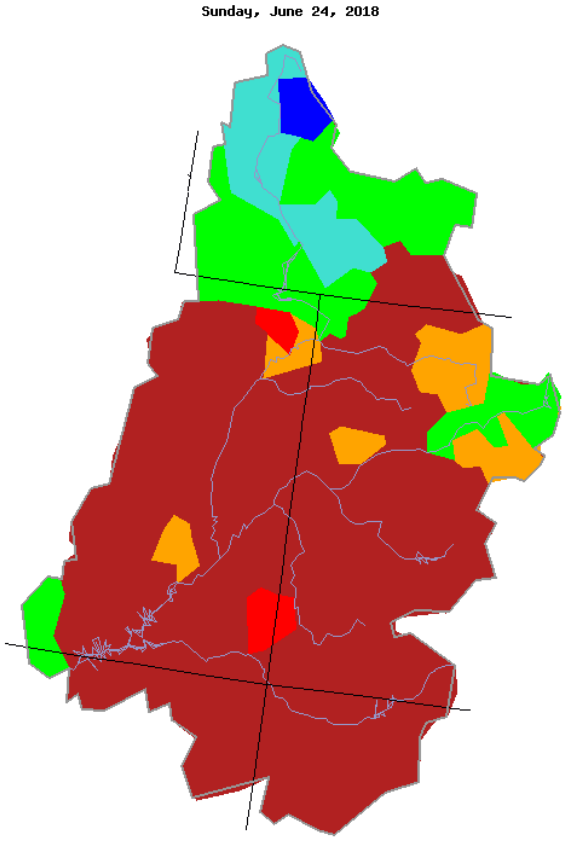
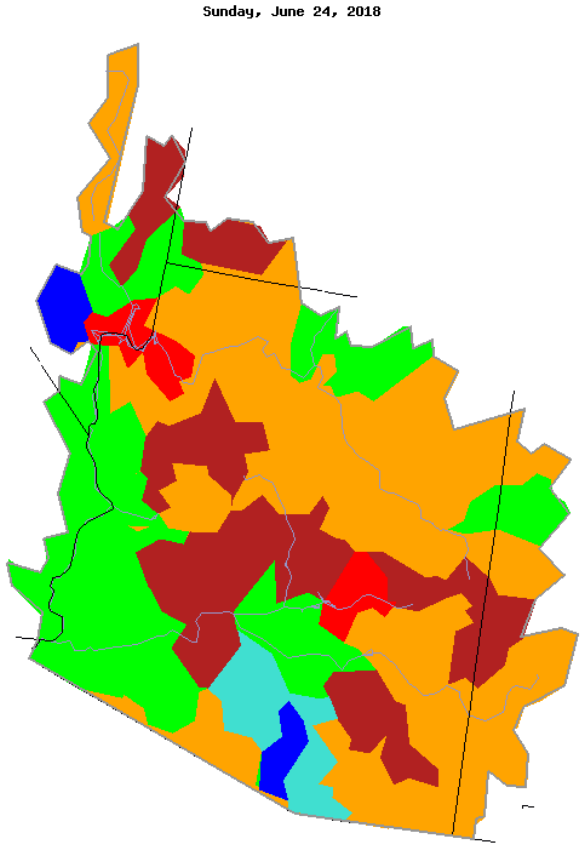


VegDRI – satellite derived vegetation conditions on June 3

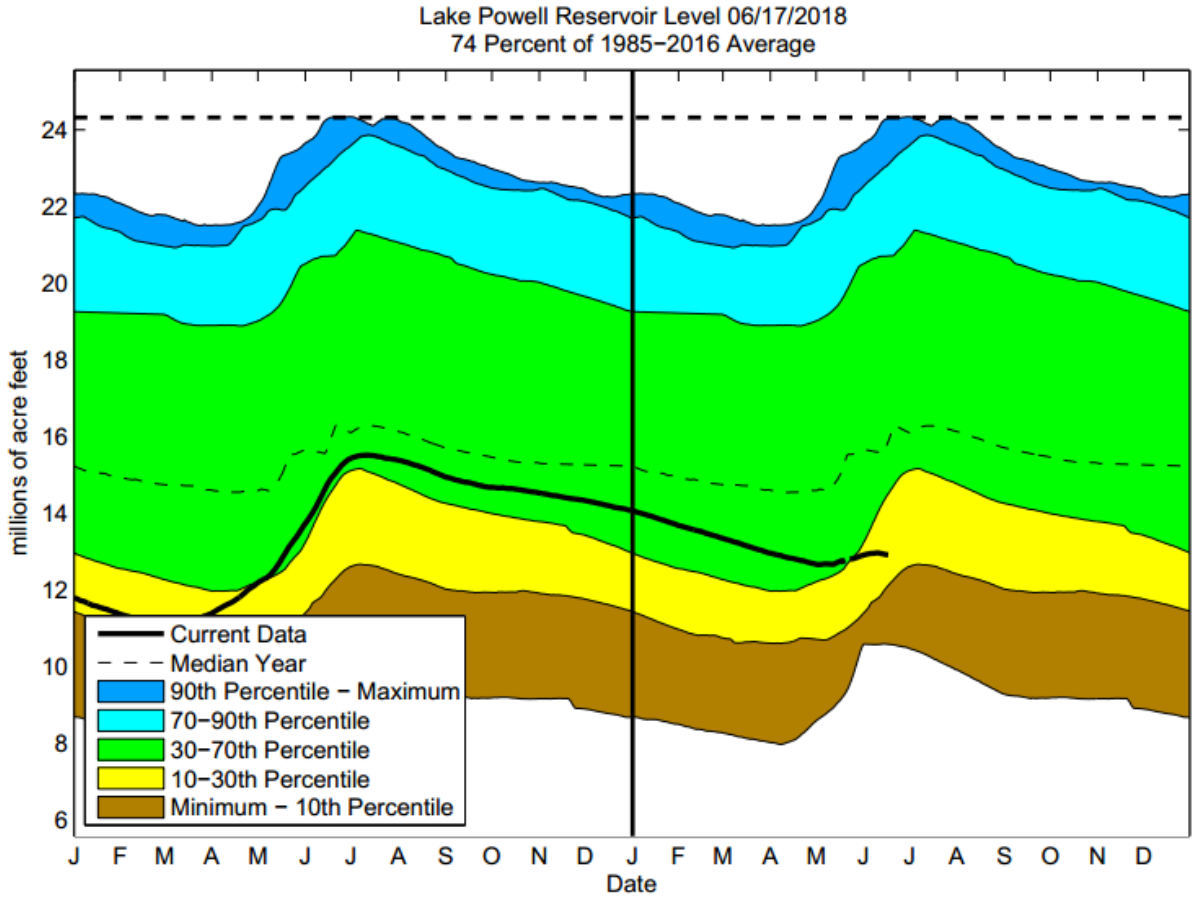




Explanation - Percentile classes							
Low	<10	10-24	25-75	76-90	>90	High	No Data
	Much below normal	Below normal	Normal	Above normal	Much above normal		

