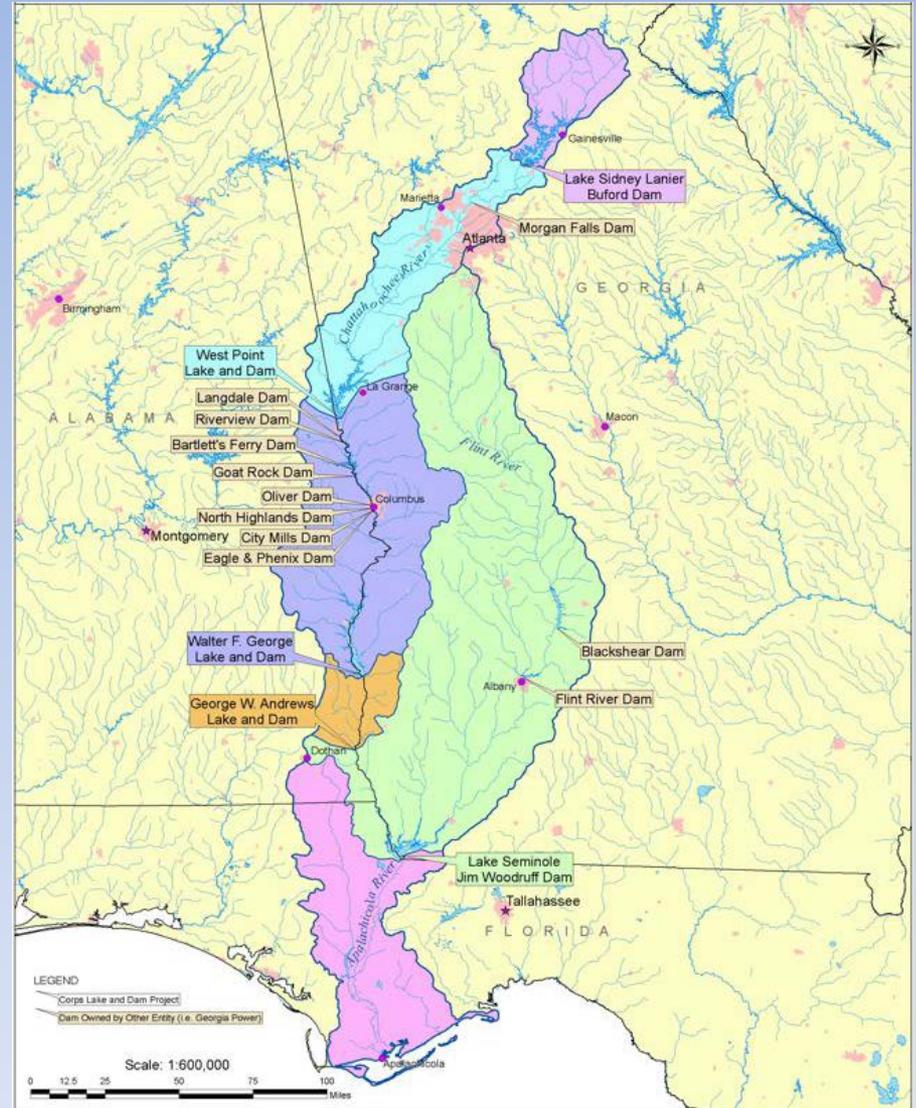
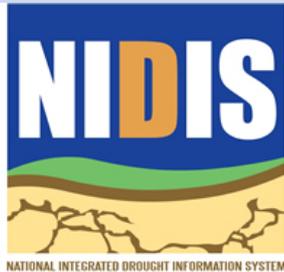


National Integrated Drought Information System

Drought Early Warning for the Apalachicola-Chattahoochee-Flint River Basin

27 October 2015



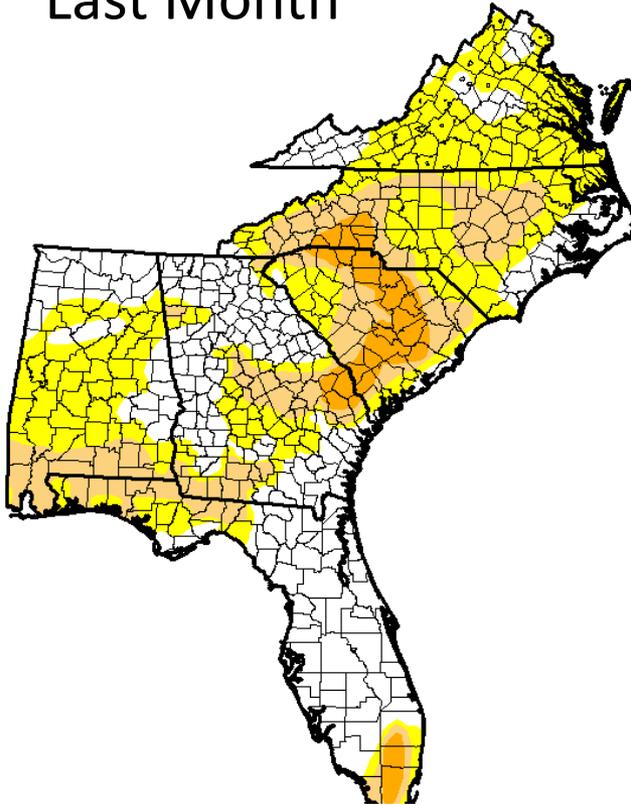
Outline

Welcome – Eric Reutebuch, AU Water Resources Center

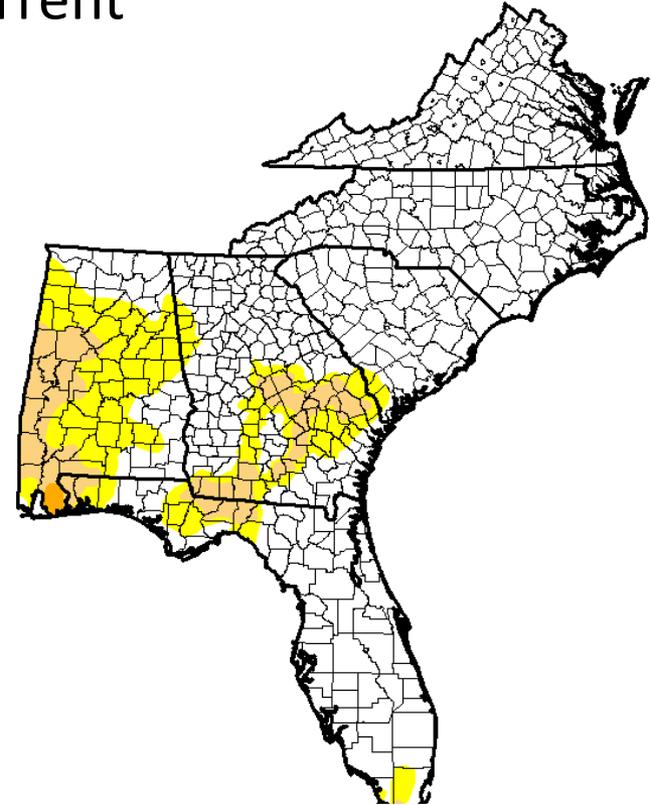
- Current drought status, seasonal forecasts and outlooks – David Zierden, Florida Climate Center, FSU
- Streamflows and groundwater – Paul Ankorn, USGS
- Streamflow forecasts – Jeff Dobur, SERFC
- Summary and Discussion

Current drought status

Last Month



Current



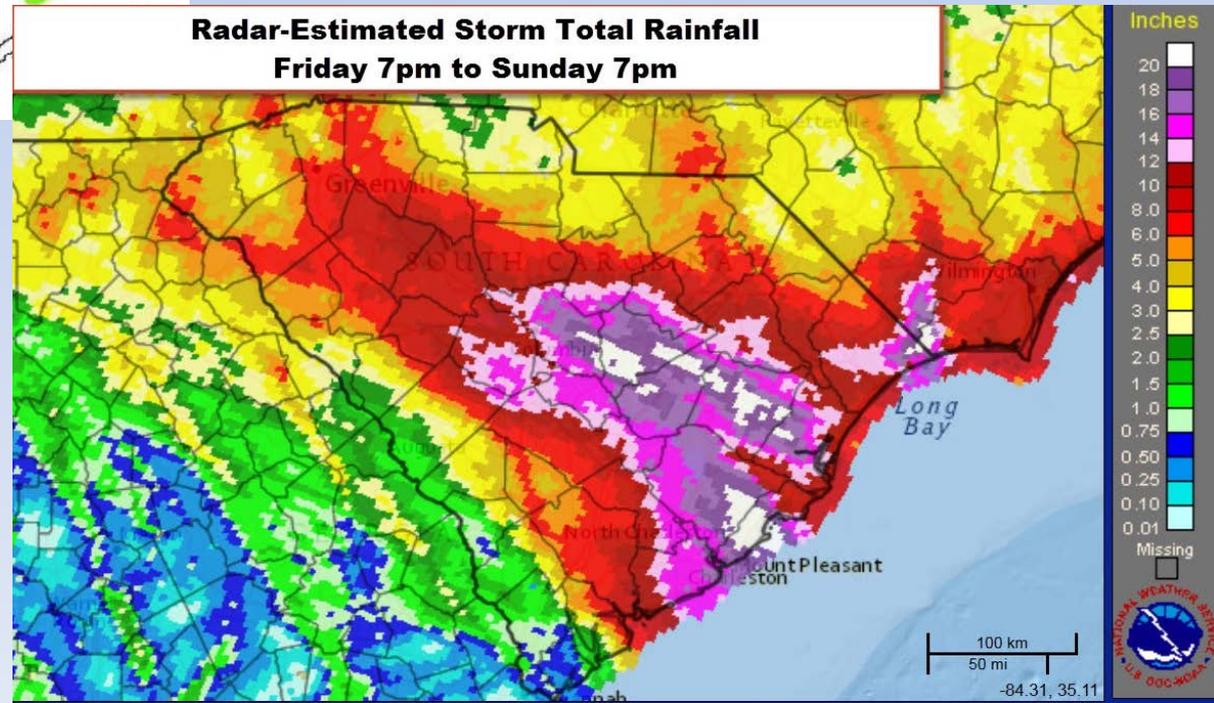
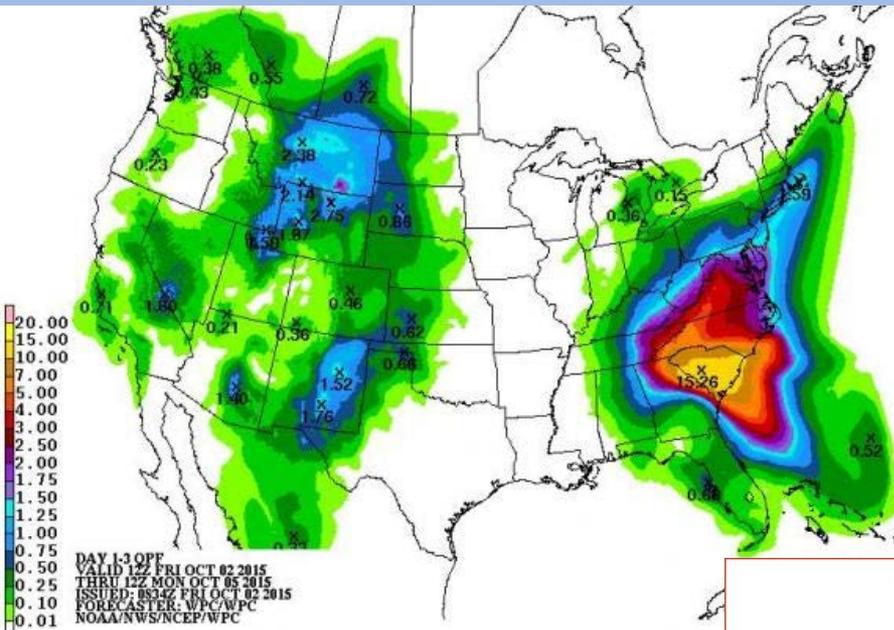
Intensity:

-  D0 - Abnormally Dry
-  D1 - Moderate Drought
-  D2 - Severe Drought

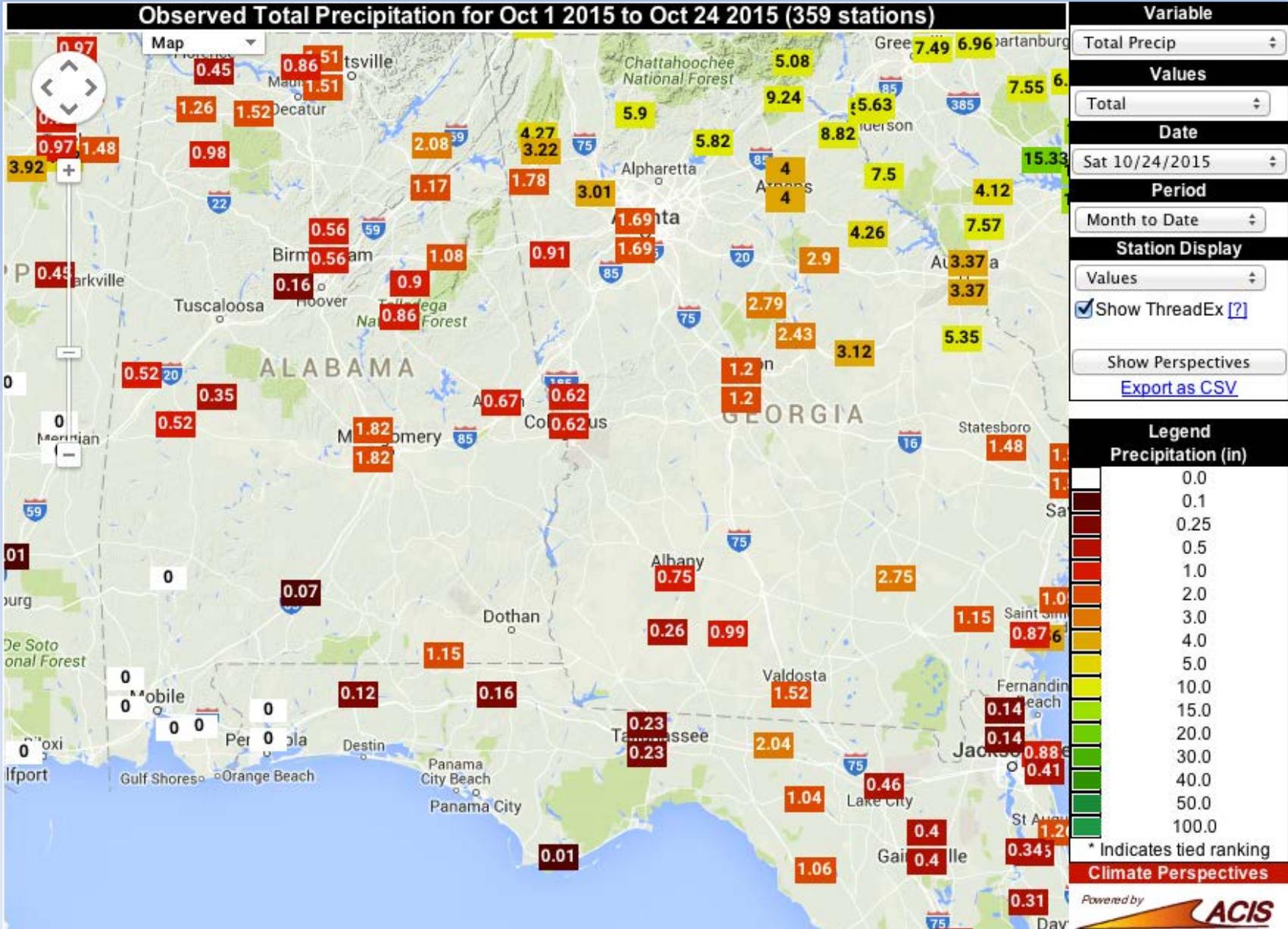
-  D3 - Extreme Drought
-  D4 - Exceptional Drought

