



# 2018 MONSOON SEASON

National Weather Service Tucson, Arizona  
Pima County Local Drought Impact Group Meeting  
September 12, 2018



# Summer 2018

- **7<sup>th</sup> Hottest** & **31<sup>st</sup> Wettest**
- 10<sup>th</sup> straight Summer in top 10 warmest
- 5.88" rainfall at Tucson Airport, normal is 4.84"
- 3<sup>rd</sup> straight Summer with above normal rainfall
- Rainlog & Pima Co. ALERT recorded 3.0" to over 11" in the mountains



Union Pacific train derailment on the east side of I-10 just north of Twin Peaks Road in Marana on July 10, 2018.

Kelly Presnell / Arizona Daily Star

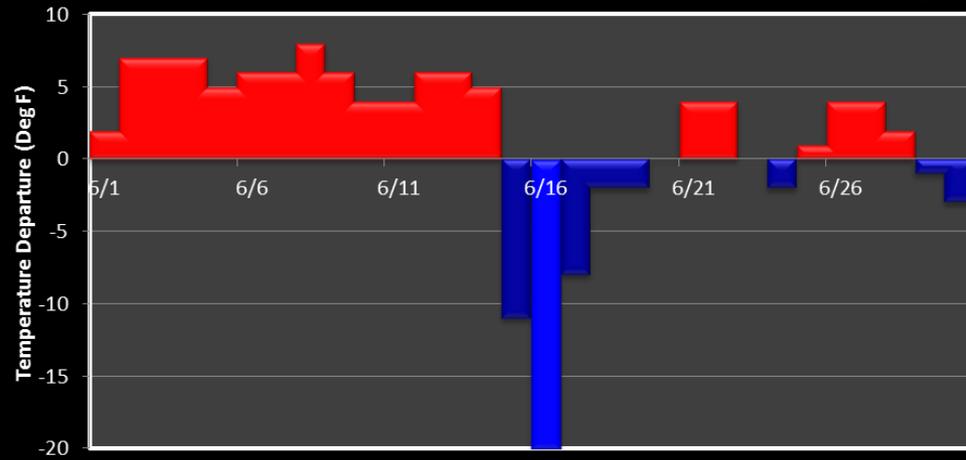
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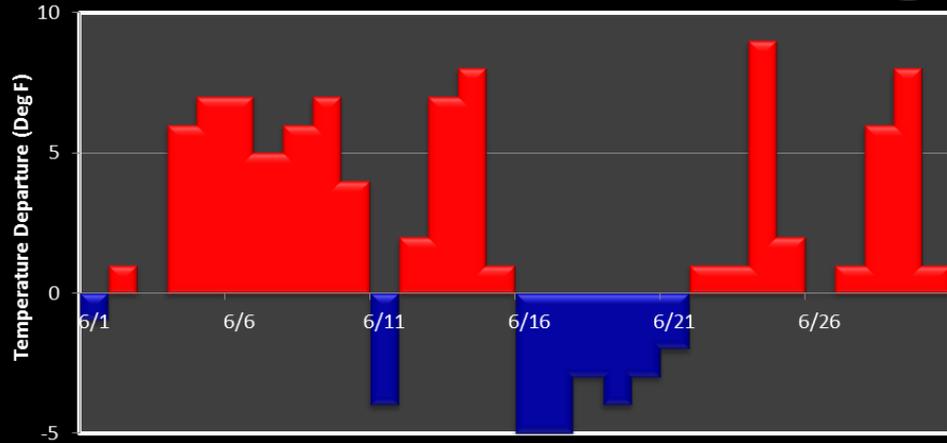
# JUNE

- 14<sup>th</sup> Warmest
- 11<sup>th</sup> Wettest: 0.91" rainfall, normal 0.20"
- Daily rainfall records on June 15 & 16
- Rainlog & Pima ALERT gages recorded 0.5" to over 2"

June 2018 daily high temperature departure from normal for Tucson



June 2018 daily low temperature departure from normal for Tucson





# June Observed Precipitation

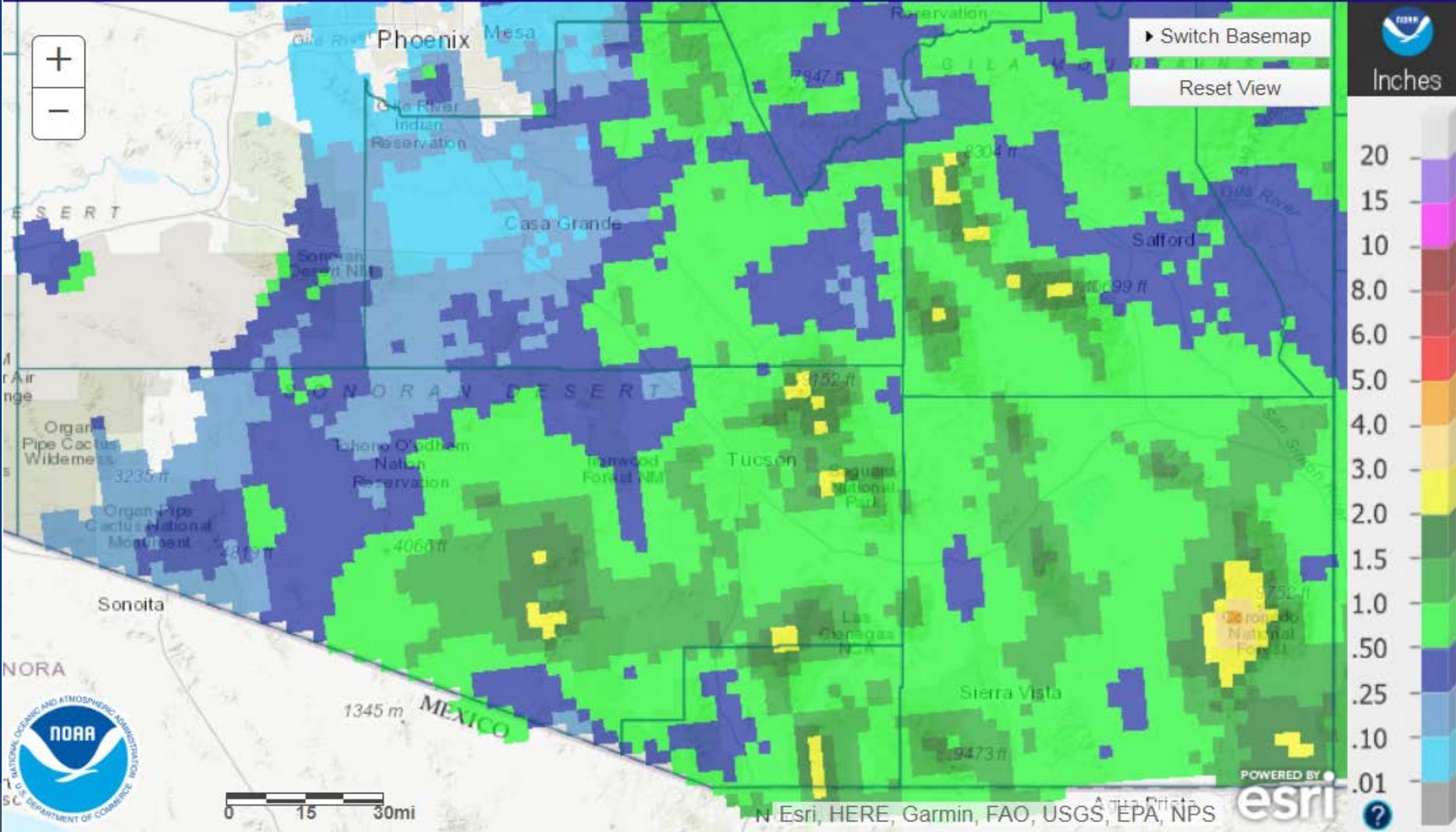


Tucson, AZ: June, 2018 Monthly Observed Precipitation  
Valid on: July 01, 2018 12:00 UTC

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What is UTC time? Map Help

Find address or location





# June Departure from Normal Precipitation

Tucson, AZ: June, 2018 Monthly Departure from Normal Precipitation  
Valid on: July 01, 2018 12:00 UTC