28-day Averaged Streamflows for the Upper Colorado (left) and Lower Colorado (right)

waterwatch.usgs.gov



produced by Peter Goble at:
climate.colostate.edu/~drought

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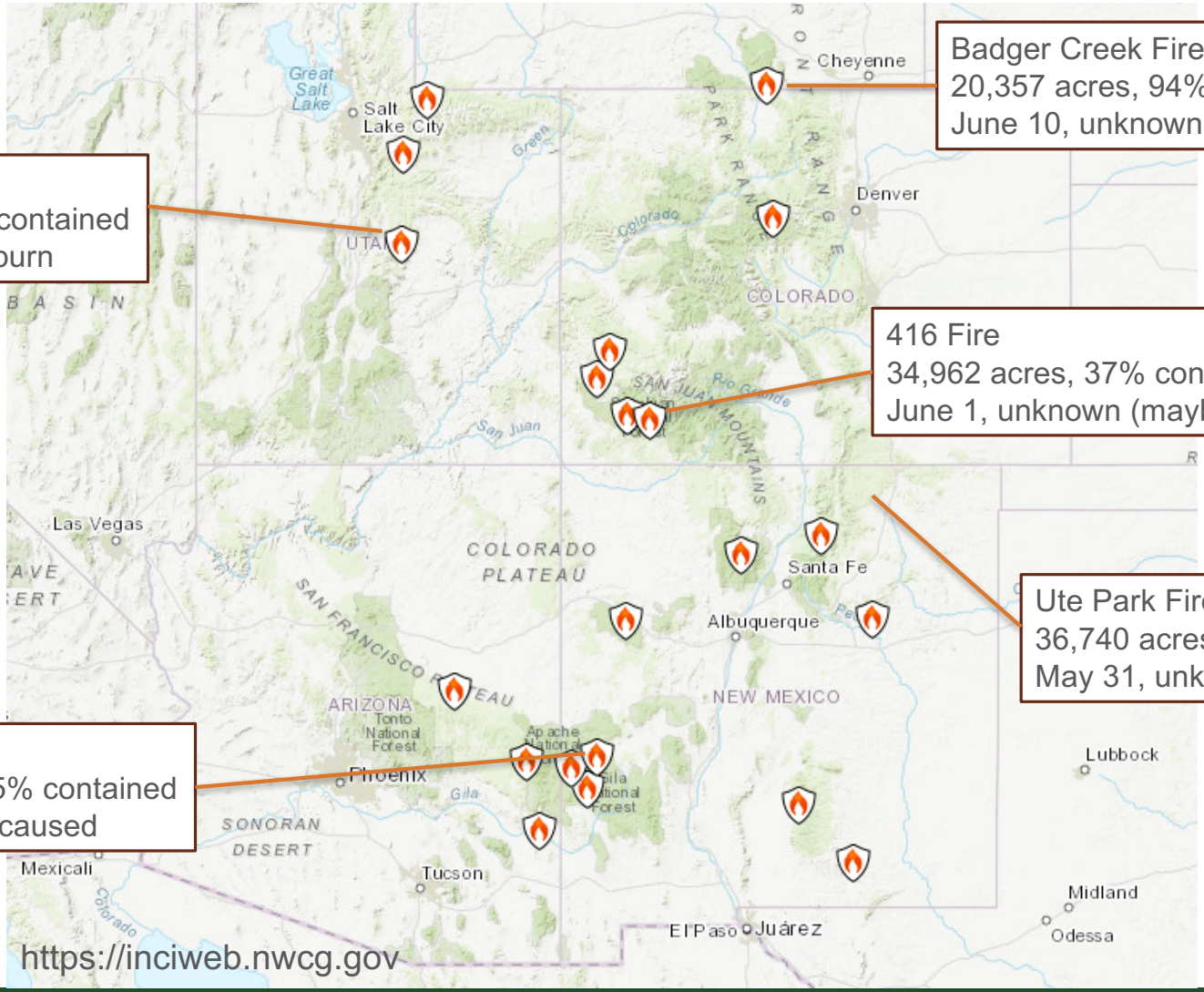
Wildfire Season

List of major fires
Impacts of fire

picture by Emile Elias (416 Fire)



Badger Creek Fire
20,357 acres, 94% contained
June 10, unknown

Trail Mountain Fire
17,697 acres, 79% contained
June 6, prescribed burn

416 Fire
34,962 acres, 37% contained
June 1, unknown (maybe train?)

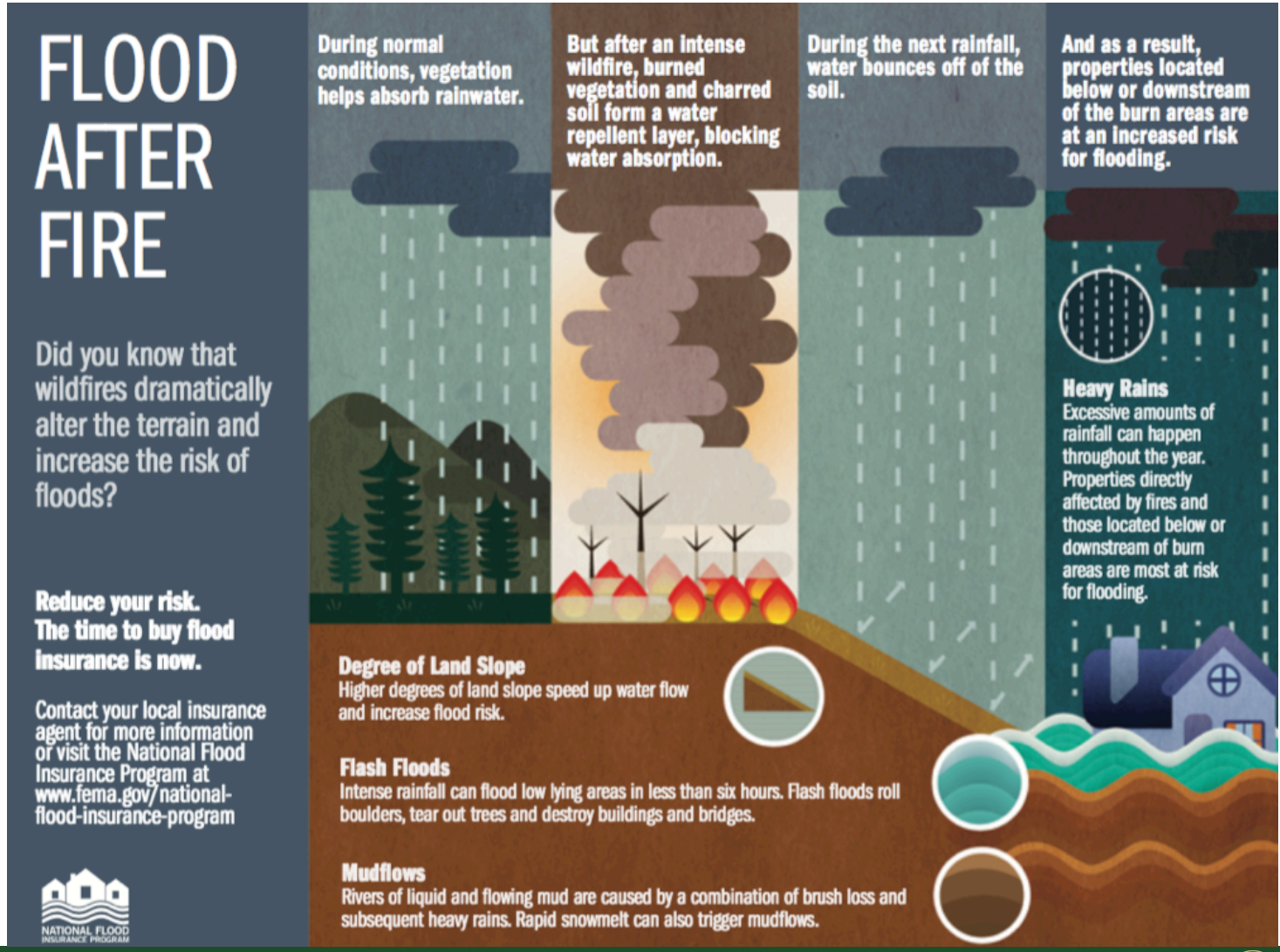
Ute Park Fire
36,740 acres, 85% contained
May 31, unknown