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

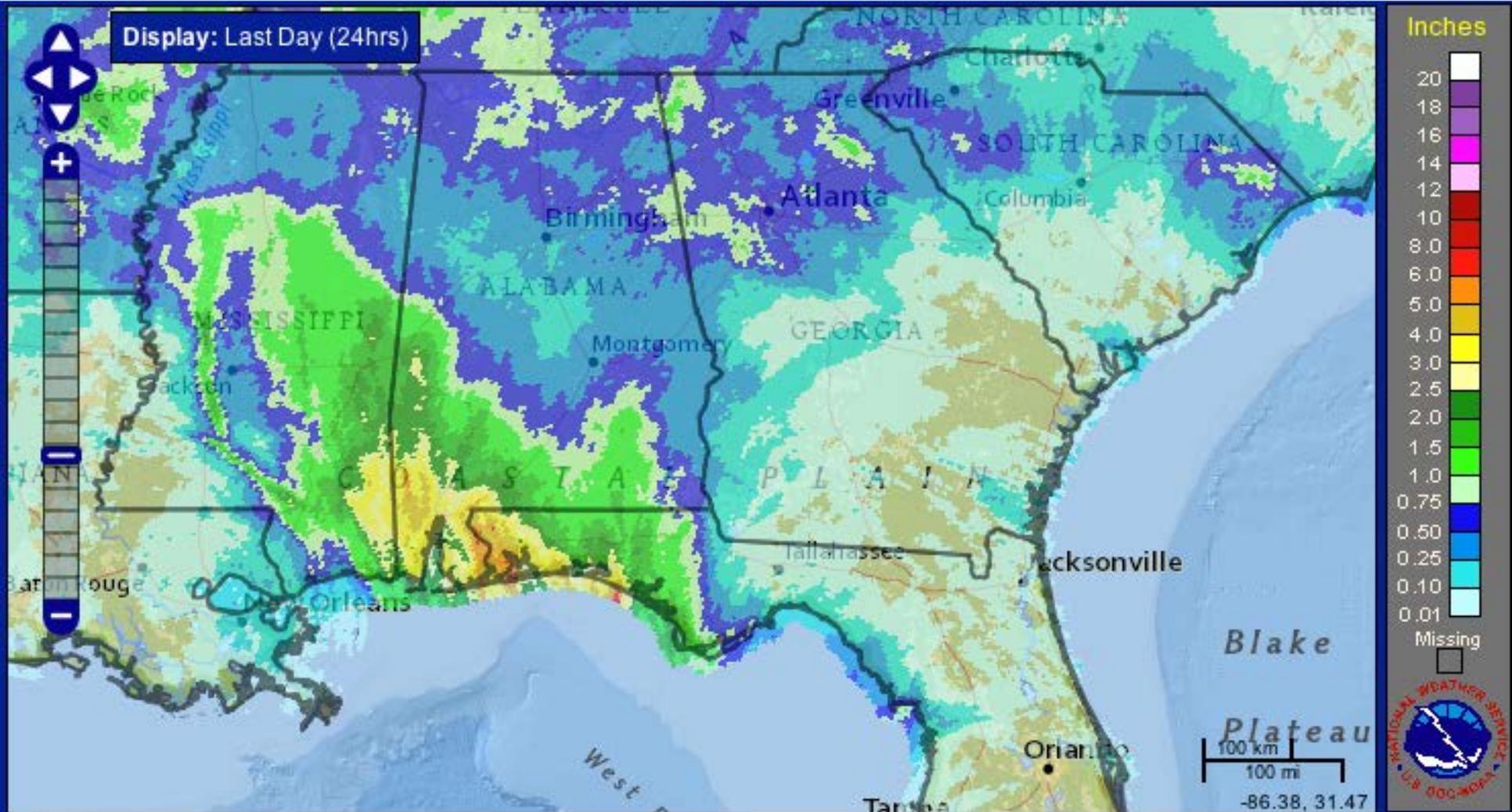
South Carolina Rainfall Forecast



Dry for Most of October

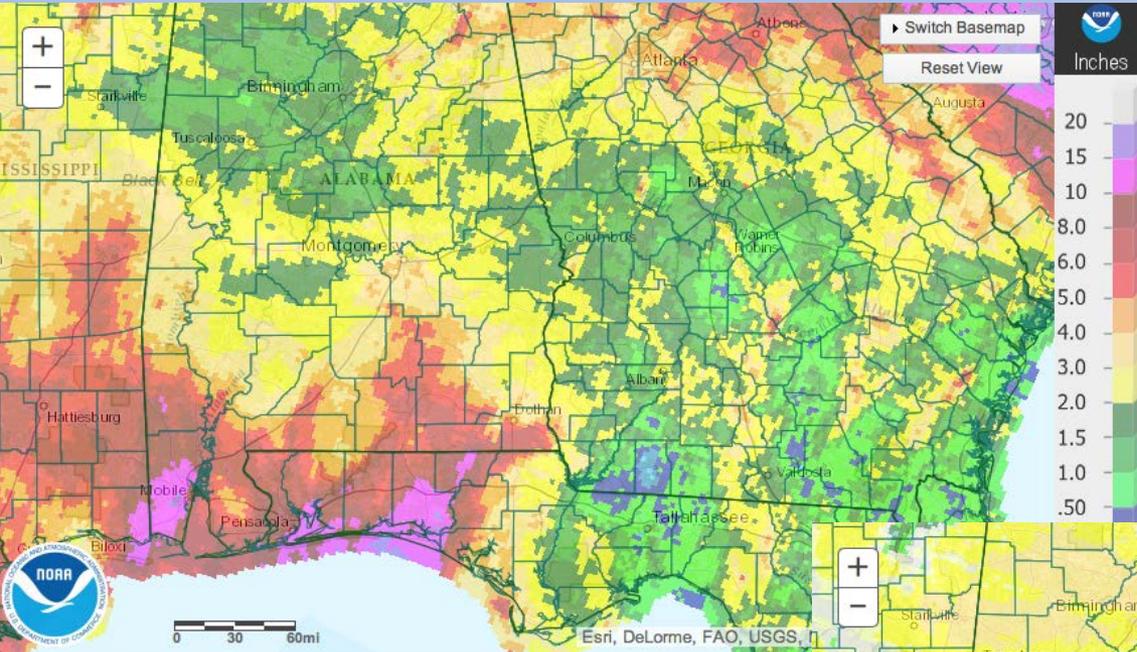


Rainfall – Last 7 Days

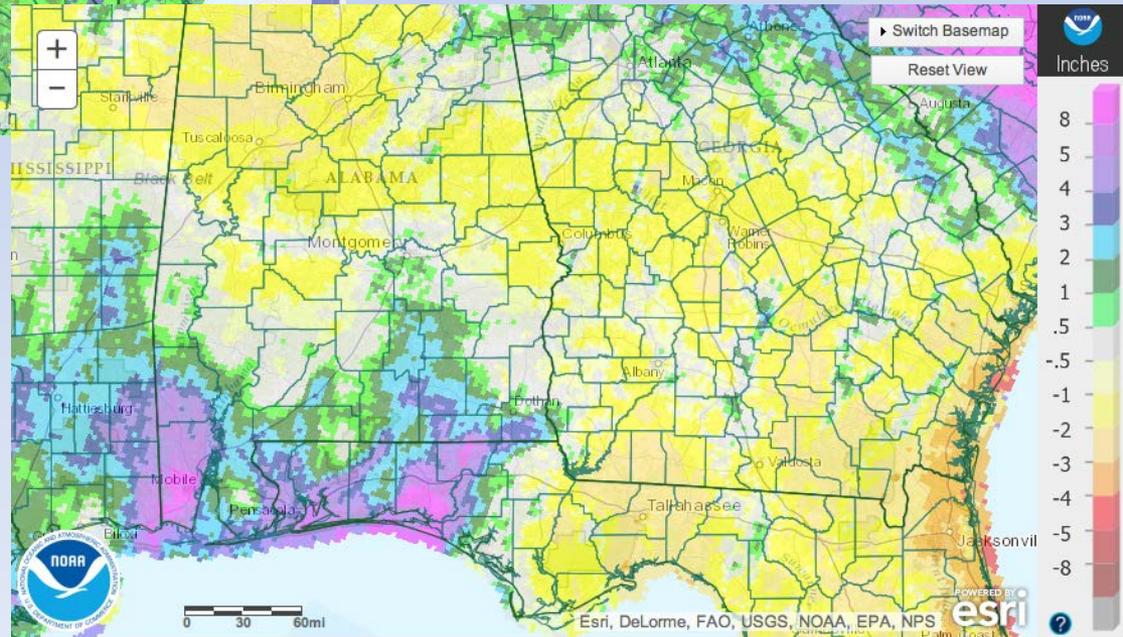


30-Day Rainfall

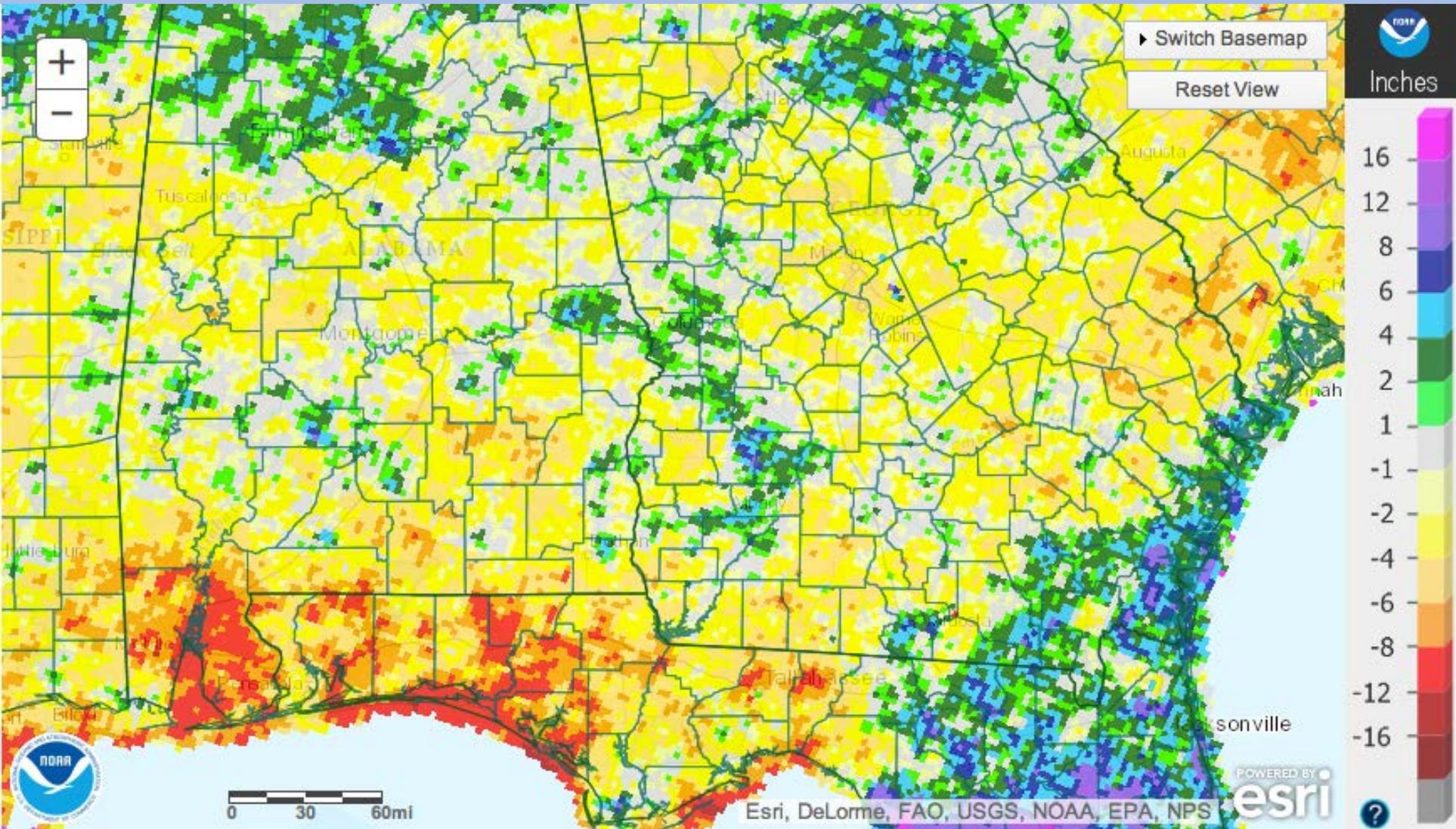
Totals



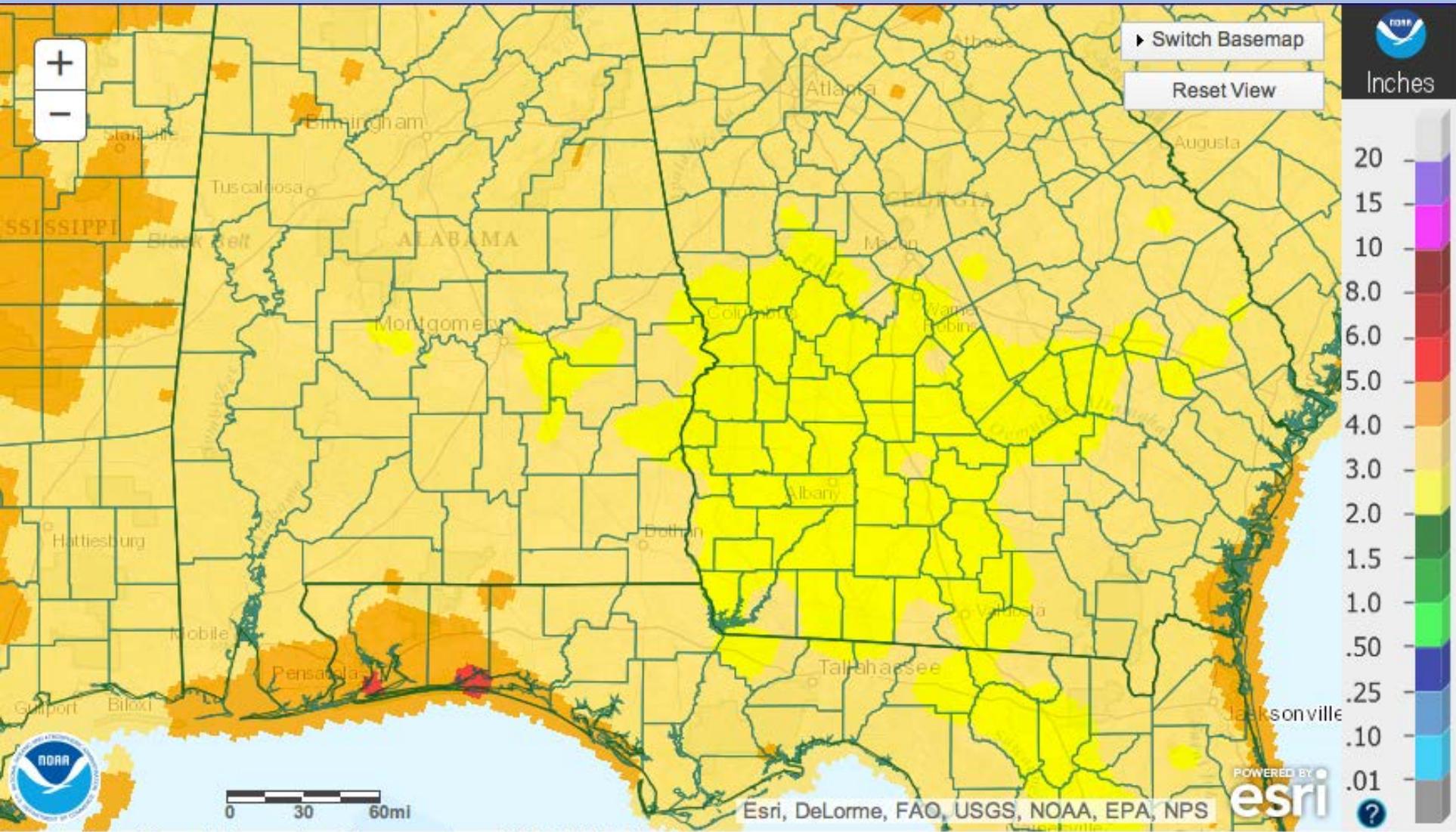
Departure from Normal



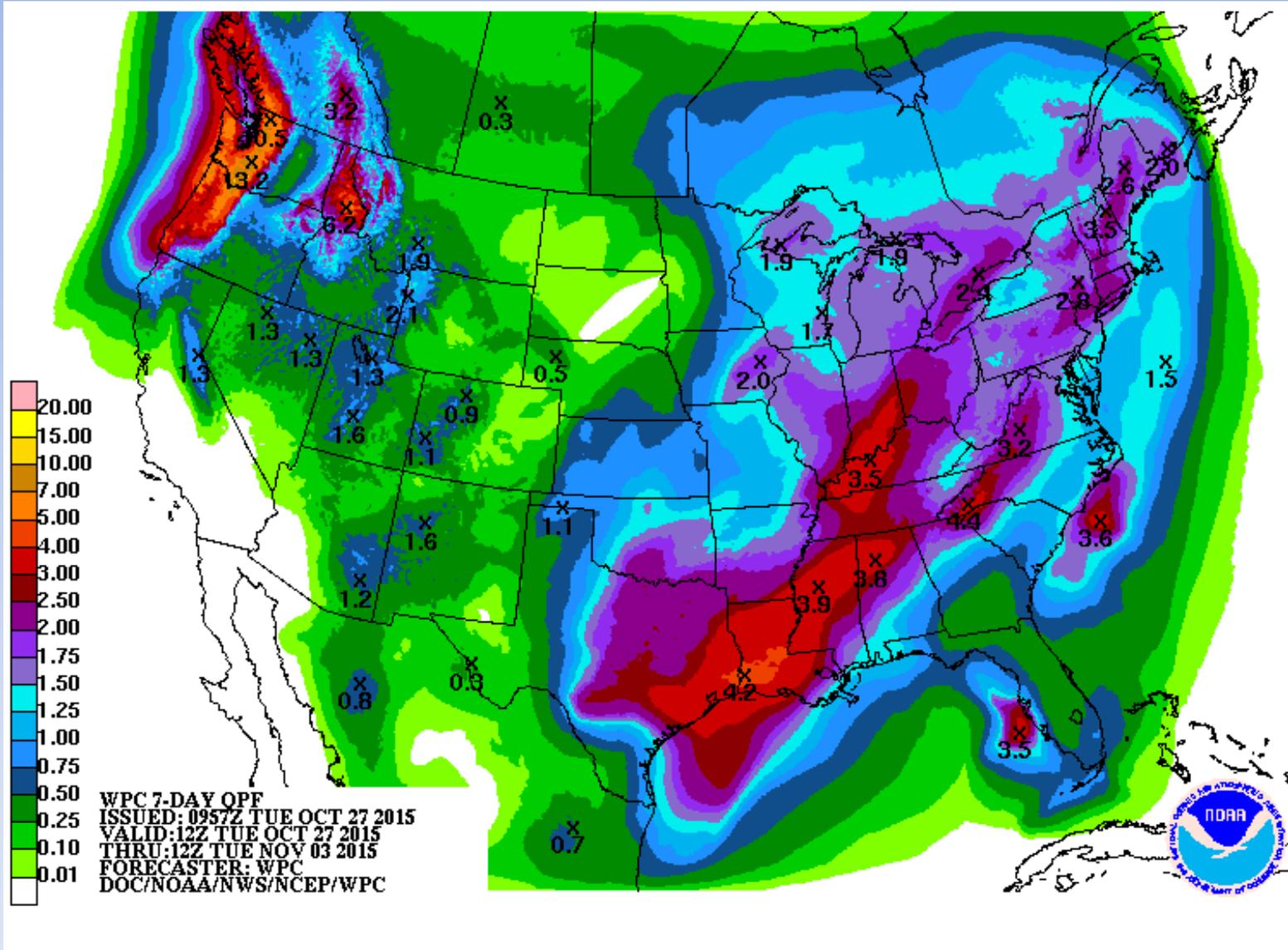
90-day Rainfall Departures