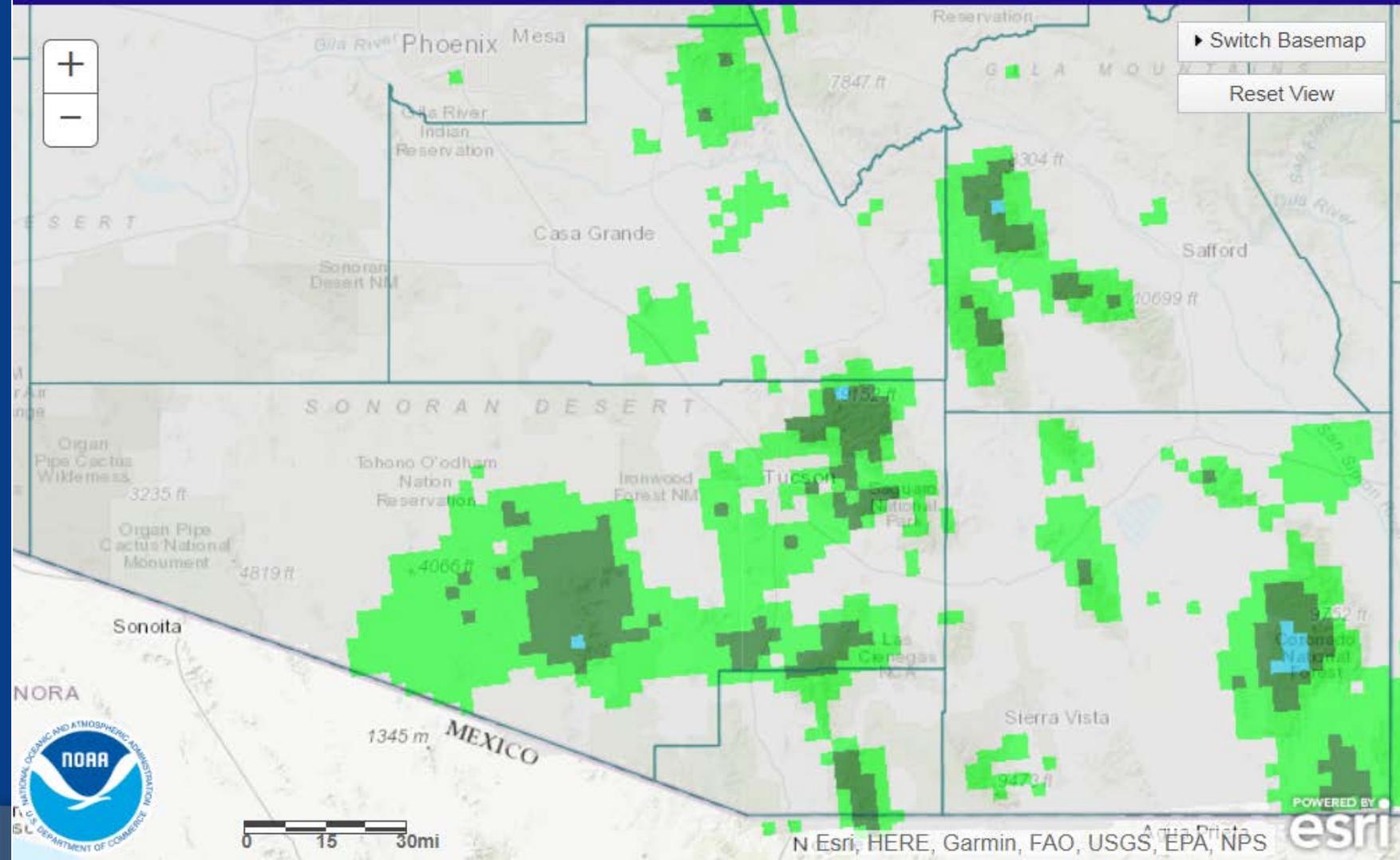
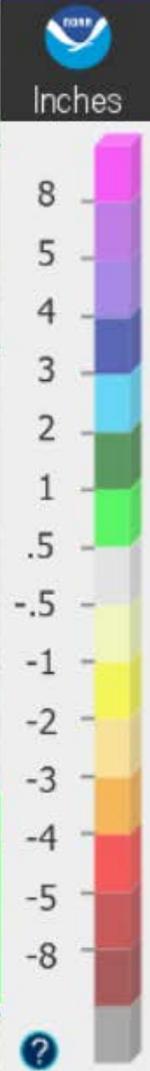
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Reset View



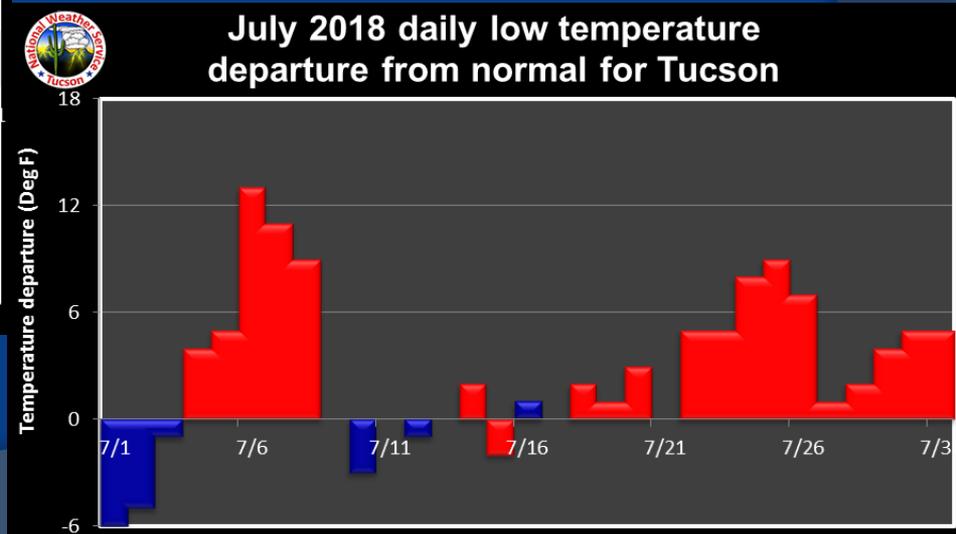
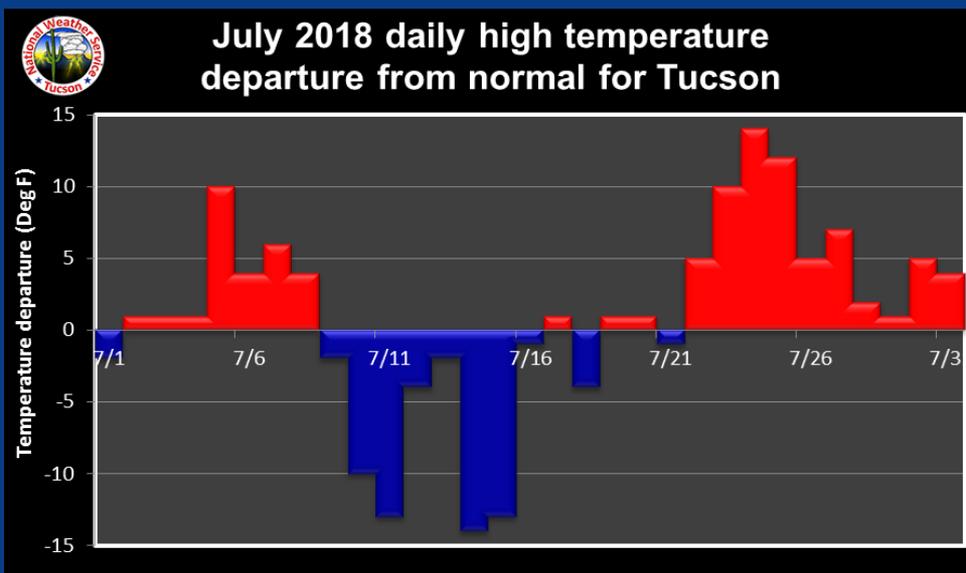
Powered by Esri, HERE, Garmin, FAO, USGS, EPA, NPS



# JULY



- 8<sup>th</sup> Warmest: 10 daily record temps set or tied
- 51<sup>st</sup> Wettest: 2.26" rainfall at Tucson Airport, normal is 2.25"
- Rainlog & Pima ALERT gages recorded 0.25" to over 5.0"





# July Observed Precipitation



Tucson, AZ: July, 2018 Monthly Observed Precipitation  
Valid on: August 01, 2018 12:00 UTC