Buzzard Fire
50,296 acres, 85% contained
May 22, human caused

https://inciweb.nwcg.gov

Fire Statistics

- ✓ 28 active fires listed on Inciweb in the last 2 weeks
- ✓ Over 170,000 acres of new fire since mid-May
- ✓ Majority are human-caused with some lightning caused
- ✓ In Arizona, by the end of April, 604 of the 611 wildfires that occurred were human caused – only 7 due to lightning.



https://www.usfa.fema.gov

National Forest Closures:

- Apache
- Navajo
- Coconino
- Tonto
- Gila
- Sante Fe
- San Juan

Fire Restrictions

- Arizona: most of state under Stage II or Stage 1 Restrictions
- Utah: widespread active restrictions in southwest and southeast regions
- Colorado: 50 out of 64 counties reporting fire bans/restrictions
- New Mexico: widespread Stage II Restrictions

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Impacts

Anecdotal stories
Pictures

Ranching Impact: With no precipitation for dryland fields and grasslands, there is no food for cattle. This results in ranchers having to haul in hay (and water) or liquidate the herd.
**(multiple reports from all Four Corners states)

photo courtesy Deseret News, Utah

One irrigation company's records show Sanpete County, UT hasn't been this dry in 41 years.

“The ecosystem has been starved for a long time with just the occasional $1 menu cheeseburger thrown to it…”

Royce Fontenot, describing the New Mexico drought

photo courtesy of Royce Fontenot (National Weather Service) – northeast NM

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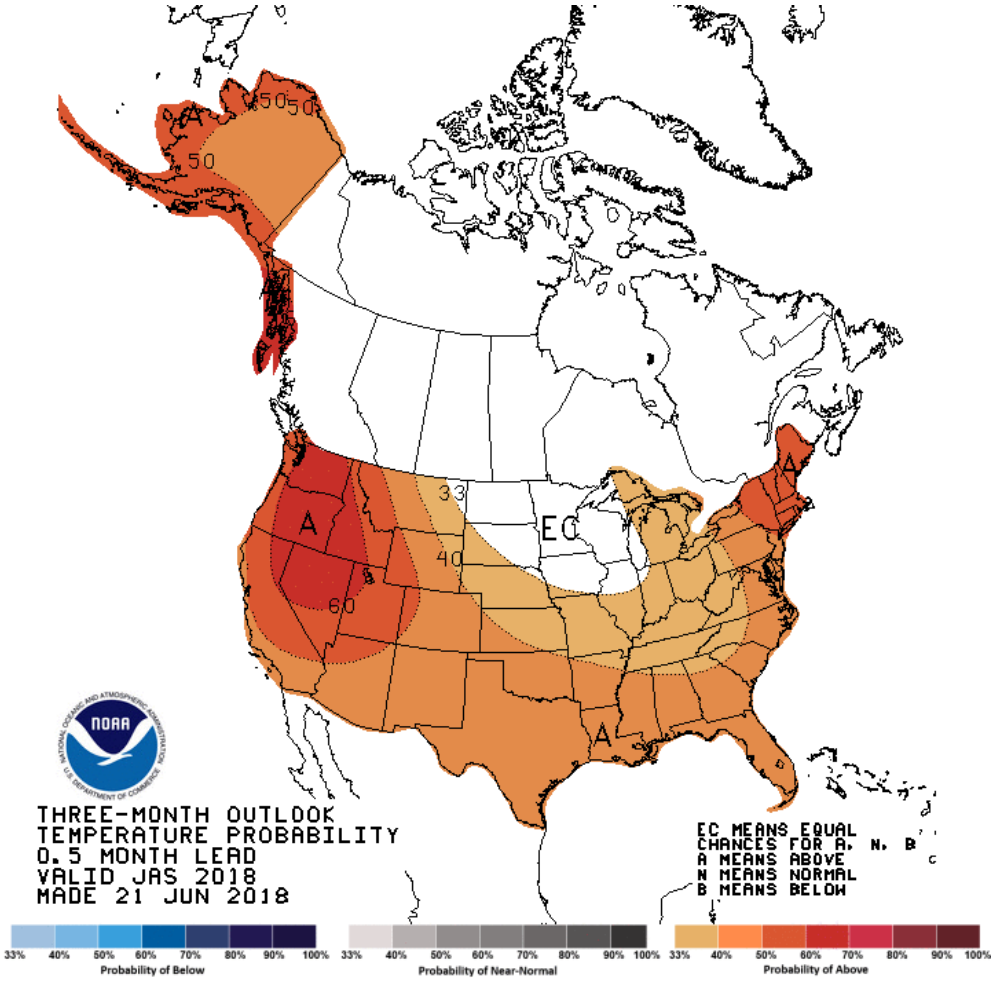
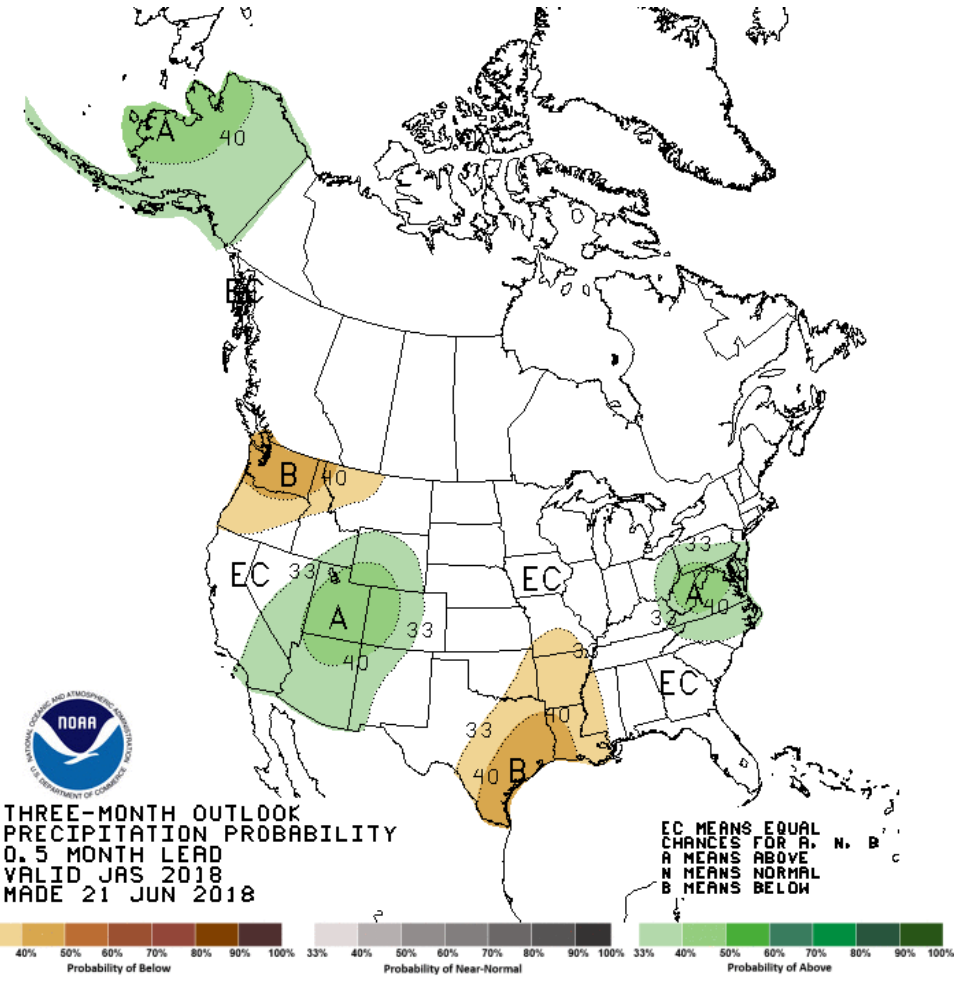
Outlook