October is Driest Month of the Year



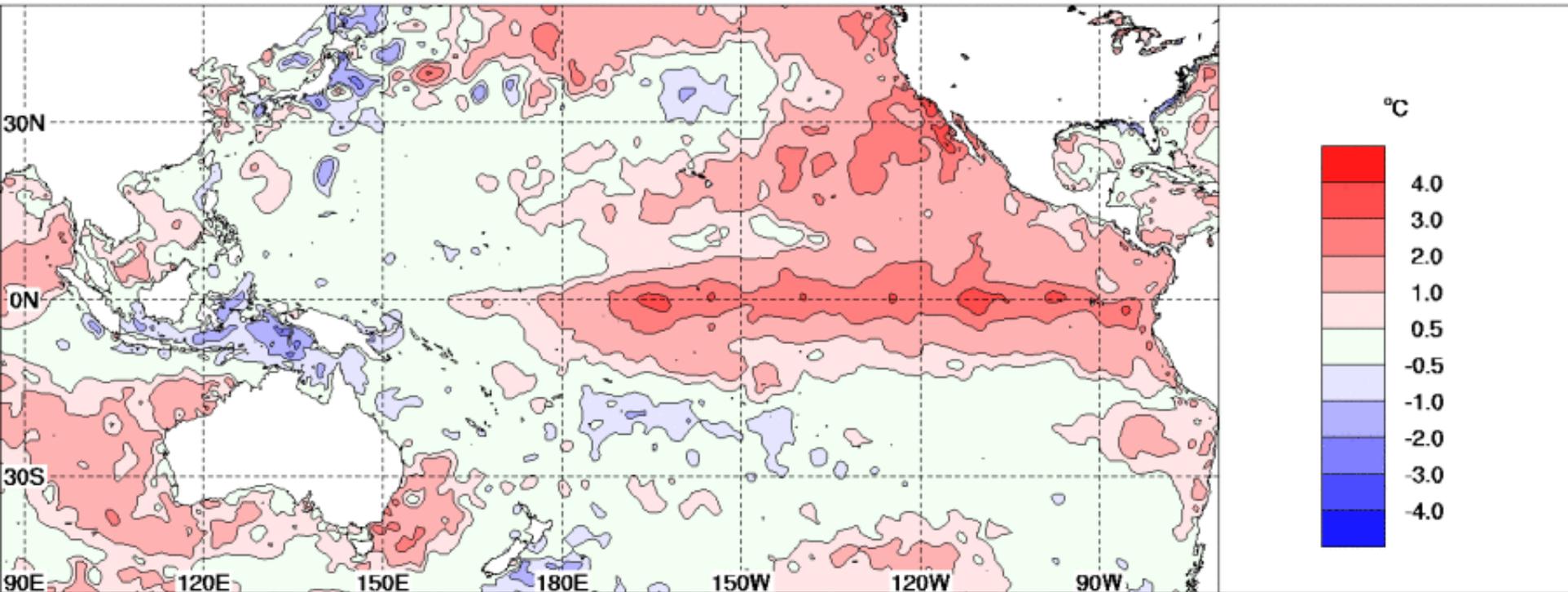
7-Day Precipitation Forecast*



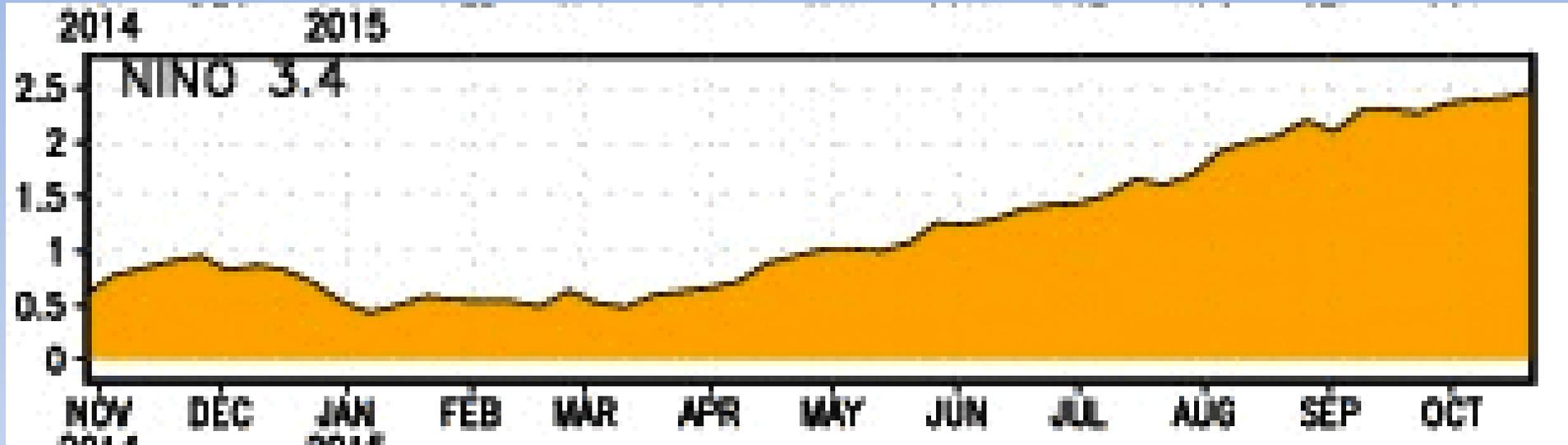
*updated post-webinar

Current SST Anomalies

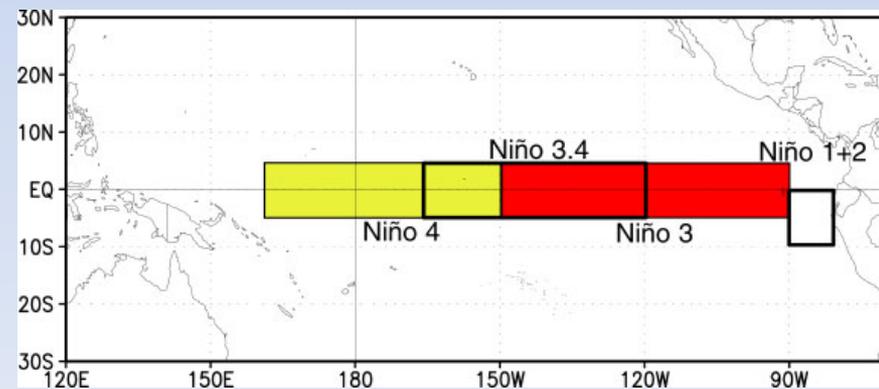
SSTA 1.0X1.0 NMOC OCEAN ANOMALIES (C) 20151019 20151025



Nino 3.4 Index

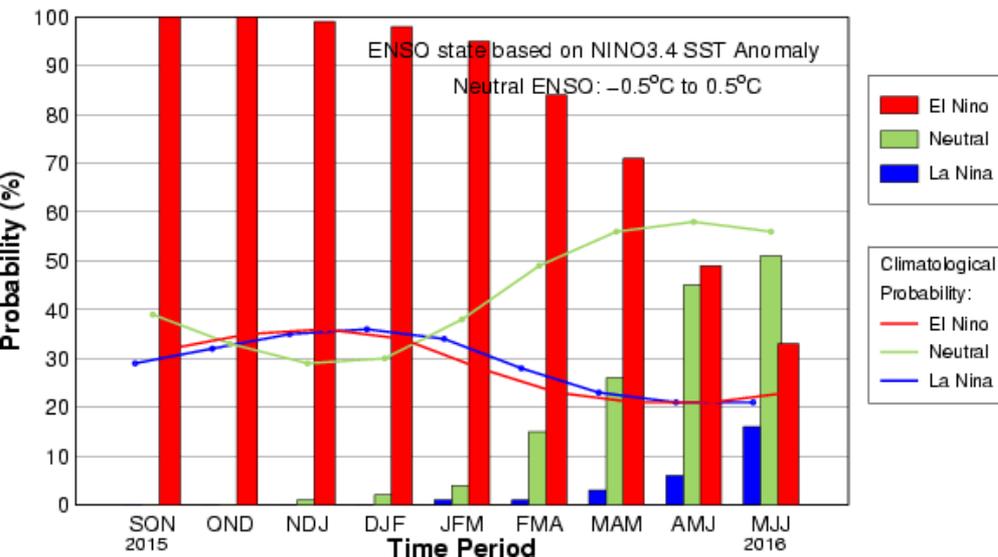


- Current weekly value at +2.5, into the “very strong” range
- Reached weekly peak value of 2.8 in Nov. 1997