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Permalink

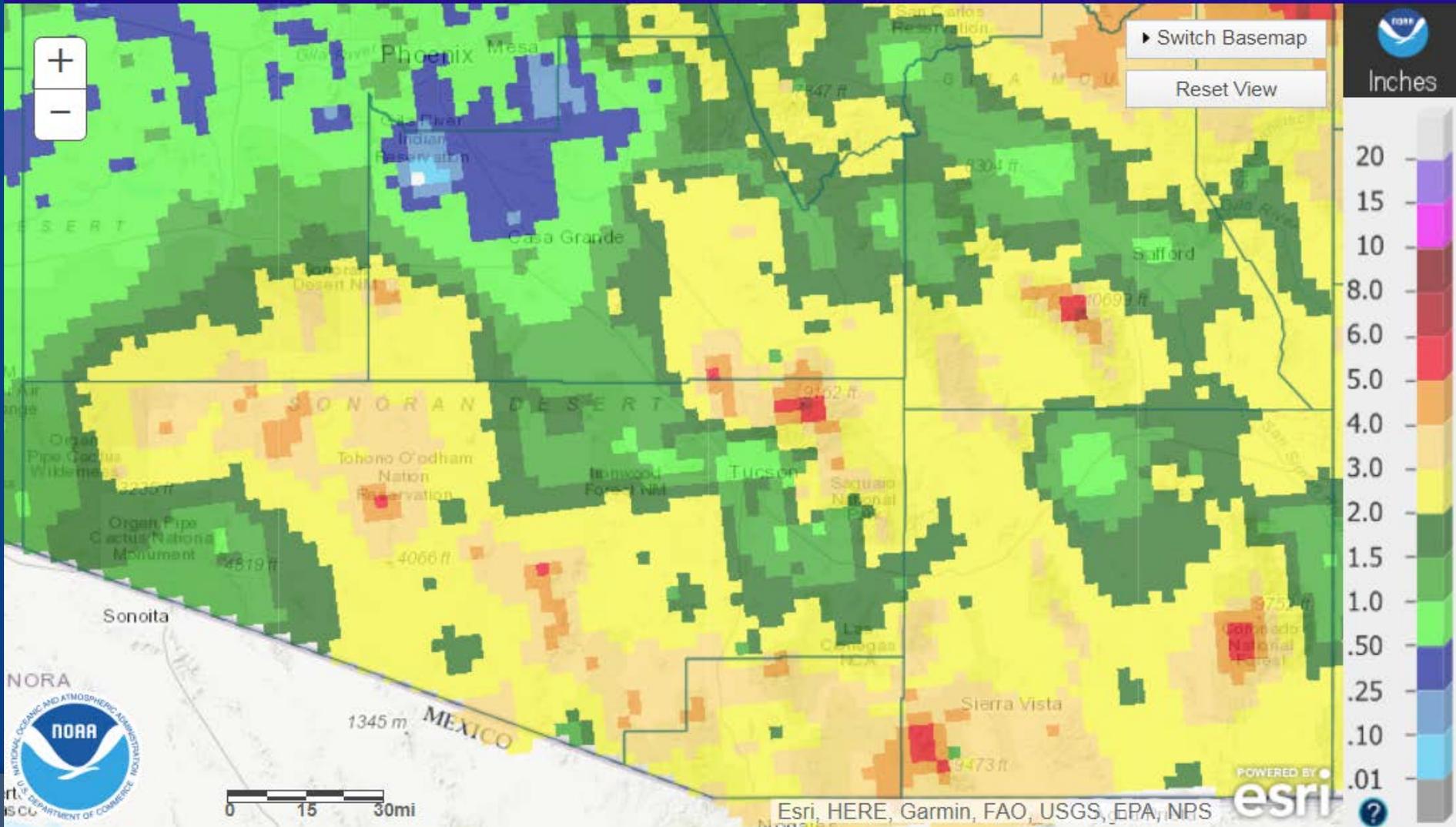
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# July Departure from Normal Precipitation



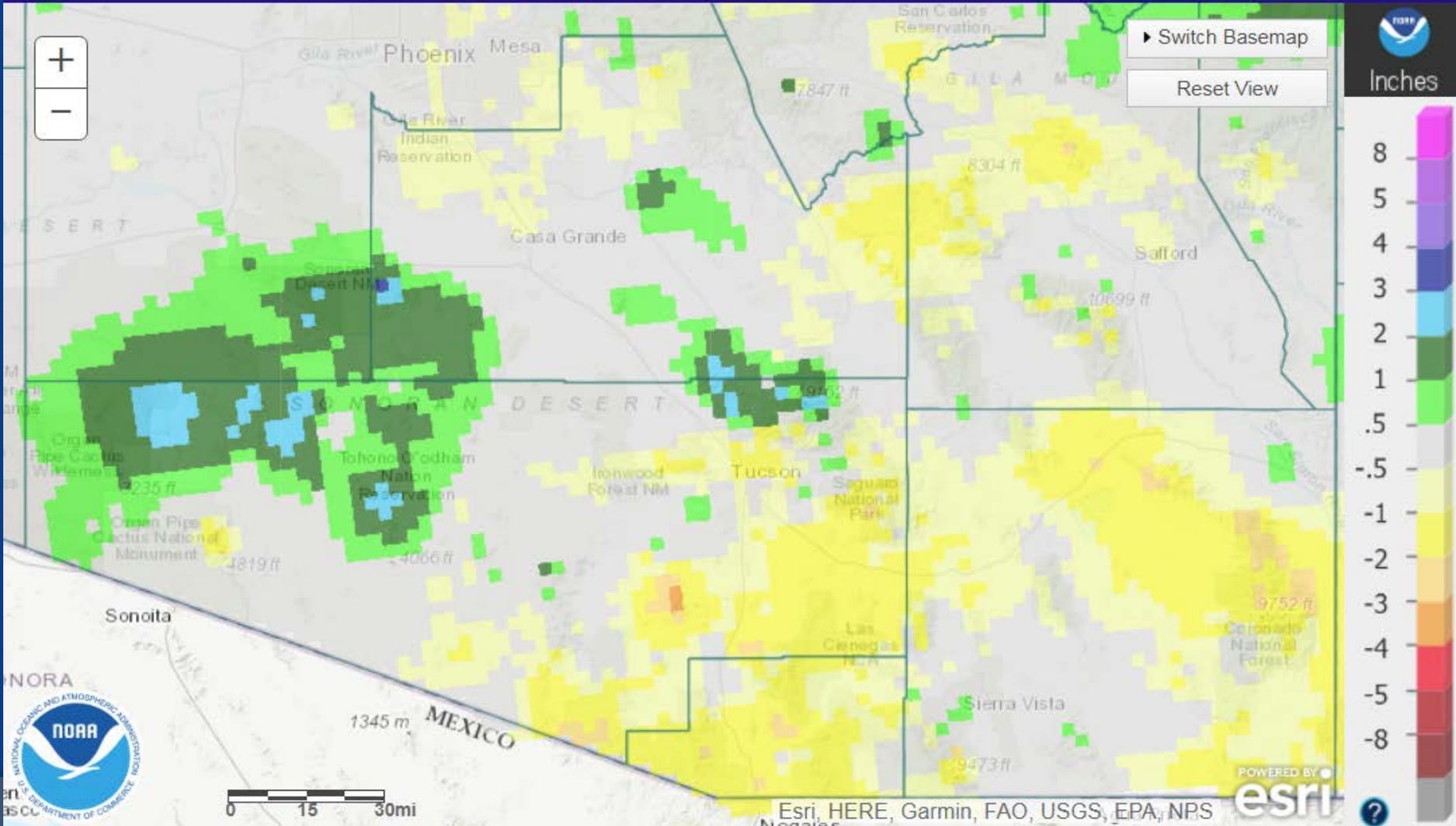
Tucson, AZ: July, 2018 Monthly Departure from Normal Precipitation  
Valid on: August 01, 2018 12:00 UTC