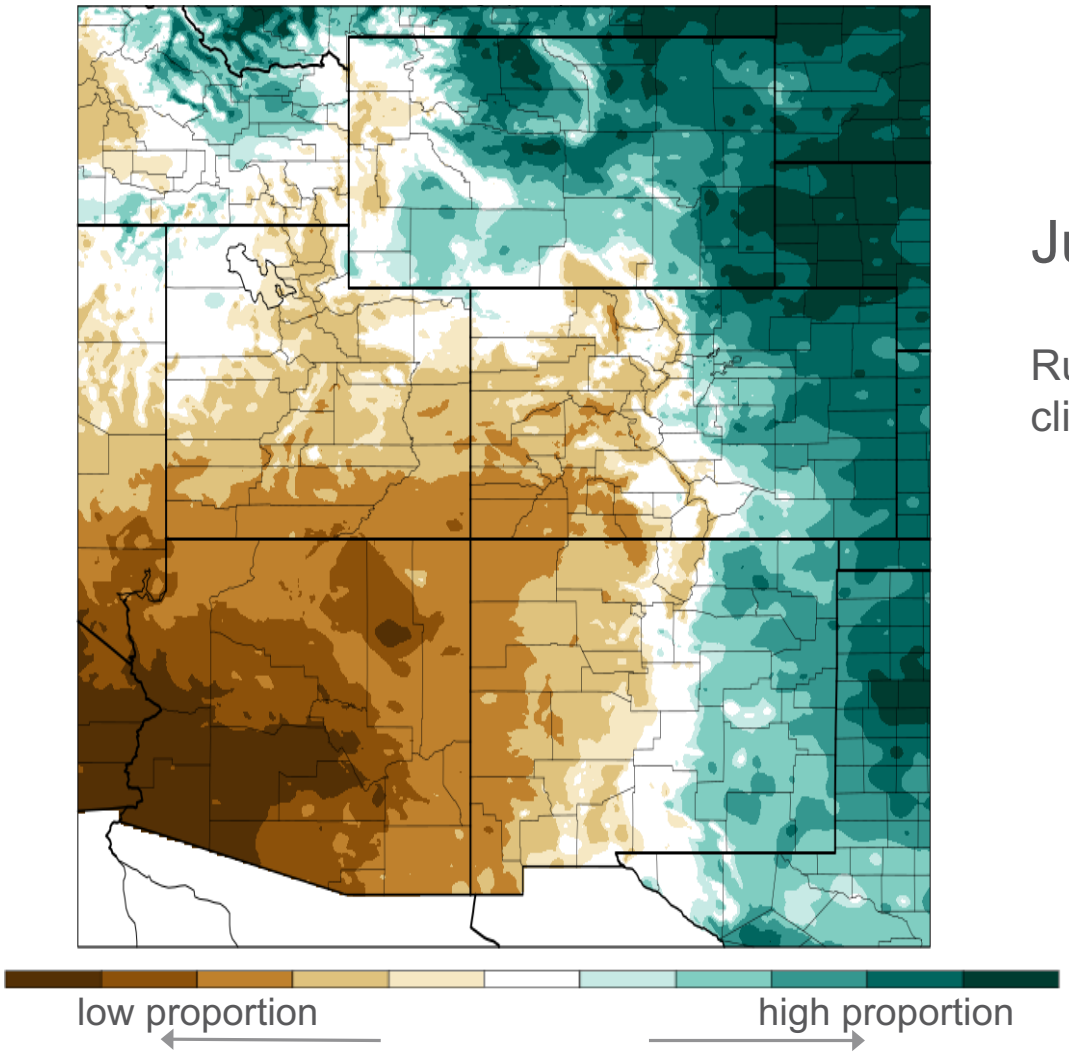
How do we get back to normal?

What's in store for us if El Niño arrives?