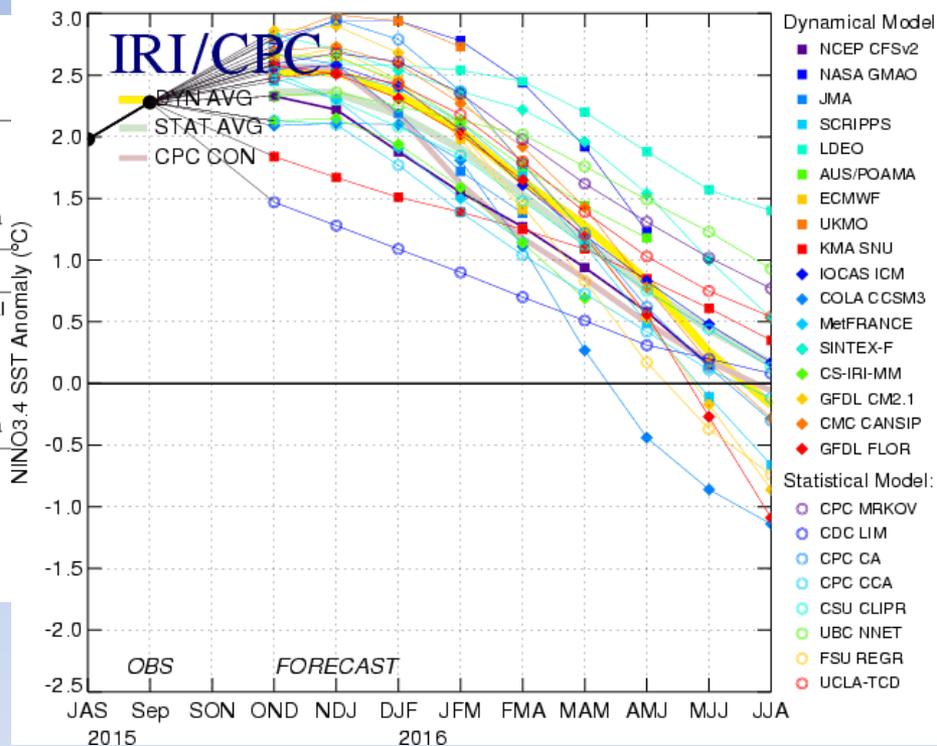


Nino 3.4 Forecasts

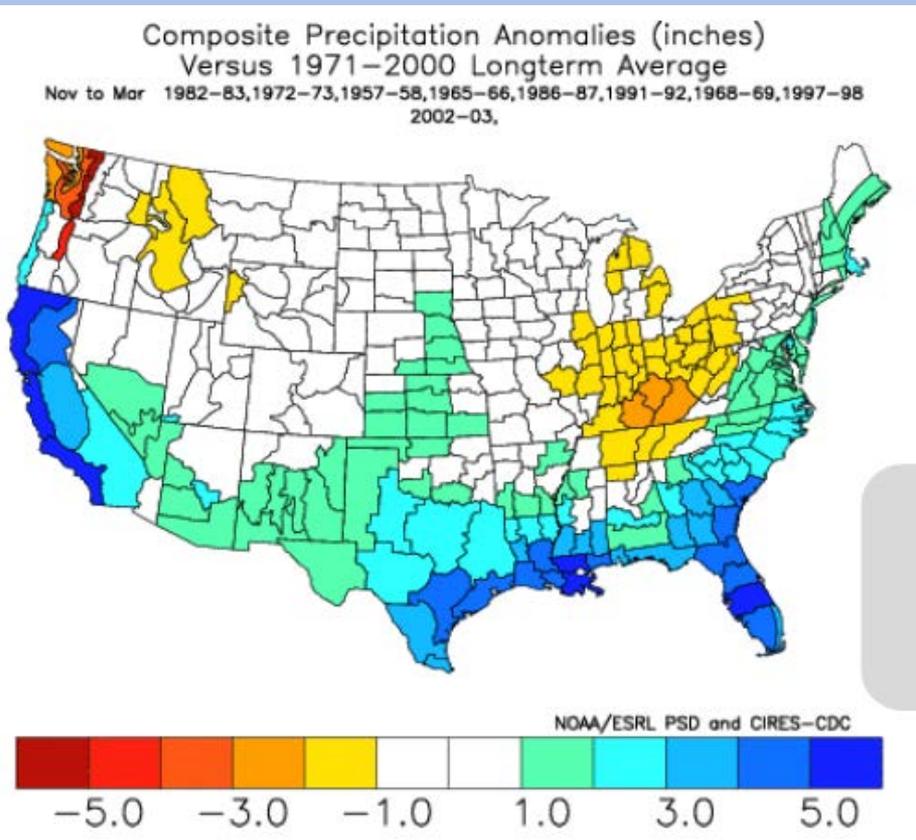
Early-Oct CPC/IRI Consensus Probabilistic ENSO Forecast



Mid-Oct 2015 Plume of Model ENSO Predictions



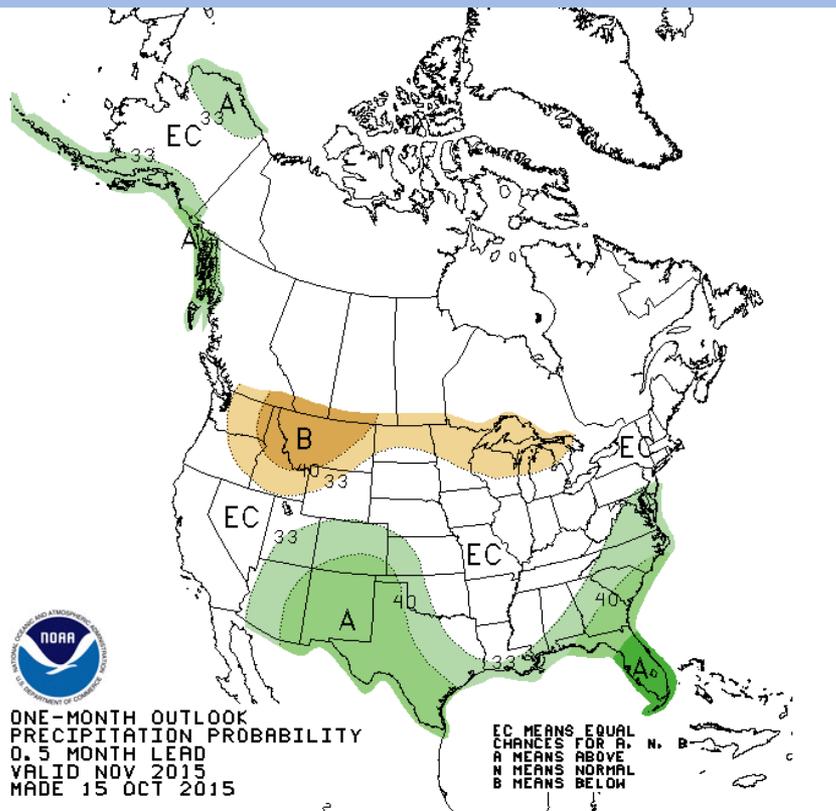
El Nino and Winter Rainfall



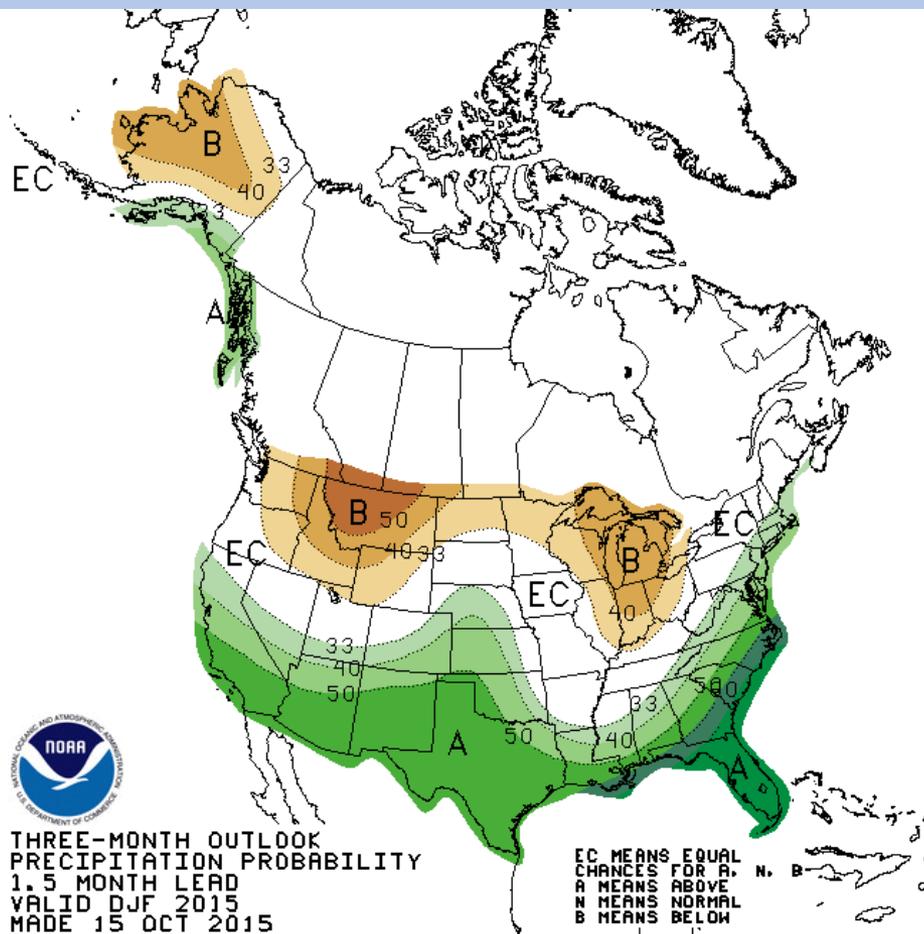
- El Nino typically brings enhanced winter rainfall to California and the southern U.S., including Texas and Florida.
- California Rainfall more hit or miss than other Southern States
- Strong El Nino does not necessarily mean even more rainfall, just more confidence in following the pattern.

Official NOAA Outlook

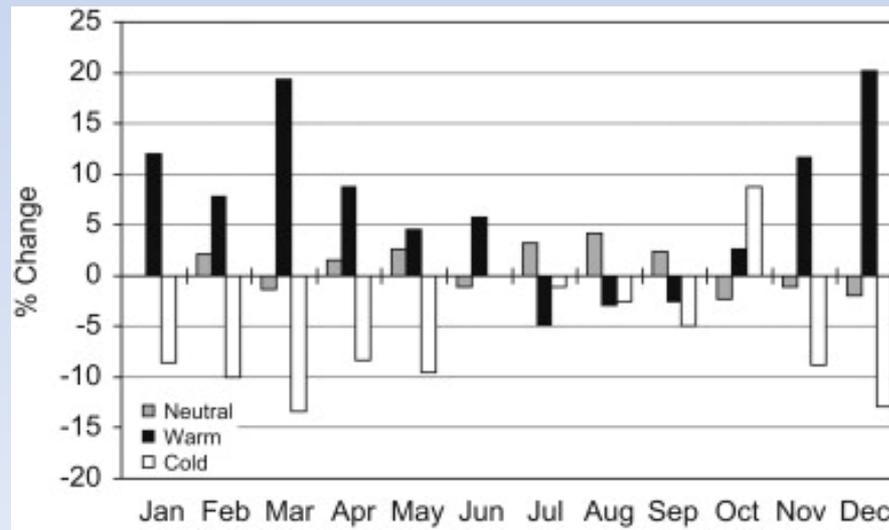
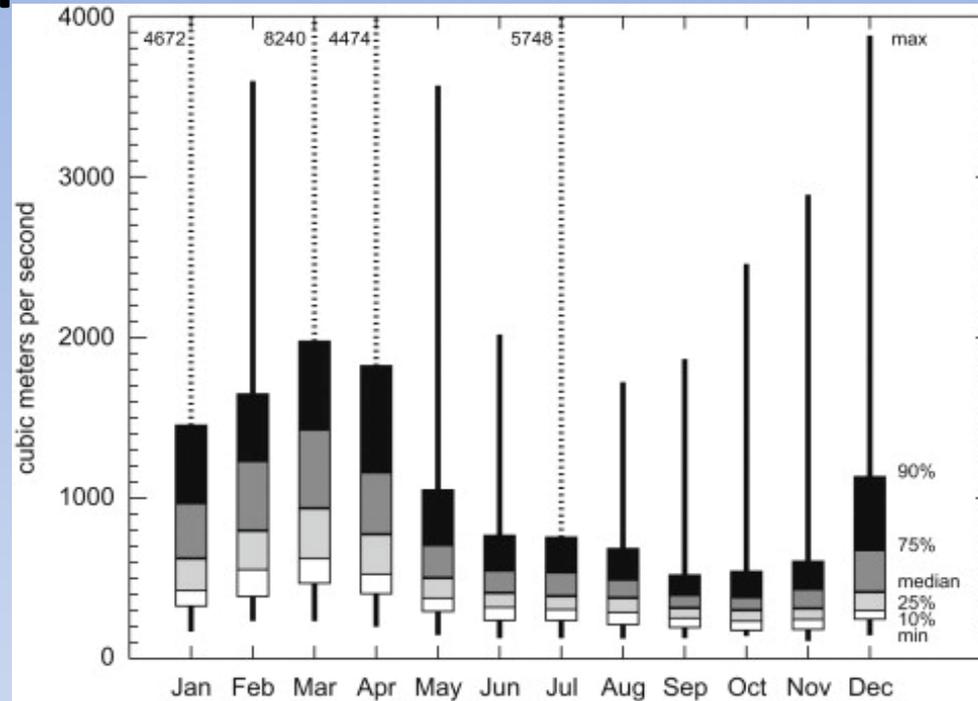
One Month