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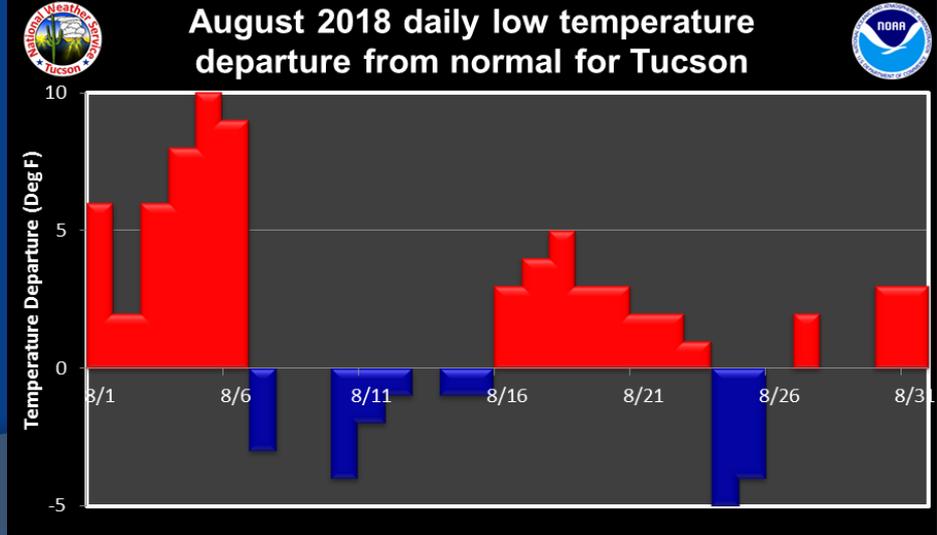
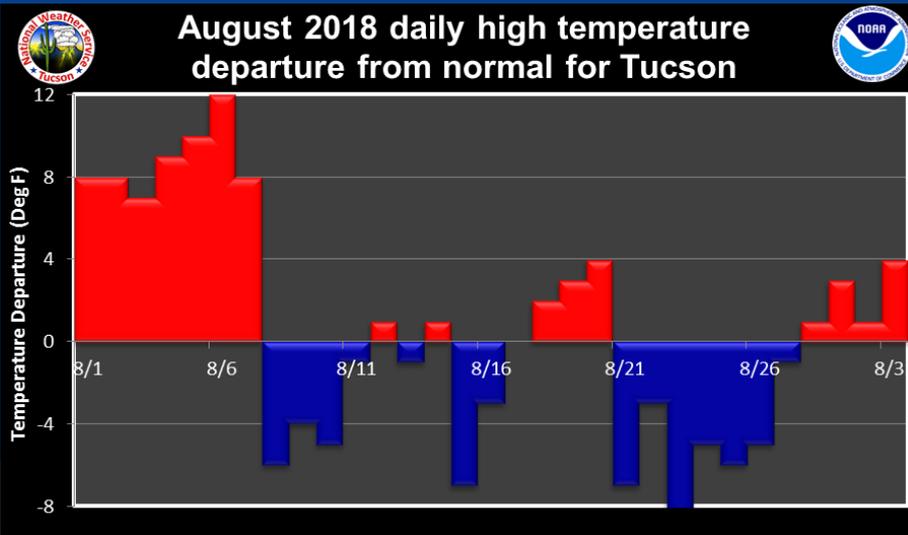




# AUGUST



- 35<sup>th</sup> Wettest & 15<sup>th</sup> Warmest
- 2.71" rainfall at Tucson Airport, normal is 2.39"
- 1<sup>st</sup> August since 2006 with above normal rainfall at Tucson Airport
- Rainlog & Pima ALERT gages recorded 0.75" to over 4"
- 23<sup>rd</sup> straight month with average monthly temp above normal
- Tucson Airport Rainfall through August  
Calendar Year = 7.86" (7.91" Normal)  
Water Year = 8.45" (10.30" Normal)