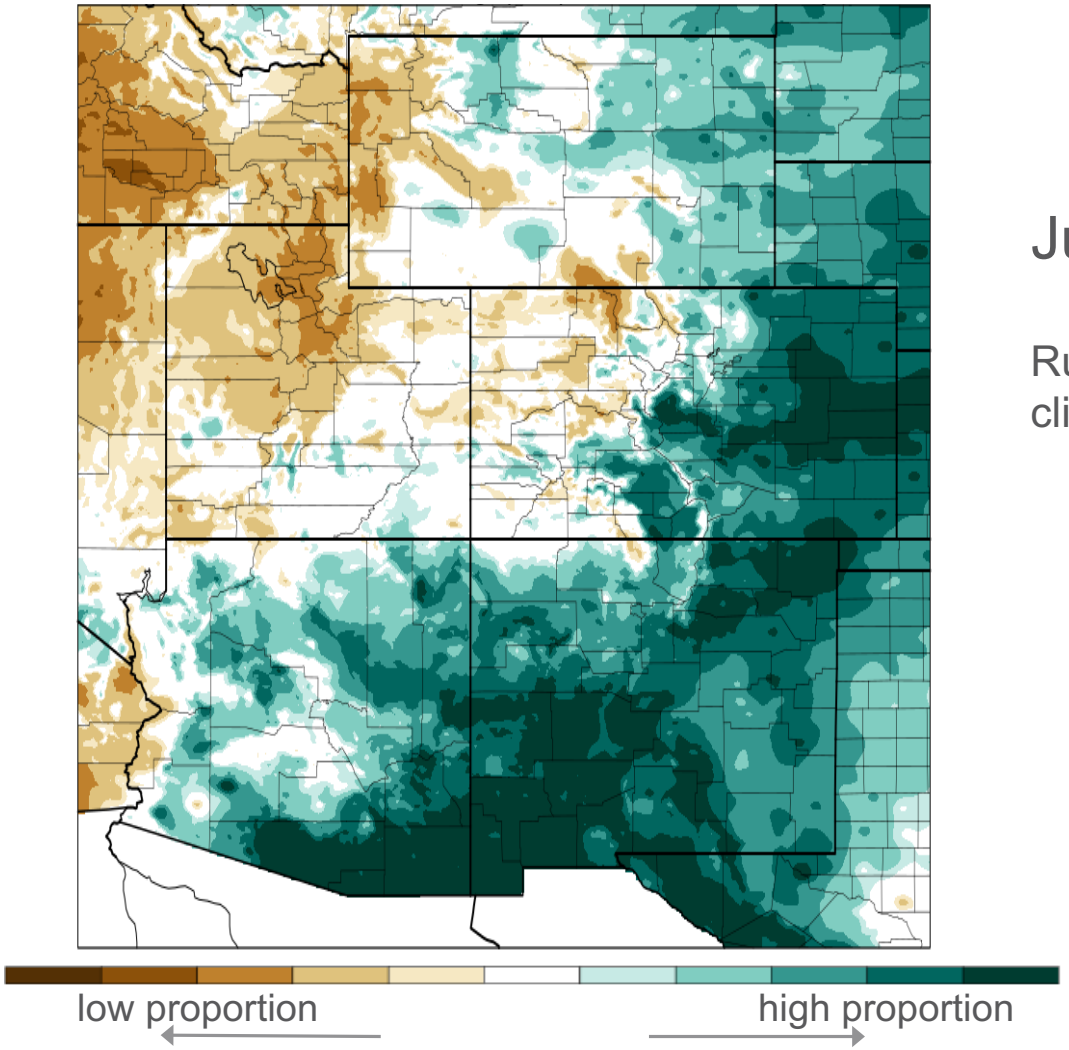


Seasonal Outlook from cpc.ncep.noaa.gov



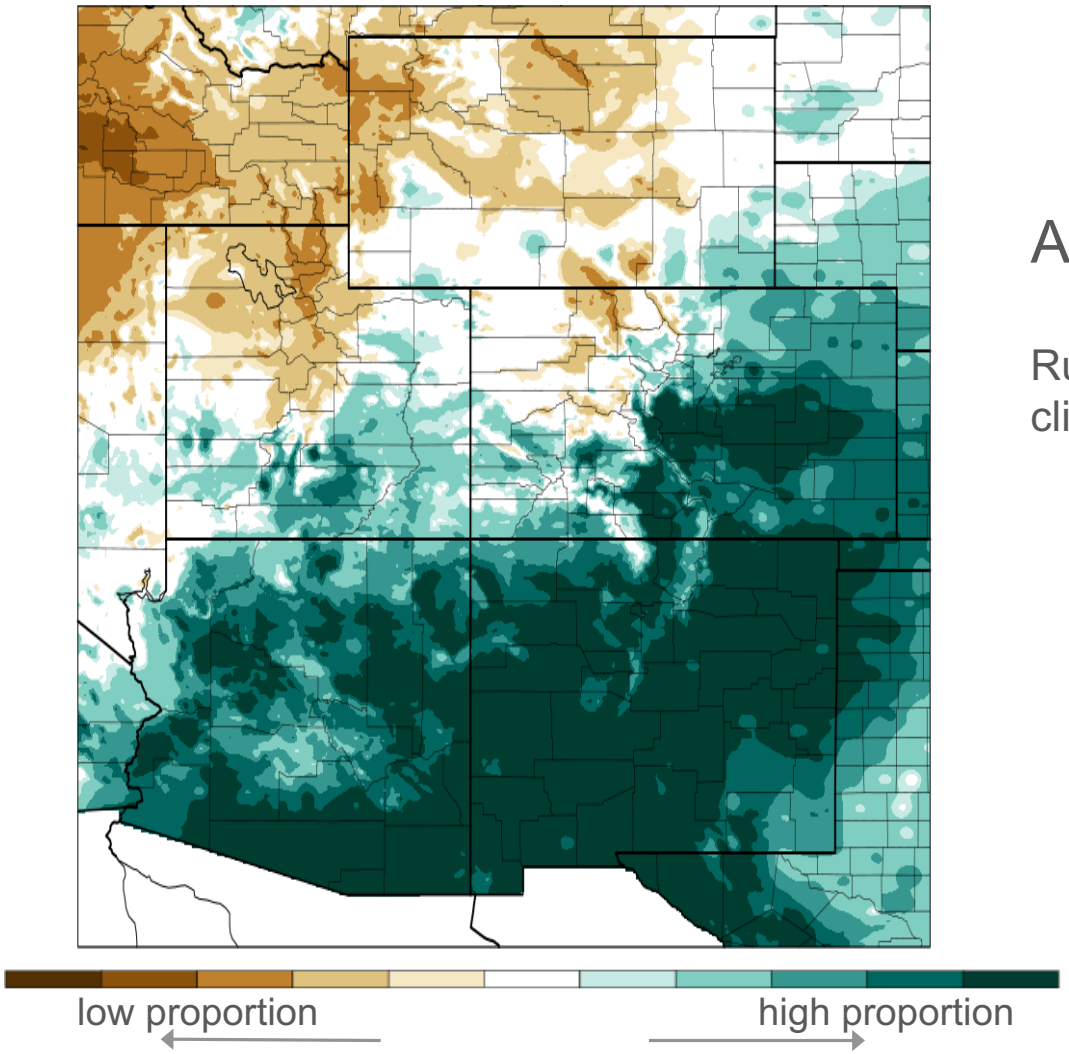
June Precipitation Proportion

Russ Schumacher,
climate.colostate.edu



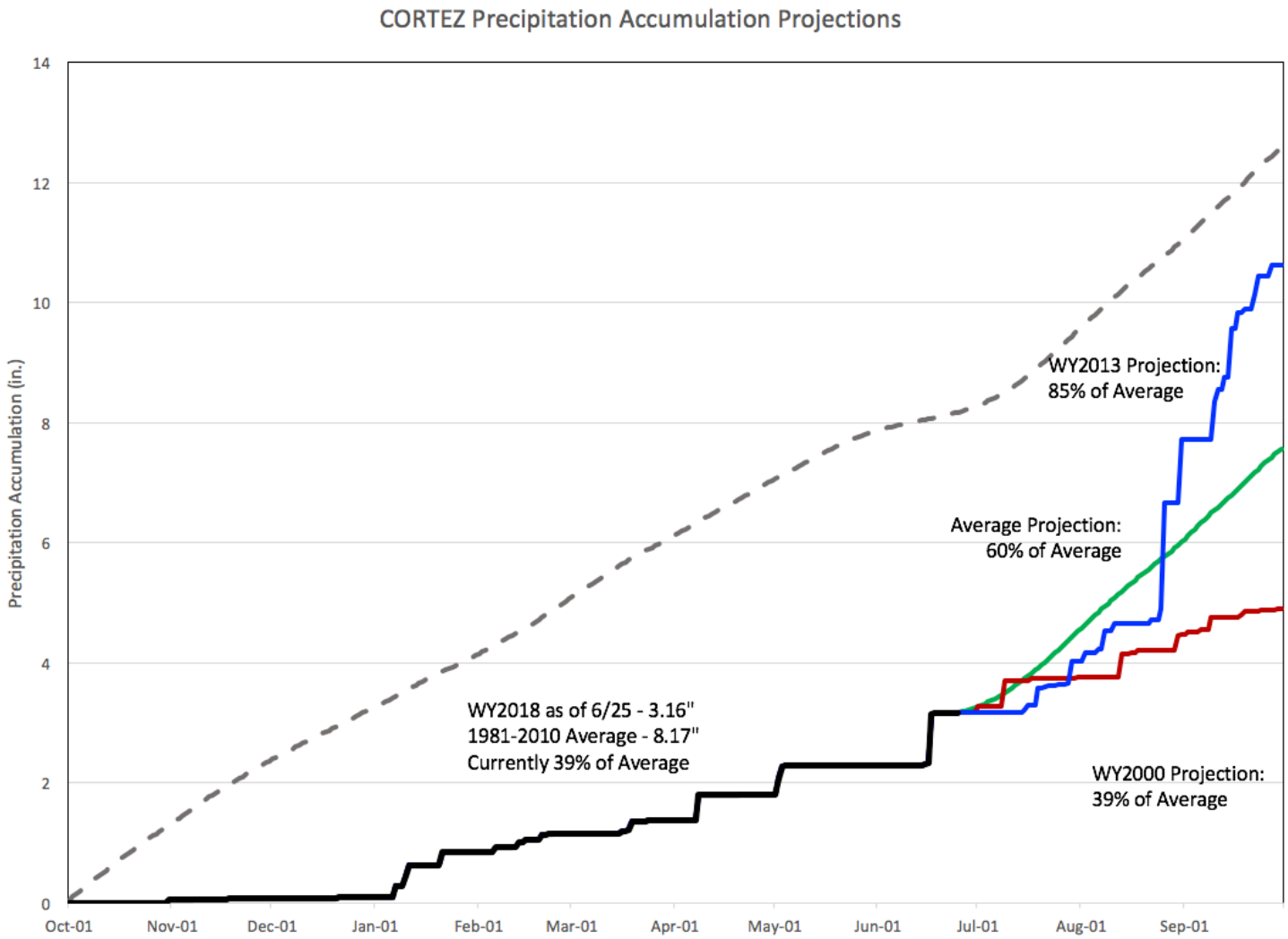
July Precipitation Proportion

Russ Schumacher,
climate.colostate.edu

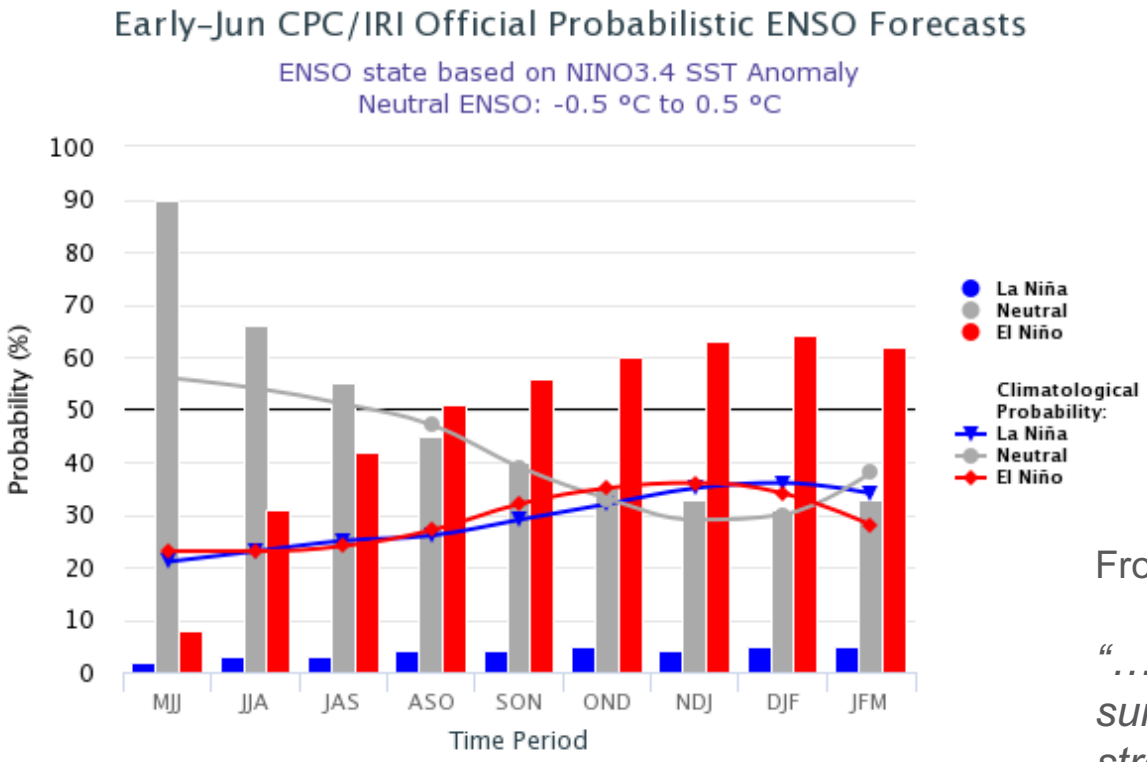


Aug. Precipitation Proportion

Russ Schumacher,
climate.colostate.edu