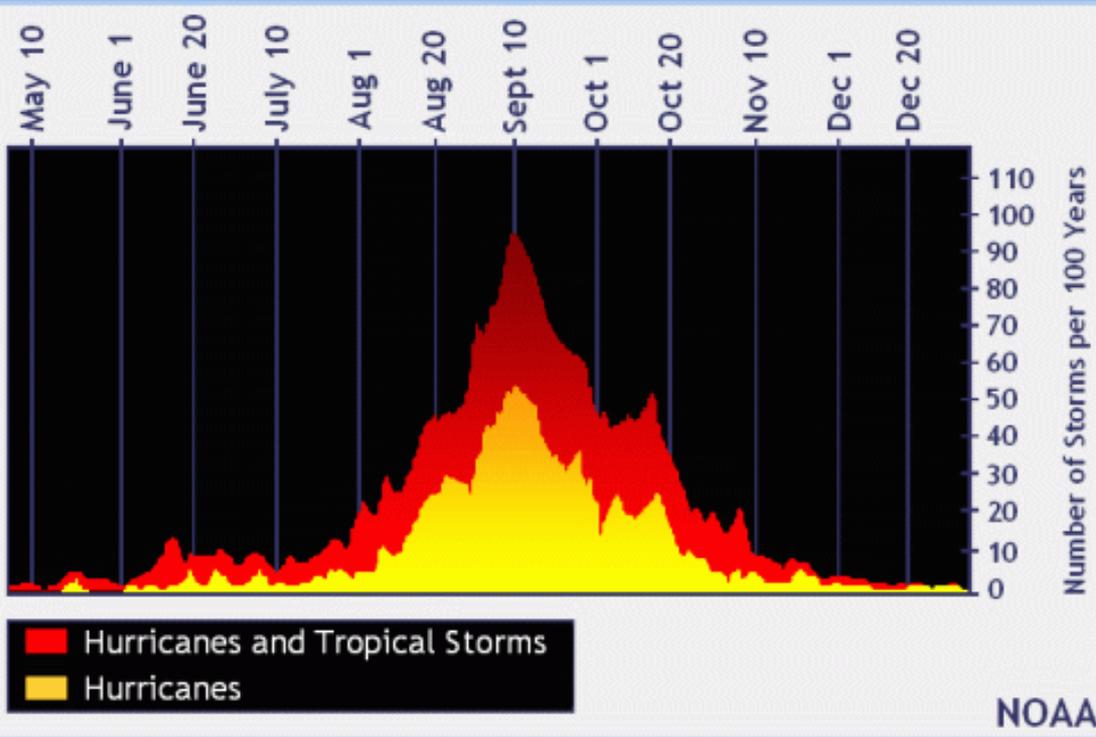
Winter (DJF)



Apalachicola River Flows



Atlantic Hurricane Summary



- Now over 10 years since a major U.S. landfall or any Florida hurricane landfall (Wilma 2005)
- Shear at record levels over the Caribbean this year

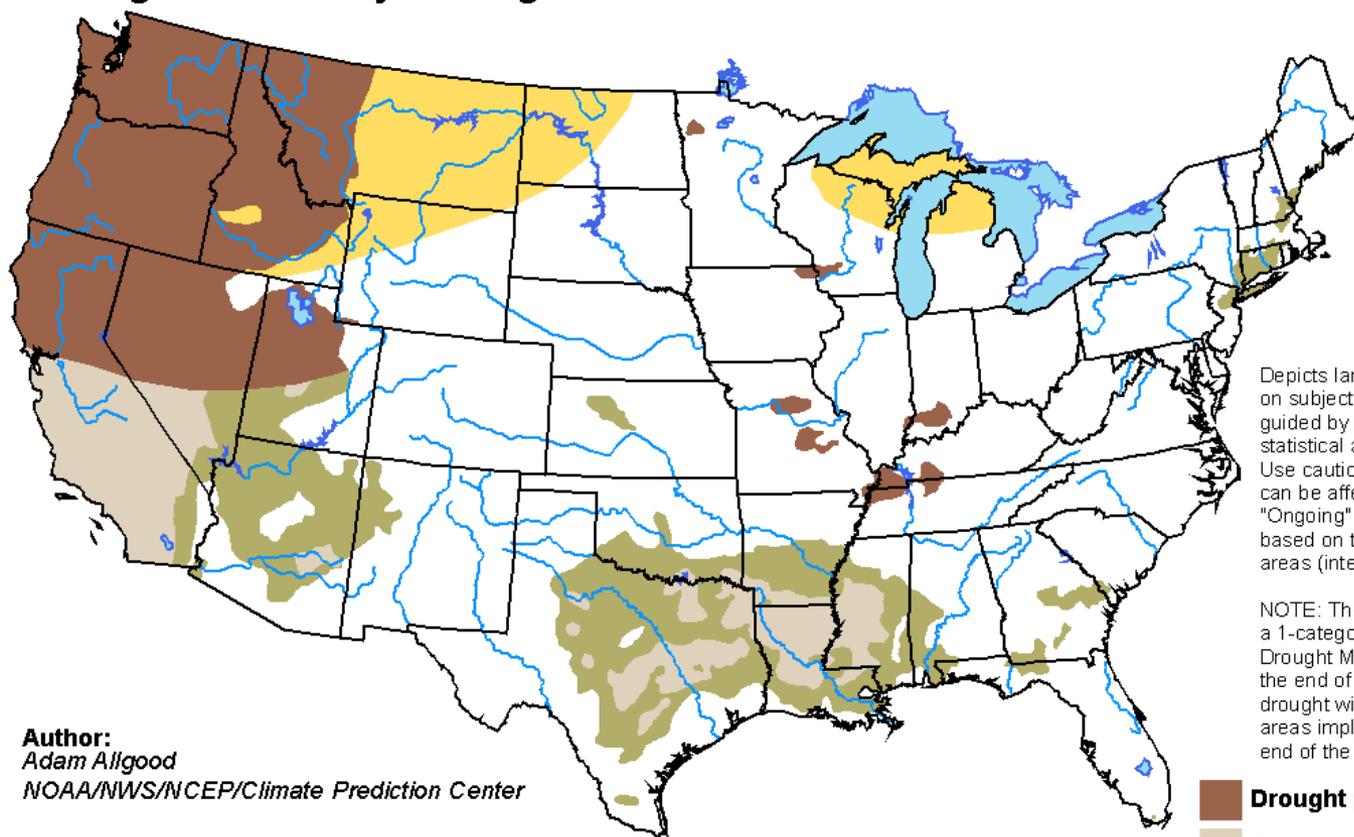
North Pacific Summary

- 22 Category 4-5 hurricanes in the North Pacific thus far in 2015
- ACE running at record levels for all regions of the N. Pacific

U.S. Drought Outlook

U.S. Seasonal Drought Outlook Drought Tendency During the Valid Period

Valid for October 15 - January 31, 2016
Released October 15, 2015

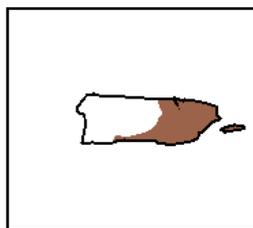
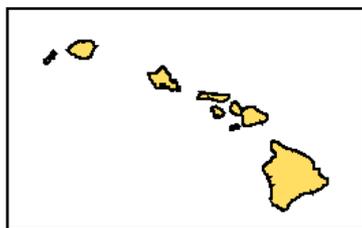
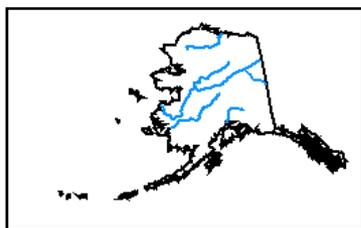


Depicts large-scale trends based on subjectively derived probabilities guided by short- and long-range statistical and dynamical forecasts. Use caution for applications that can be affected by short lived events. "Ongoing" drought areas are based on the U.S. Drought Monitor areas (intensities of D1 to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



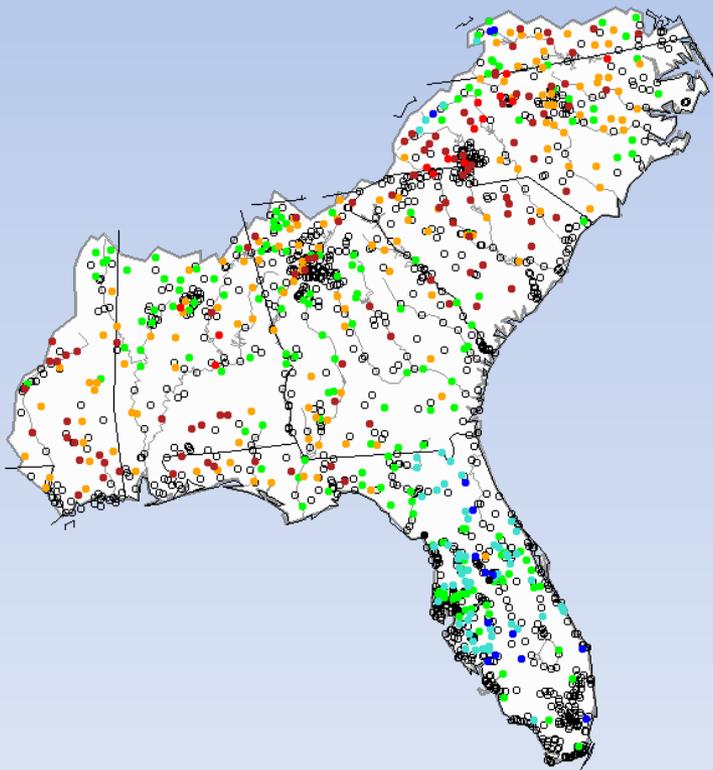
<http://go.usa.gov/3eZ73>

Streamflows and Groundwater

Realtime stream flow compared with historical monthly averages

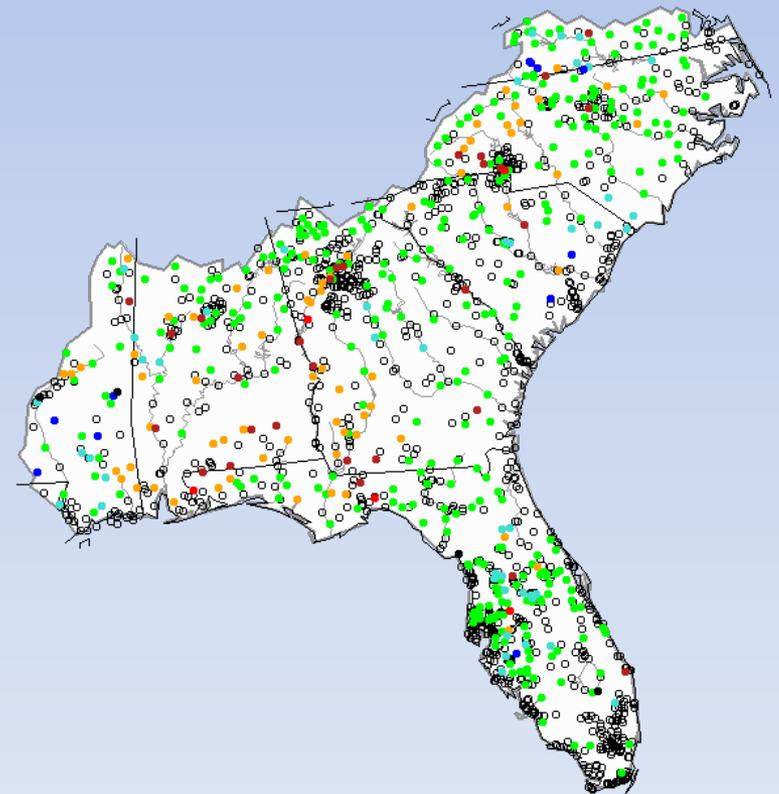
Previous Brief:

Monday, September 21, 2015 12:00ET



Current:

Monday, October 26, 2015 08:30ET



USGS Explanation - Percentile classes						
●	●	●	●	●	●	●
Low	<10	10-24	25-75	76-90	>90	High
	Much below normal	Below normal	Normal	Above normal	Much above normal	

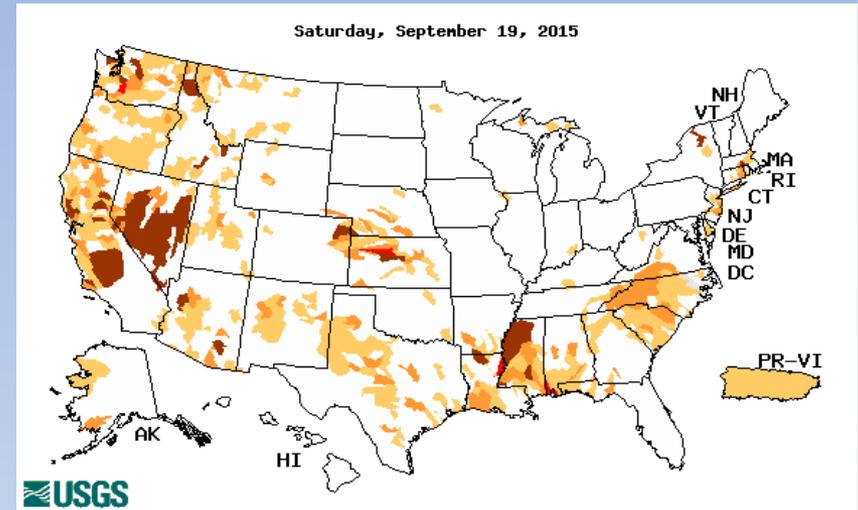


<http://waterwatch.usgs.gov>

Below Normal 7-day Average Streamflows

Previous brief:

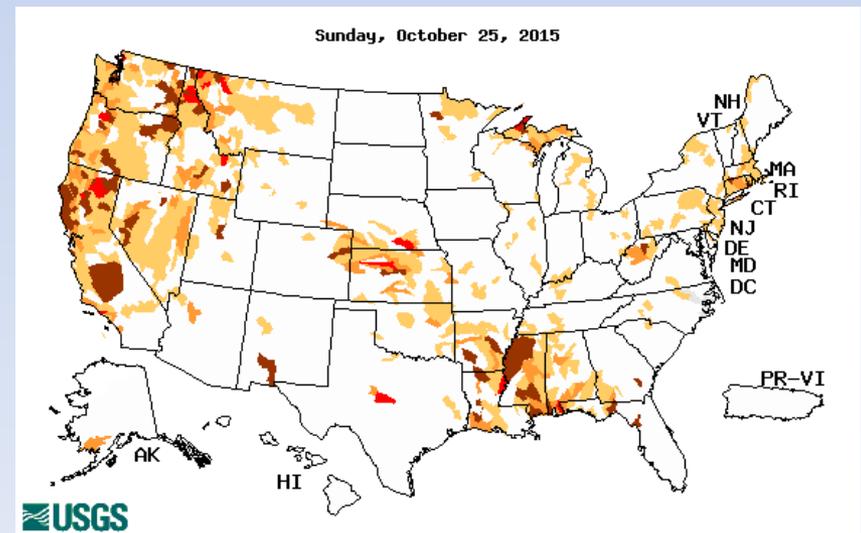
Below normal 7-day average streamflow as compared with historical streamflow for day shown



Explanation - Percentile classes				
Low	<=5	6-9	10-24	Intermittent or no hydrologic response
Extreme hydrologic drought	Severe hydrologic drought	Moderate hydrologic drought	Below normal	

Current:

<http://waterwatch.usgs.gov>

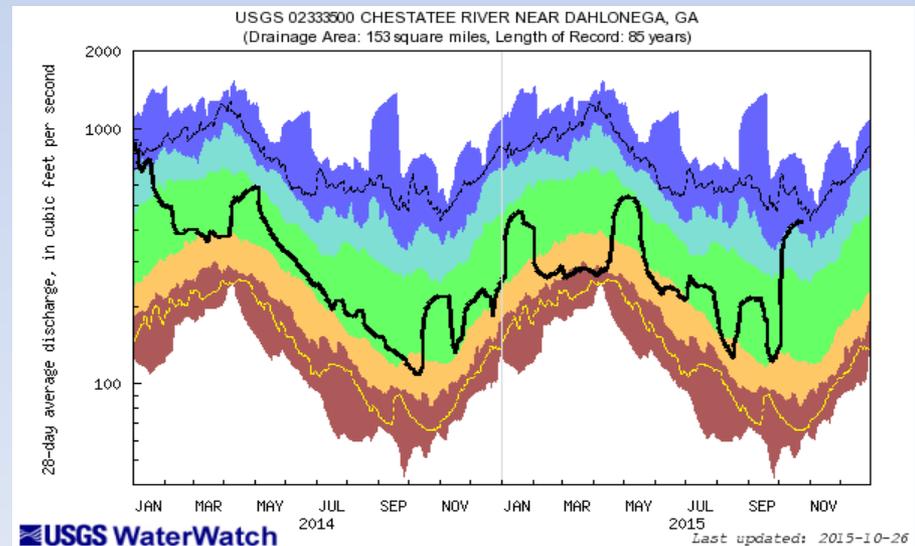
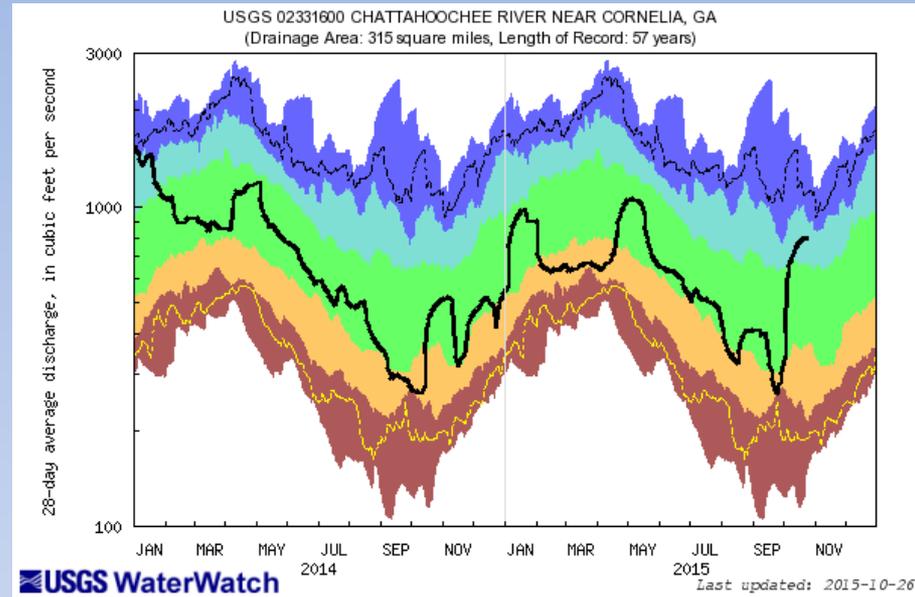


Lake Lanier Inflows

Chattahoochee near
Cornelia (02331600)

<http://waterwatch.usgs.gov>

Chestatee near
Dahlonega (02333500)



Explanation - Percentile classes						Flow
lowest-10th percentile	5	10-24	25-75	76-90	95	
Much below Normal		Below normal	Normal	Above normal	Much above-normal	

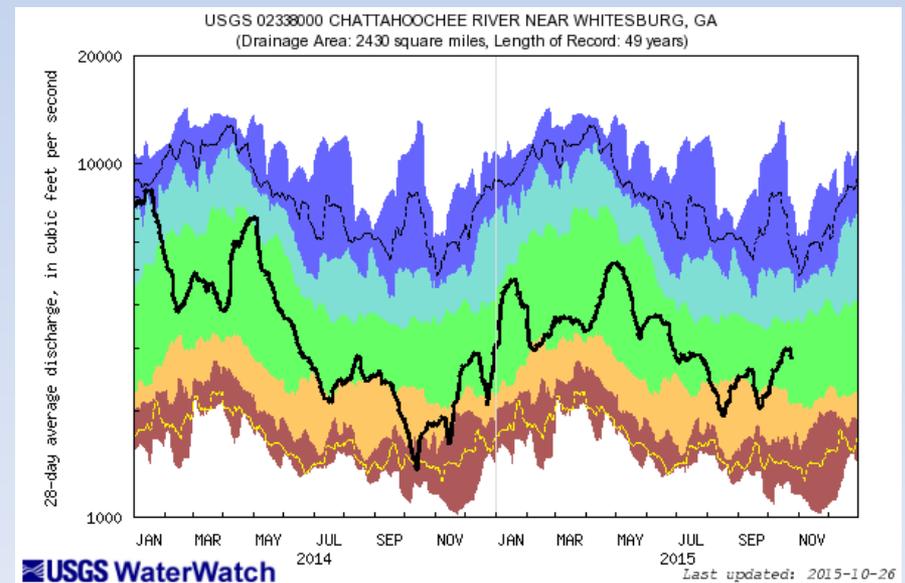
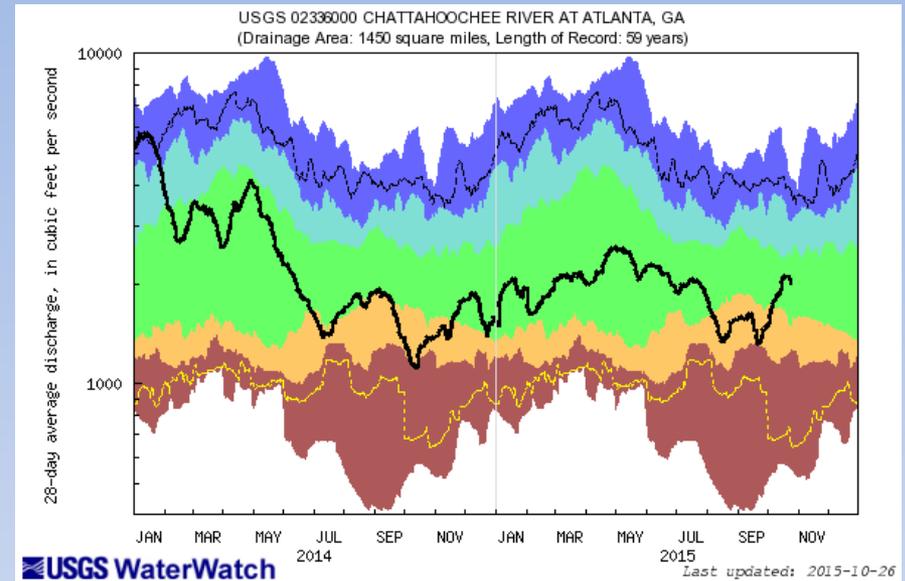
Current Streamflows

Chattahoochee at Atlanta (02336000)

<http://waterwatch.usgs.gov>

Chattahoochee near Whitesburg (02338000)