# August Observed Precipitation

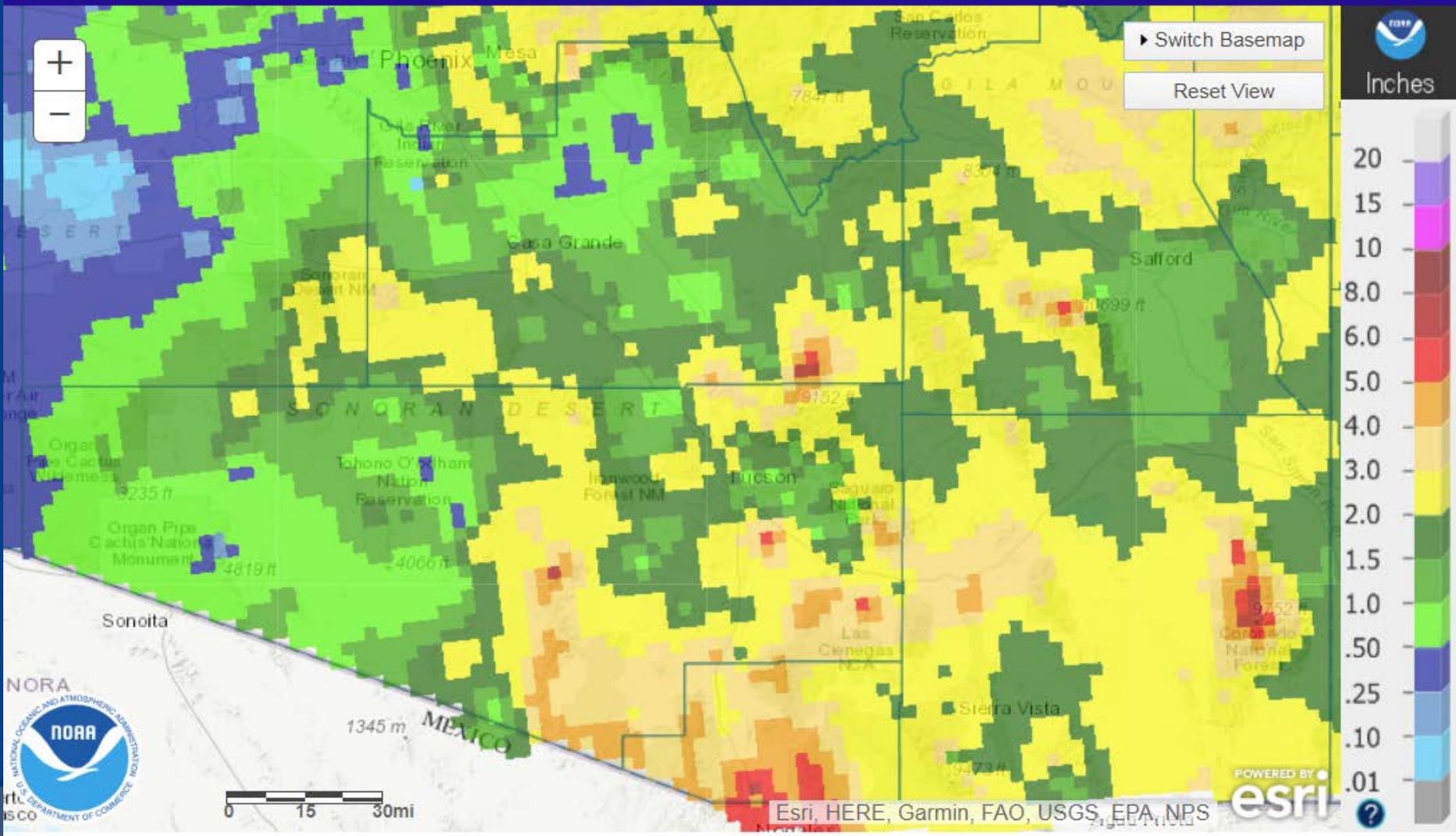


Tucson, AZ: August, 2018 Monthly Observed Precipitation  
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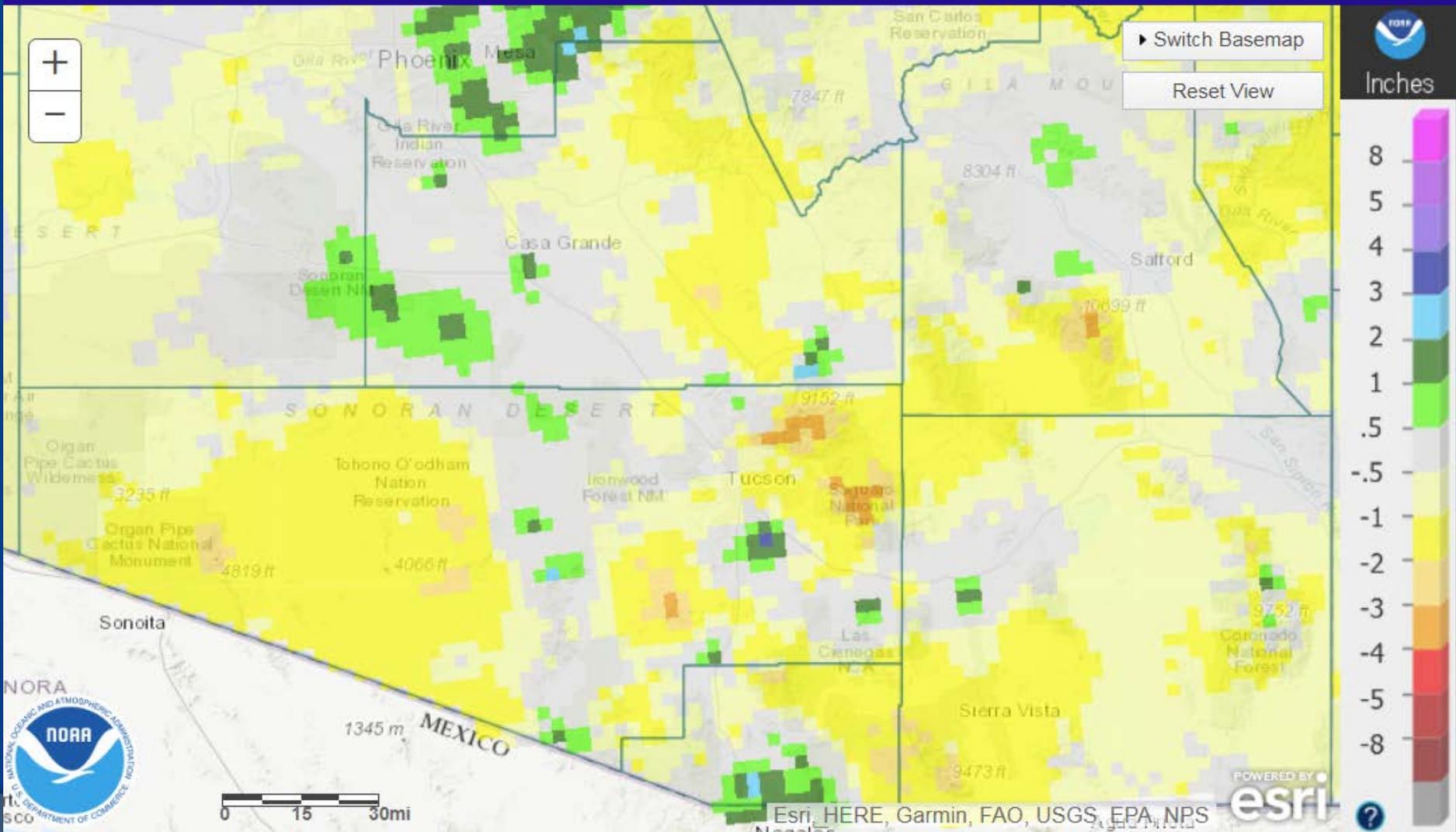




# August Departure from Normal Precipitation

Tucson, AZ: August, 2018 Monthly Departure from Normal Precipitation  
Valid on: September 01, 2018 12:00 UTC