CORTEZ Precipitation Accumulation Projections
Precipitation Accumulation (in.)
14
12
10
8
6
4
2
0
Oct-01
Nov-01
Dec-01
Jan-01
Feb-01
Mar-01
Apr-01
May-01
Jun-01
Jul-01
Aug-01
Sep-01
WY2013 Projection:
85% of Average
Average Projection:
60% of Average
WY2018 as of 6/25 - 3.16"
1981-2010 Average - 8.17"
Currently 39% of Average
WY2000 Projection:
39% of Average

An El Niño Watch has been issued….

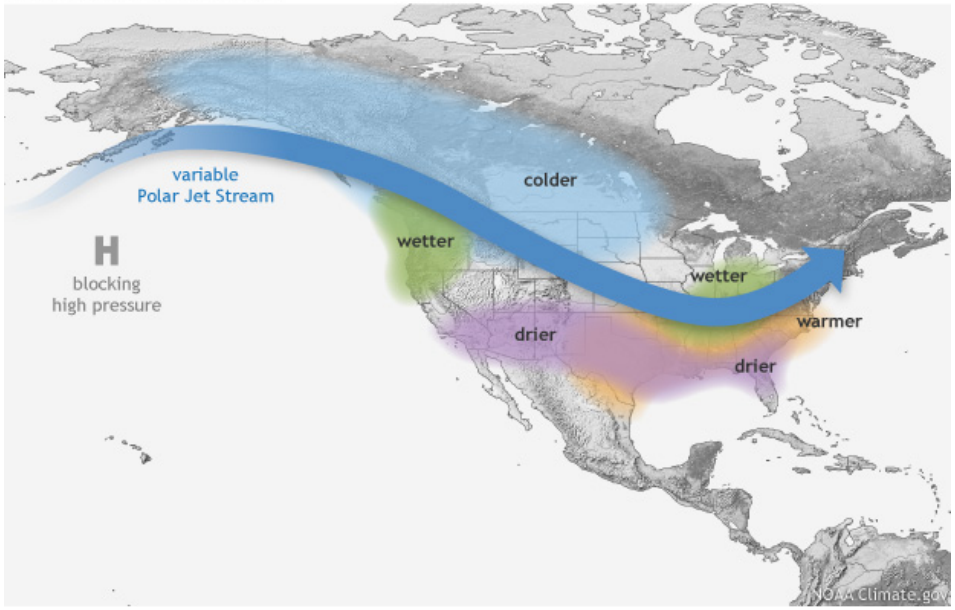


From the IRI ENSO Forecast:

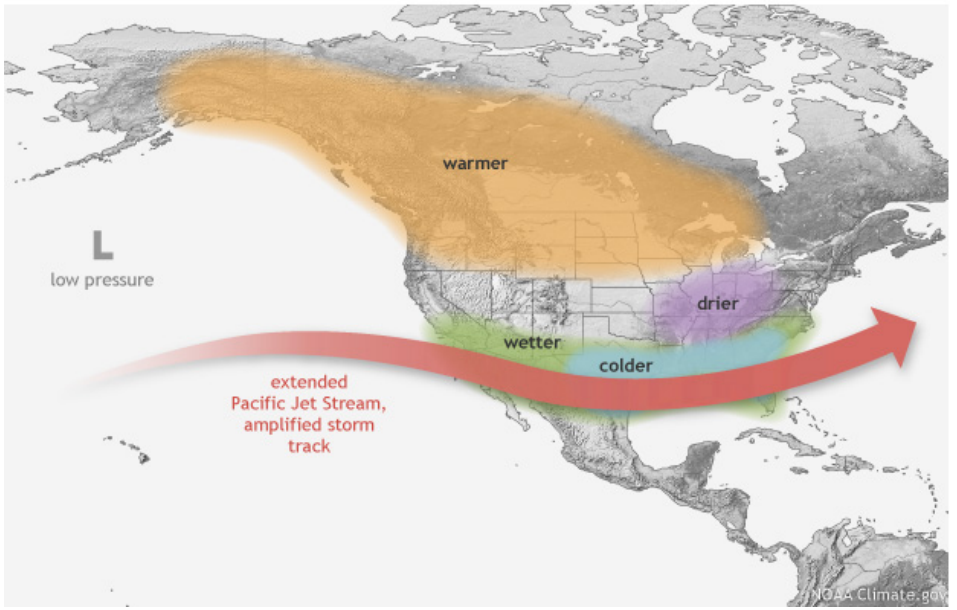
"…weak El Niño development during late summer, growing to possibly moderate strength during fall and winter…"