Print this map



Esri, HERE, Garmin, FAO, USGS, EPA, NPS

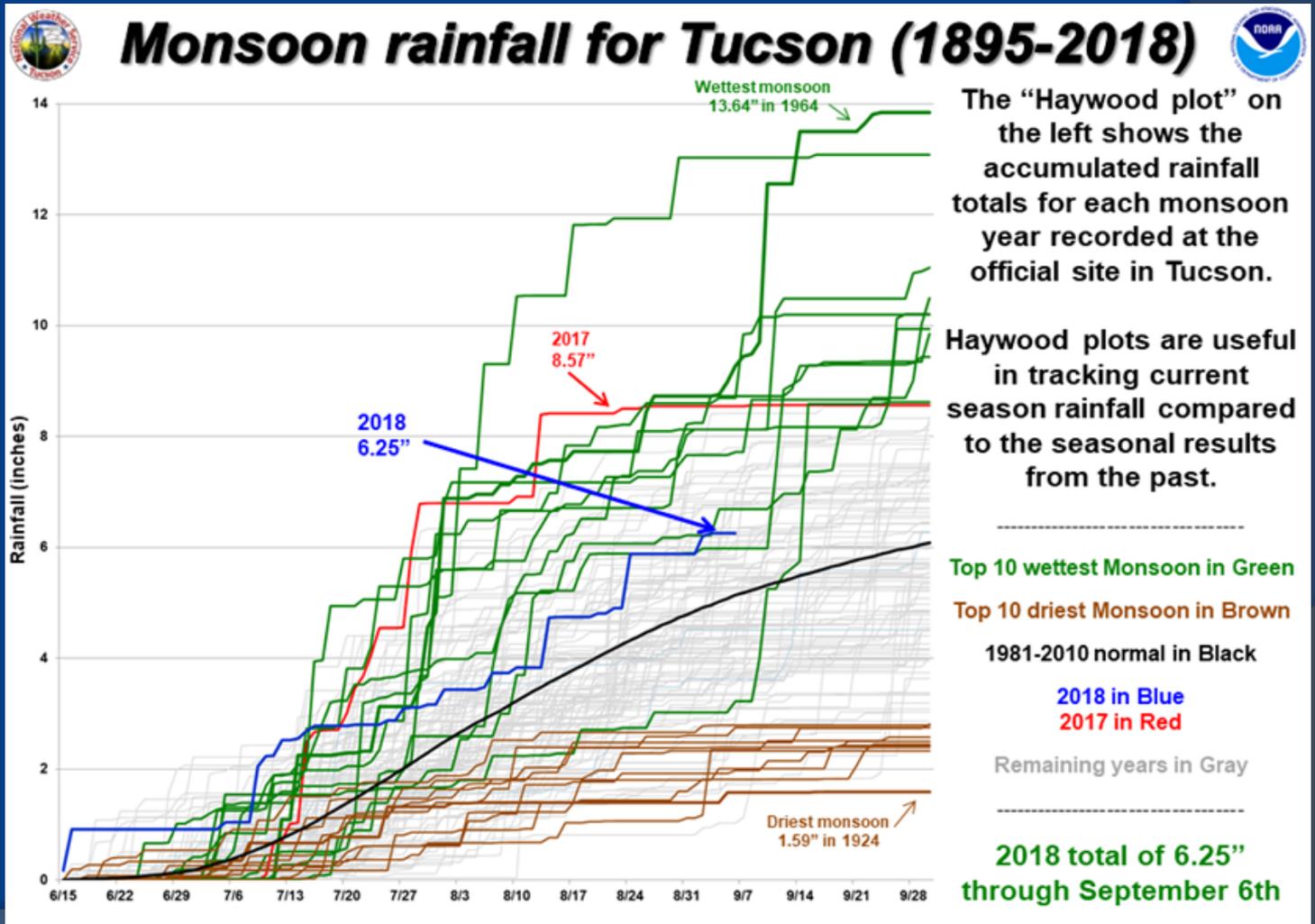




# Monsoon Season through early September

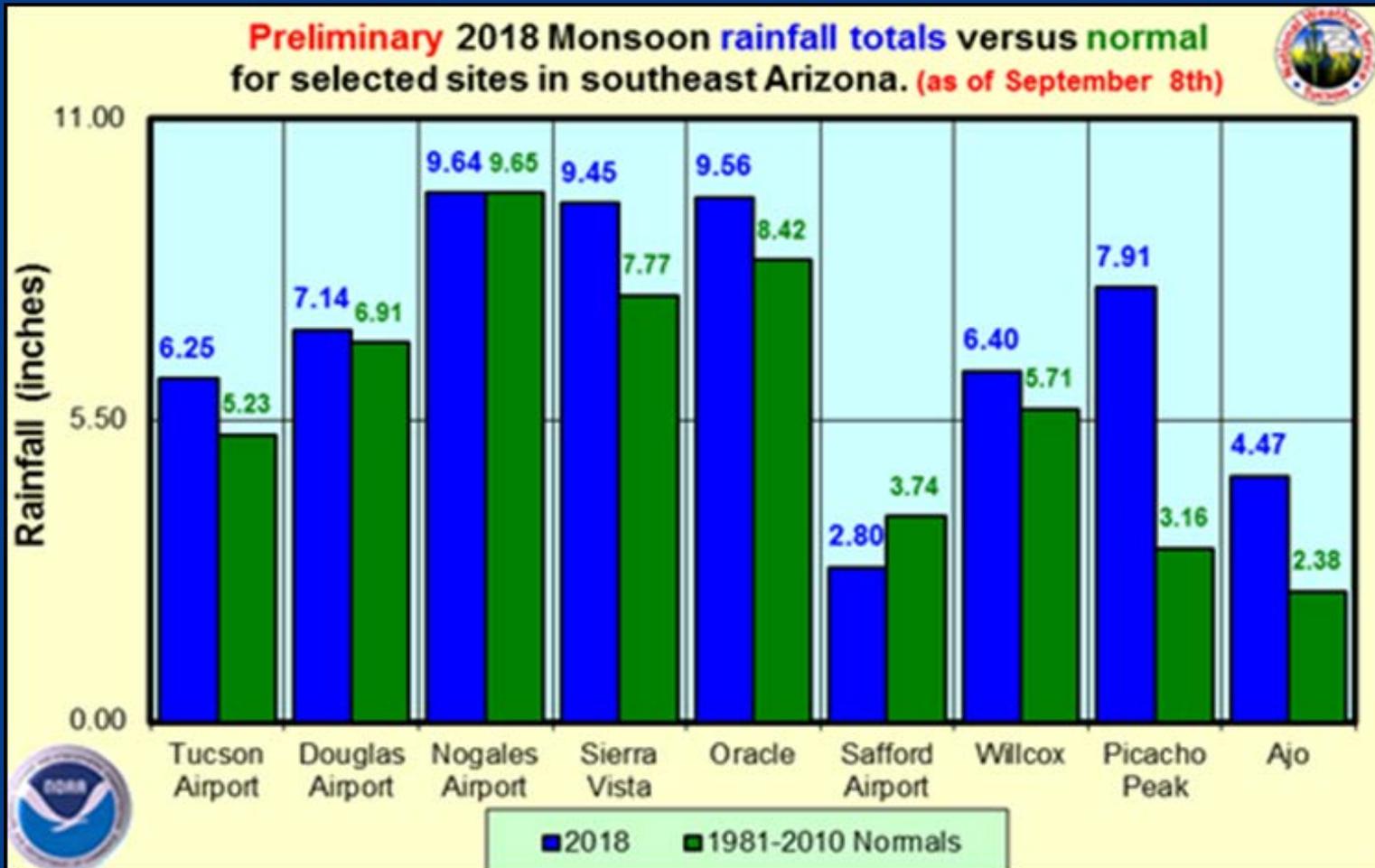


- As of Sept 10<sup>th</sup> 0.37" rain at Tucson Airport, monthly normal is 1.29"





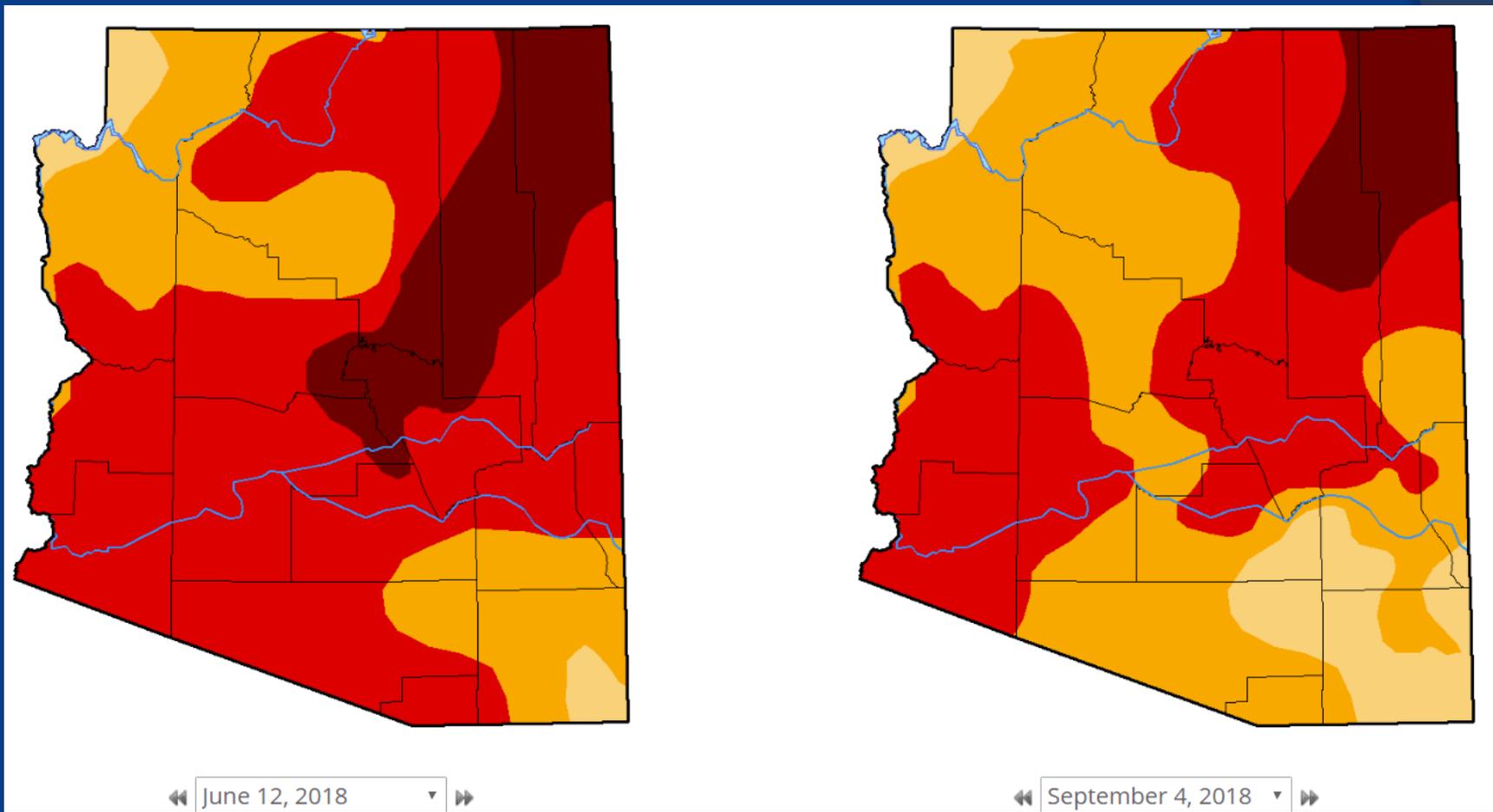
# Monsoon Season through early September





# Change in Drought Conditions

Week	None	D0-D4	D1-D4	D2-D4	D3-D4	D4	DSCI
2018-06-12	0.00	100.00	100.00	97.05	73.62	15.71	386
2018-09-04	0.00	100.00	100.00	89.67	48.23	8.62	347
Change	0.00	0.00	0.00	-7.38	-25.39	-7.09	-39



June 12, 2018

September 4, 2018

**Drought Classification**

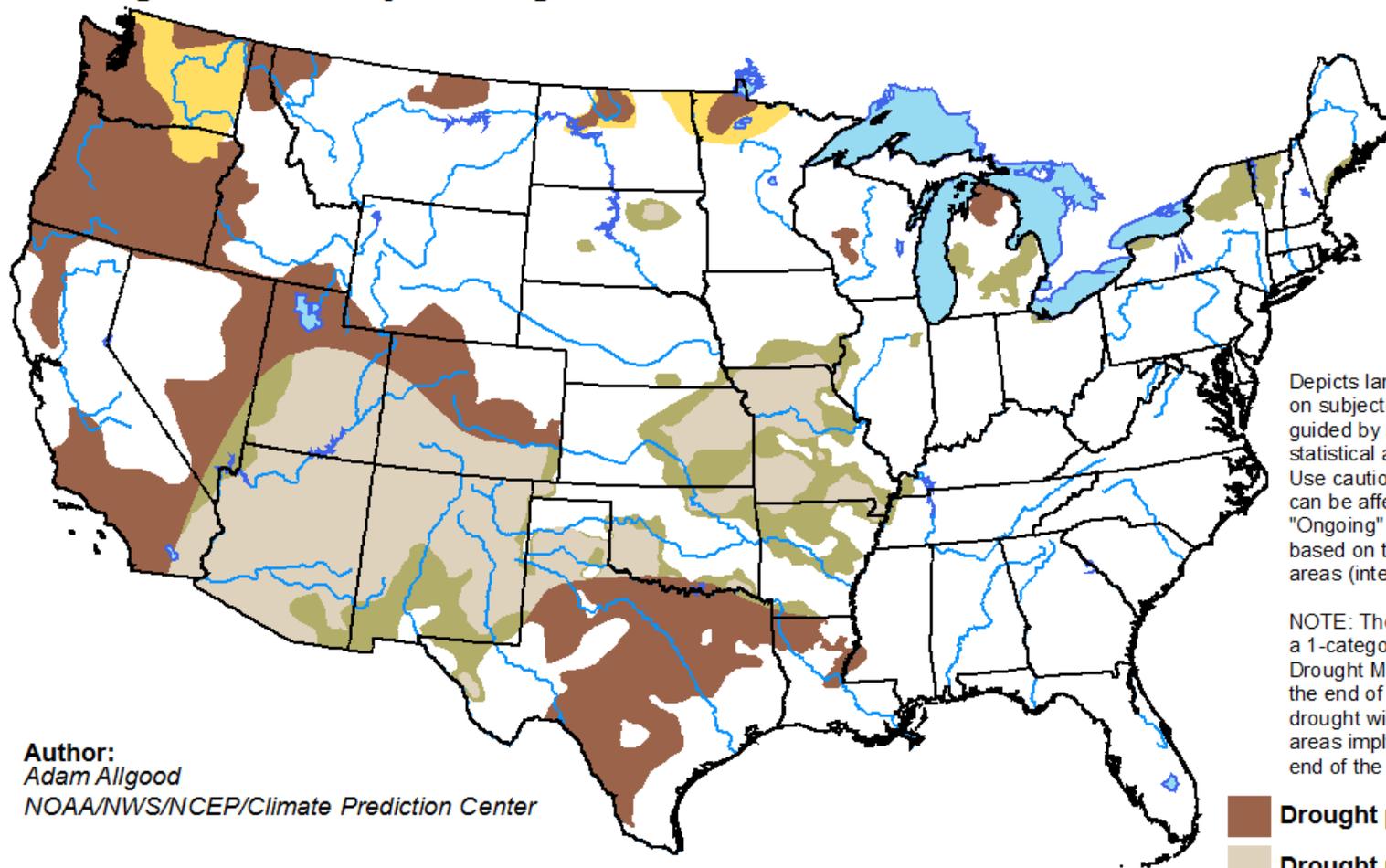
None   D0 (Abnormally Dry)   D1 (Moderate Drought)   D2 (Severe Drought)   D3 (Extreme Drought)   D4 (Exceptional)

# U.S. Seasonal Drought Outlook

## Drought Tendency During the Valid Period

Valid for August 16 - November 30, 2018

Released August 16, 2018

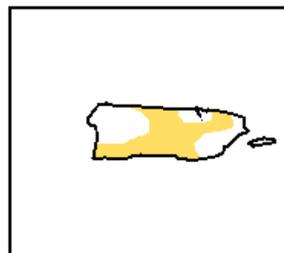
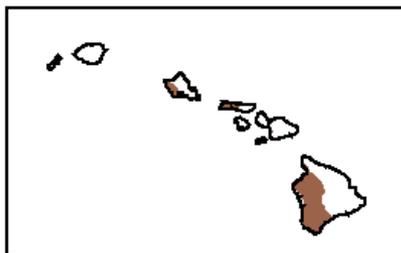
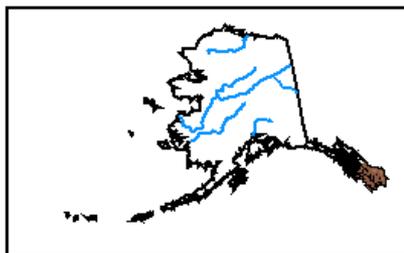


Depicts large-scale trends based on subjectively derived probabilities guided by short- and long-range statistical and dynamical forecasts. Use caution for applications that can be affected by short lived events. "Ongoing" drought areas are based on the U.S. Drought Monitor areas (intensities of D1 to D4).

NOTE: The tan areas imply at least a 1-category improvement in the Drought Monitor intensity levels by the end of the period, although drought will remain. The green areas imply drought removal by the end of the period (D0 or none).

Author:  
Adam Allgood  
NOAA/NWS/NCEP/Climate Prediction Center

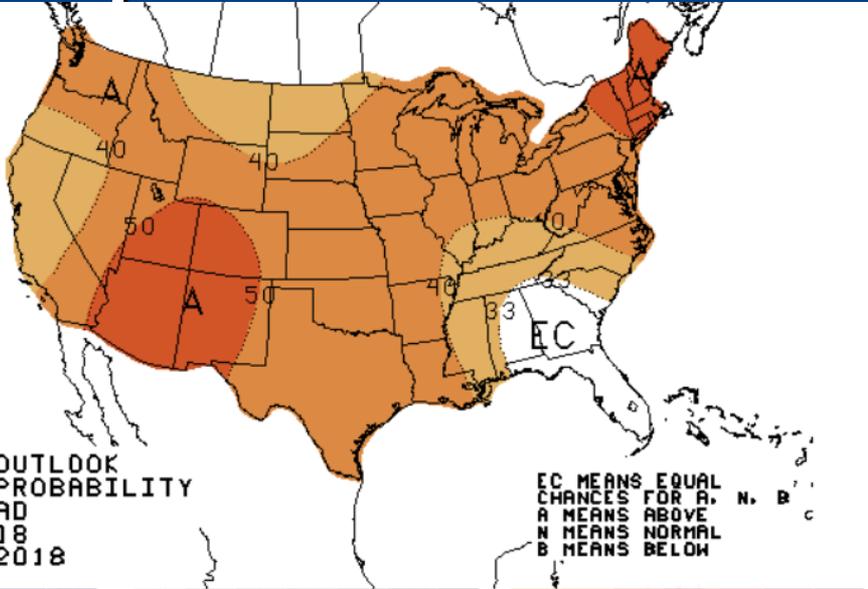
-  Drought persists
-  Drought remains but improves
-  Drought removal likely
-  Drought development likely



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

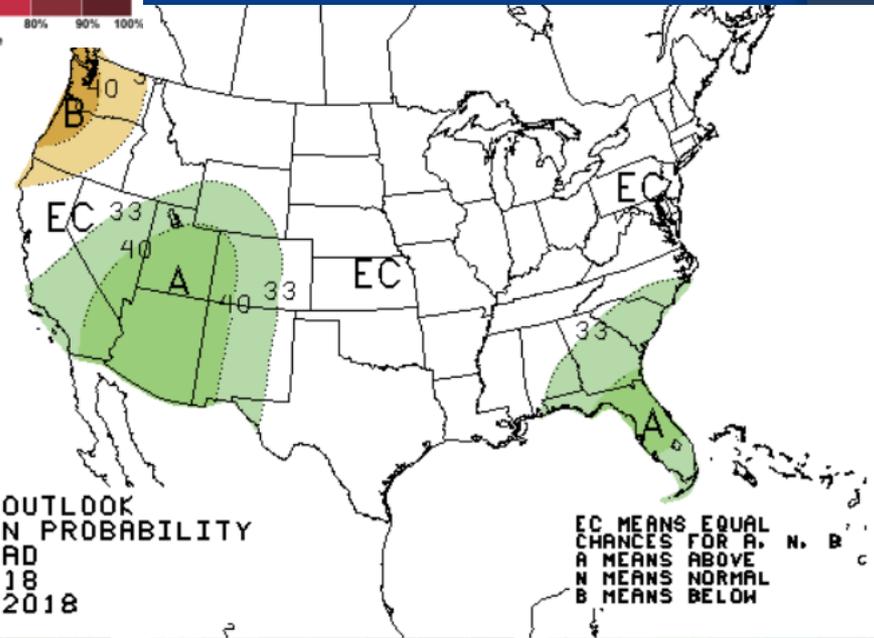
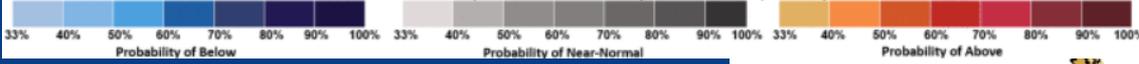


# September - November Outlook



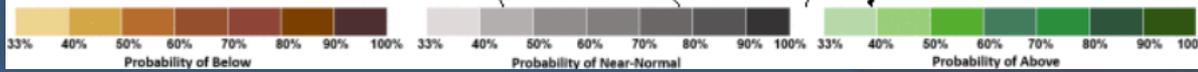
THREE-MONTH OUTLOOK  
TEMPERATURE PROBABILITY  
0.5 MONTH LEAD  
VALID SON 2018  
MADE 16 AUG 2018