https://iri.columbia.edu/our-expertise/climate/forecasts/enso/current/

WINTER LA NIÑA PATTERN

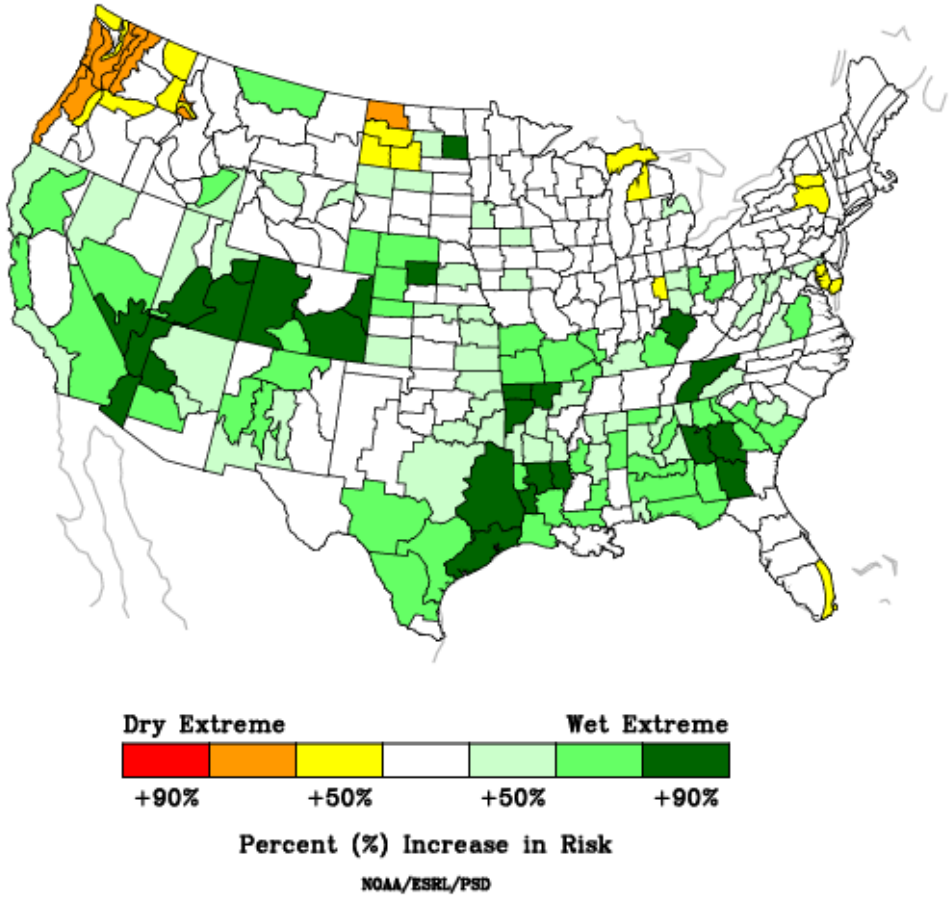


WINTER EL NIÑO PATTERN

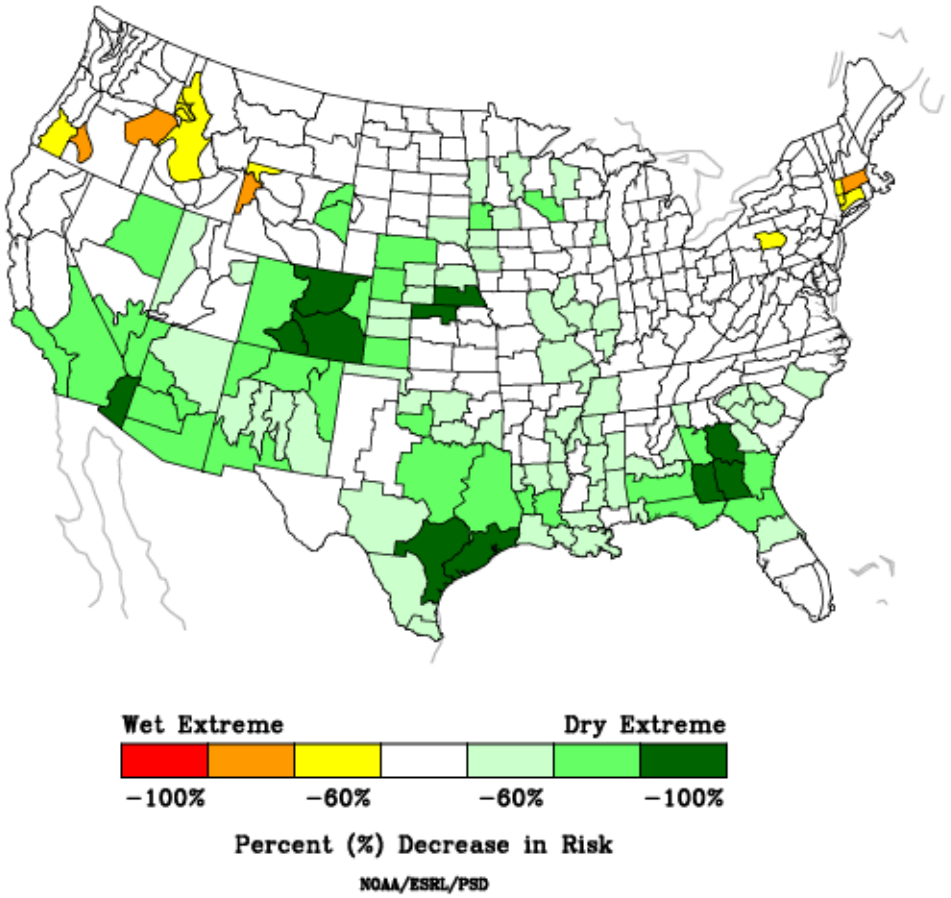


from climate.gov

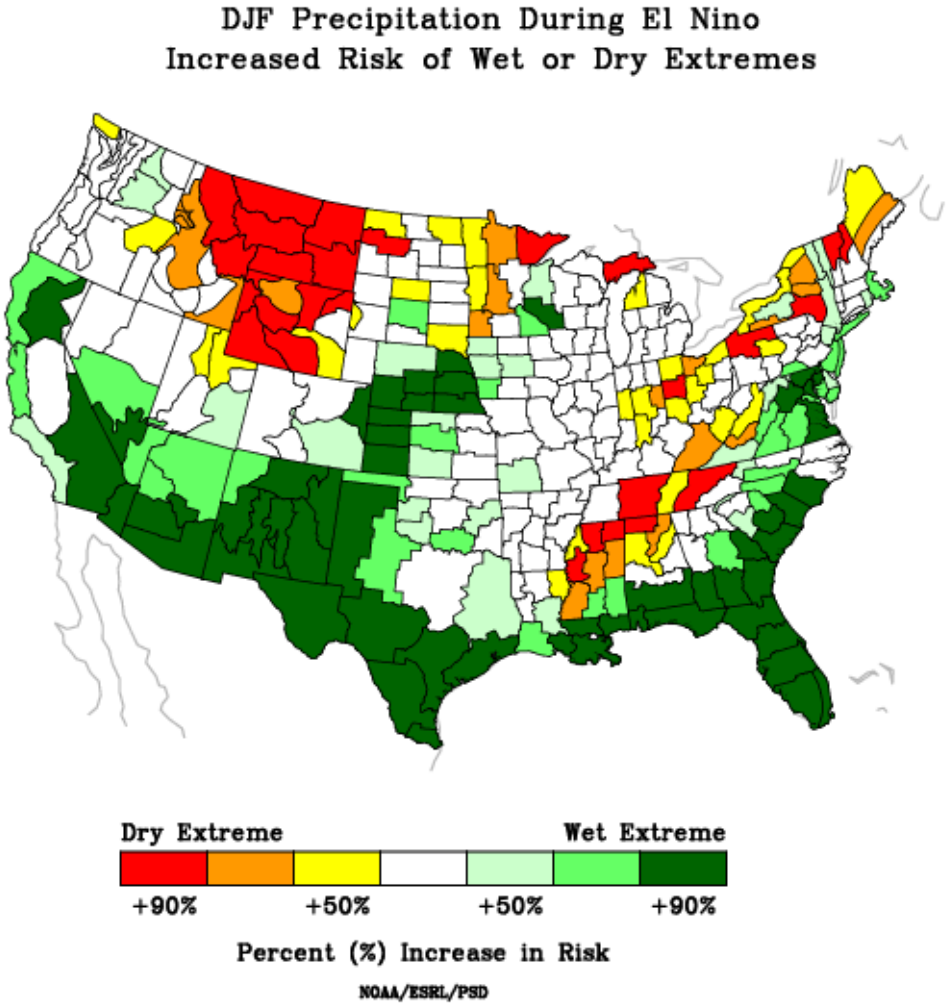
SON Precipitation During El Nino
Increased Risk of Wet or Dry Extremes

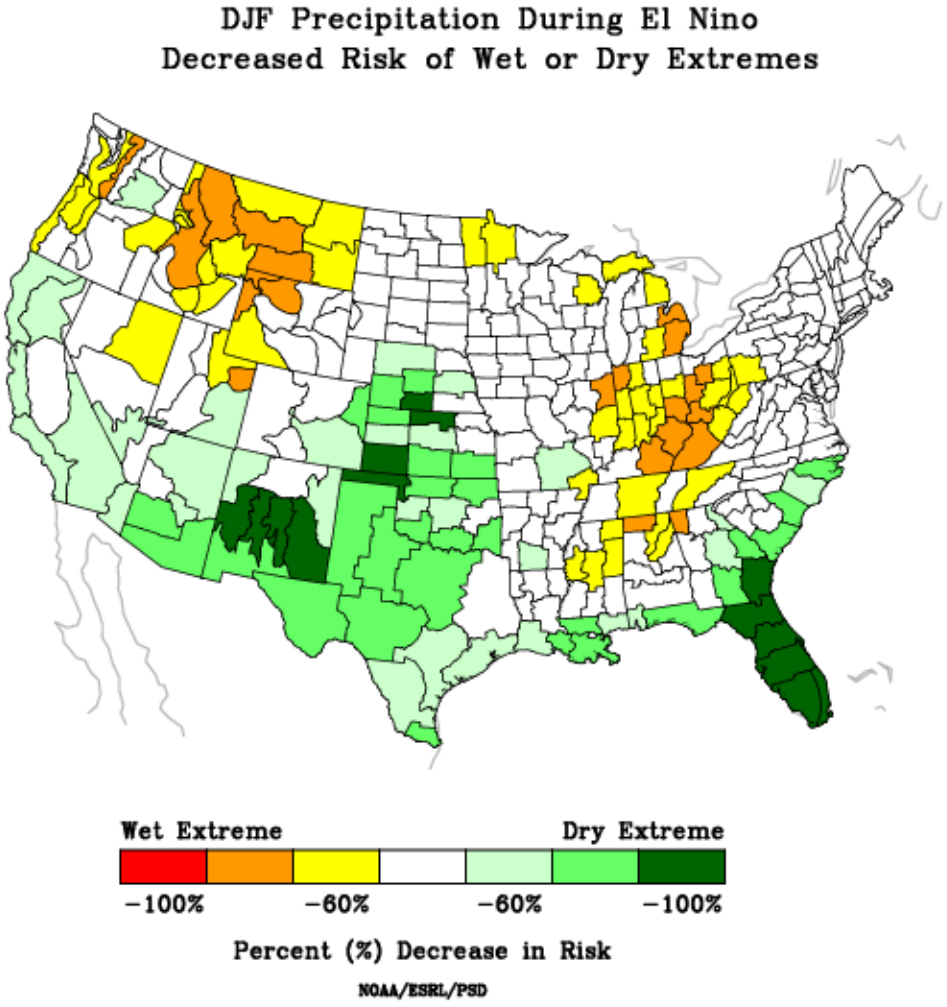


SON Precipitation During El Nino
Decreased Risk of Wet or Dry Extremes



https://www.esrl.noaa.gov/psd/enso/climaterisks/





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Thank you

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