EC MEANS EQUAL  
CHANCES FOR A, N, B  
A MEANS ABOVE  
N MEANS NORMAL  
B MEANS BELOW



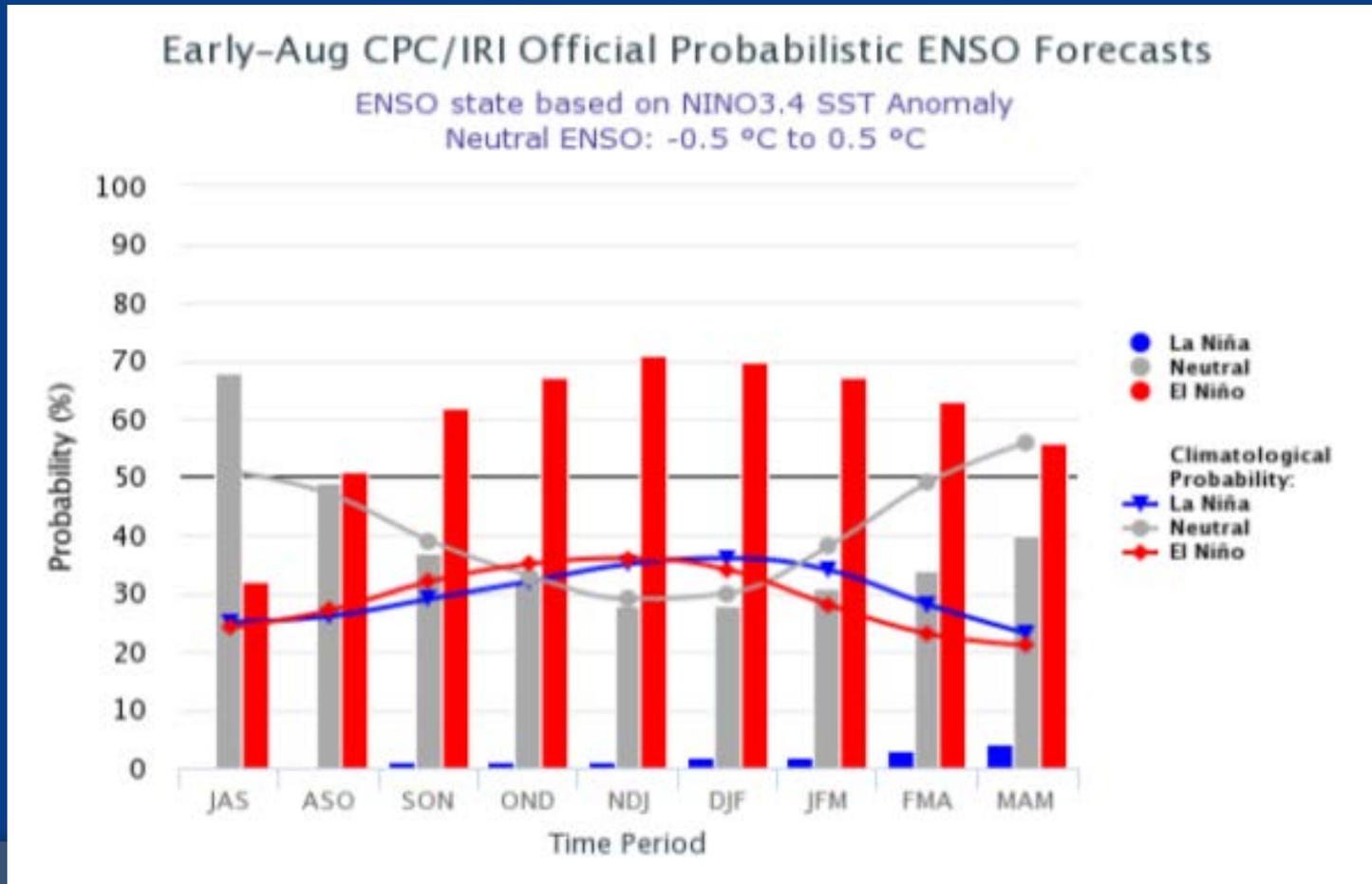
THREE-MONTH OUTLOOK  
PRECIPITATION PROBABILITY  
0.5 MONTH LEAD  
VALID SON 2018  
MADE 16 AUG 2018

EC MEANS EQUAL  
CHANCES FOR A, N, B  
A MEANS ABOVE  
N MEANS NORMAL  
B MEANS BELOW



# El Nino

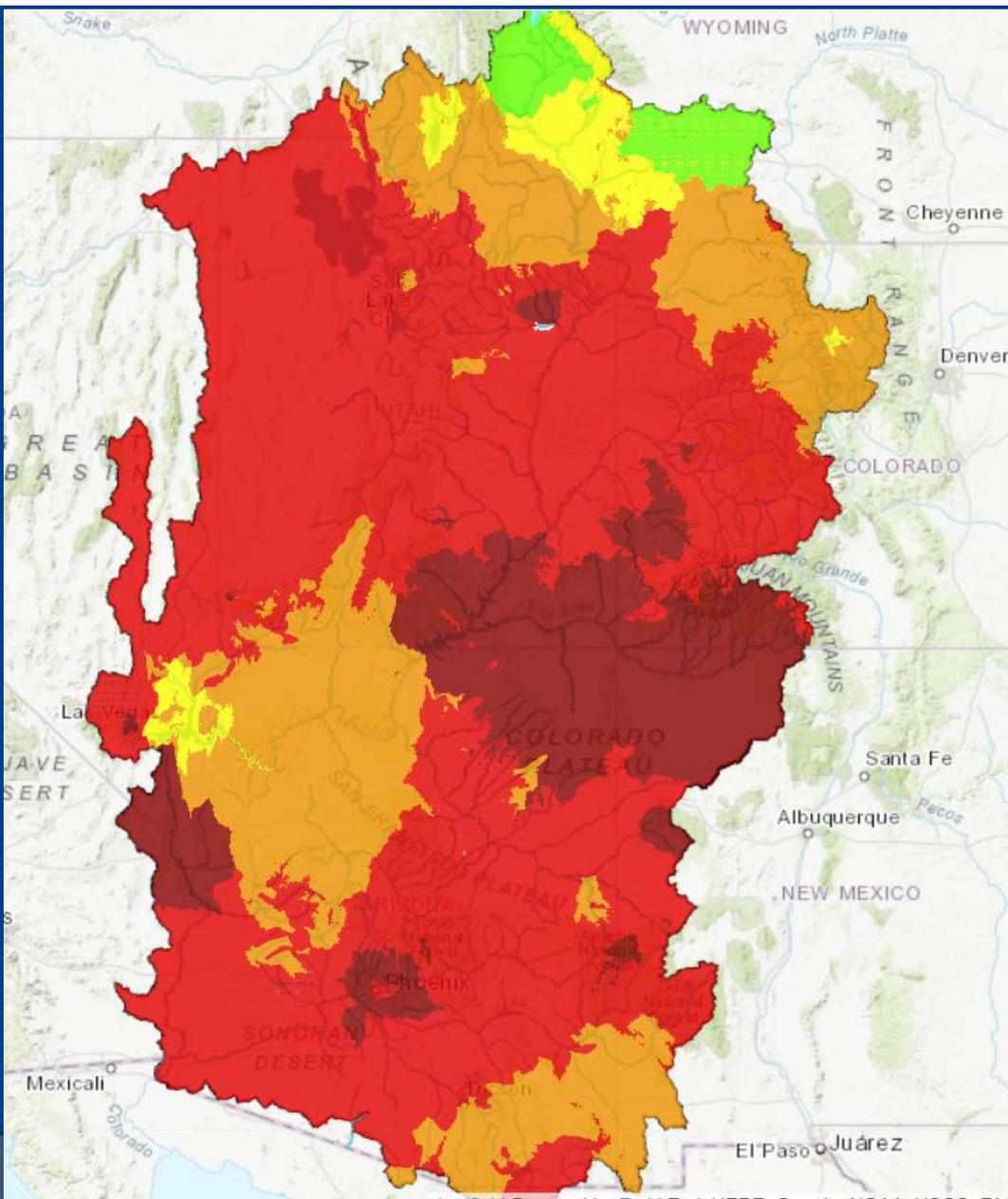
- ~60% chance of El Niño in the Northern Hemisphere fall 2018 (September-November), increasing to ~70% during winter 2018-19.





# COLORADO BASIN RIVER FORECAST CENTER

NATIONAL WEATHER SERVICE / NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION



**Precipitation**

Show

October - August 2018 (Water Year)  
 August 2018 (Monthly)  
 September 1 - 10 2018 12z (Month to Date)

**% Average**

- >500%
- 300-500%
- 200-300%
- 150-200%
- 130-150%
- 110-130%
- 100-110%
- 90-100%
- 70-90%
- 50-70%
- 30-50%
- 0-30%



## CBRFC Stakeholder Engagement Meeting

- November 15, 2018
- Salt River Project Office in Tempe, AZ
- 10 AM - 4 PM
- Focus on the Lower Colorado River Basin
- RSVP:  
<https://goo.gl/forms/JmstzhRg98mNMhej1>