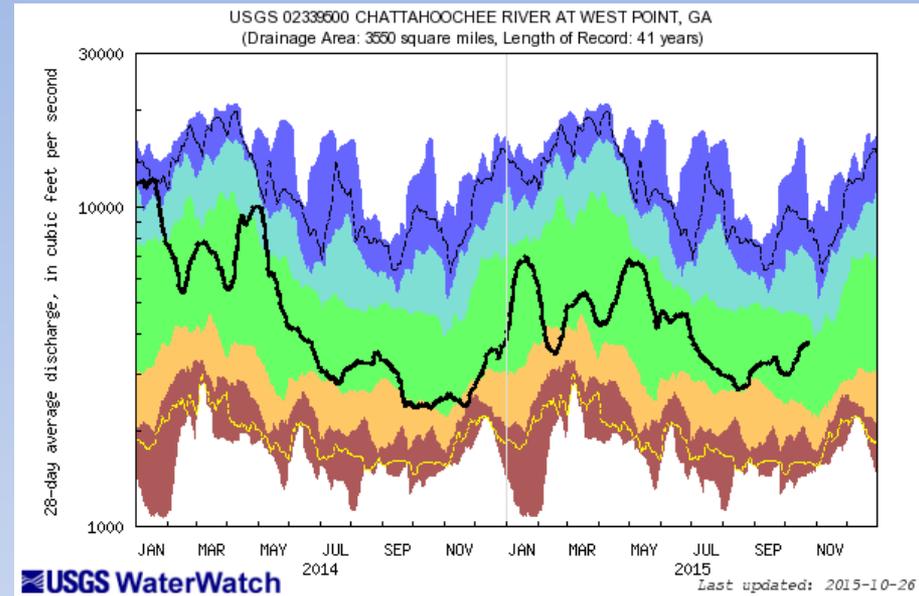
Explanation - Percentile classes						Flow
lowest-10th percentile	5	10-24	25-75	76-90	95	
Much below Normal	Below normal	Normal	Above normal	Much above-normal		



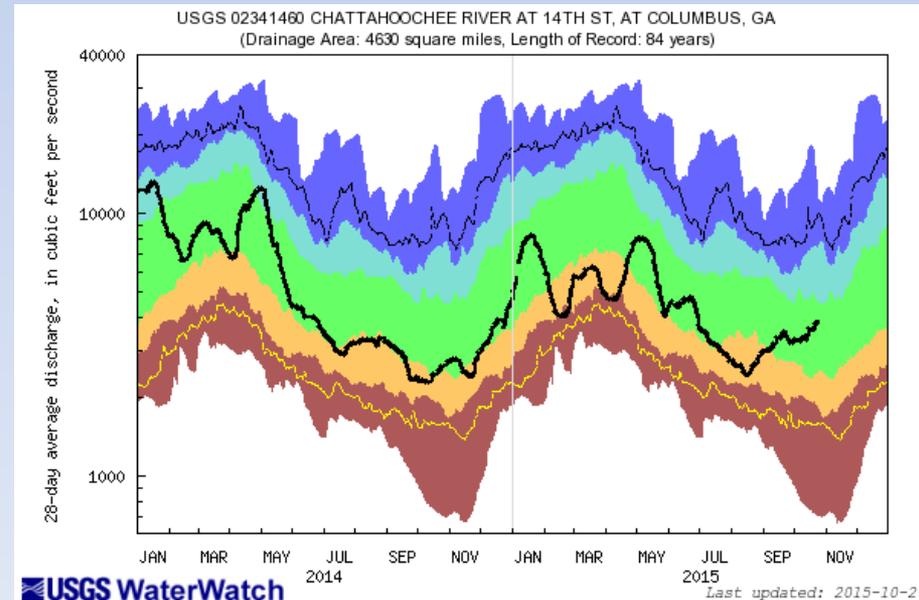
Current Streamflows

Chattahoochee at West Point (02339500)

<http://waterwatch.usgs.gov>



Chattahoochee at Columbus(02341460)



Explanation - Percentile classes						Flow
lowest-10th percentile	5	10-24	25-75	76-90	95	
Much below Normal	Below normal	Normal	Above normal	Much above-normal		

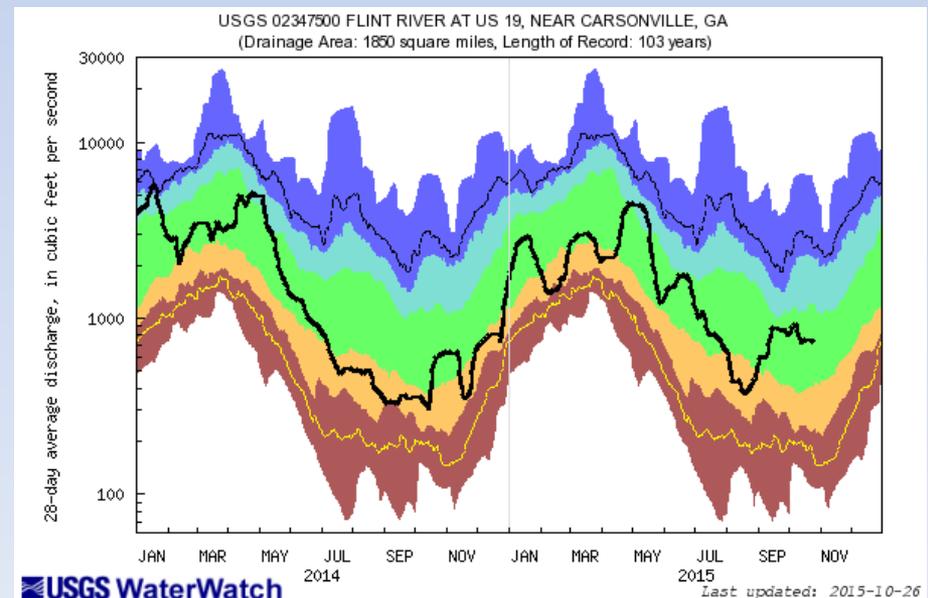
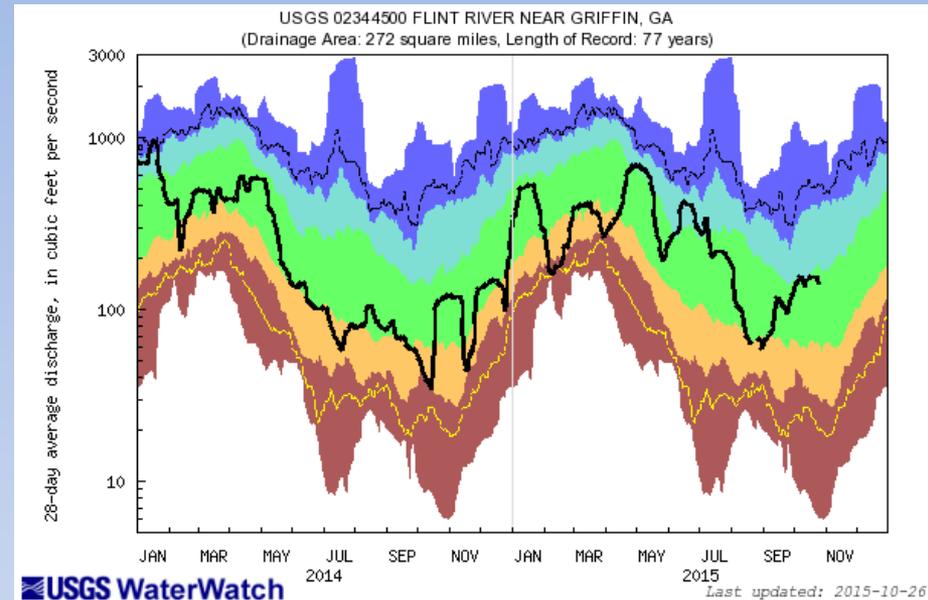
Current Streamflows

Flint River near Griffin (02344500)

<http://waterwatch.usgs.gov>

Flint River near Carsonville (02347500)

Explanation - Percentile classes						Flow
lowest-10th percentile	5	10-24	25-75	76-90	95	
Much below Normal	Below normal	Normal	Above normal	Much above-normal		



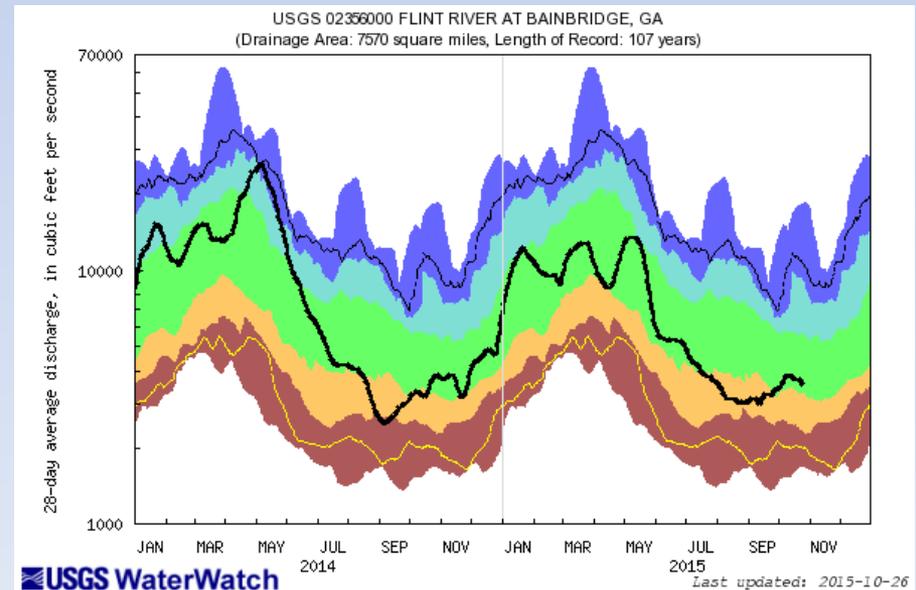
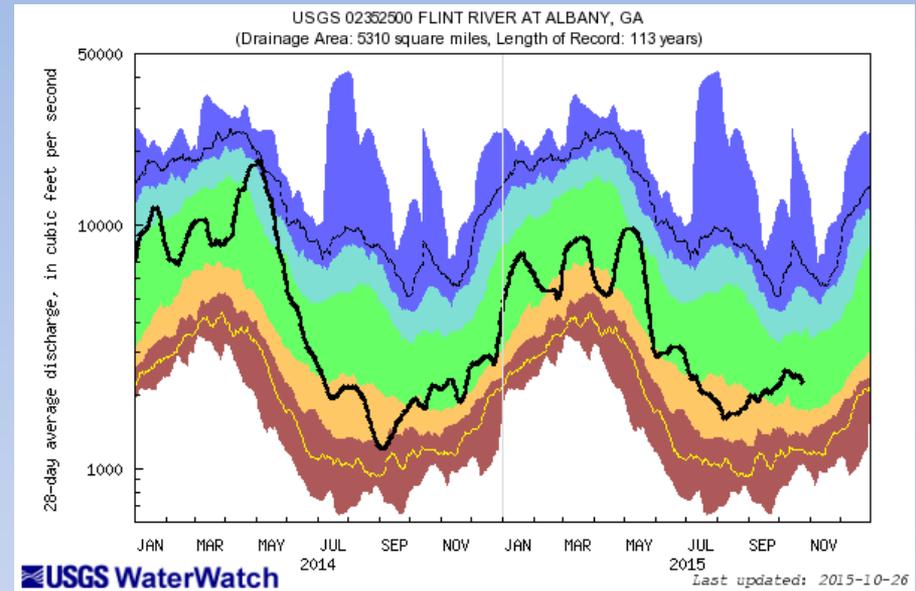
Current Streamflows

Flint River at Albany (02352500)

<http://waterwatch.usgs.gov>

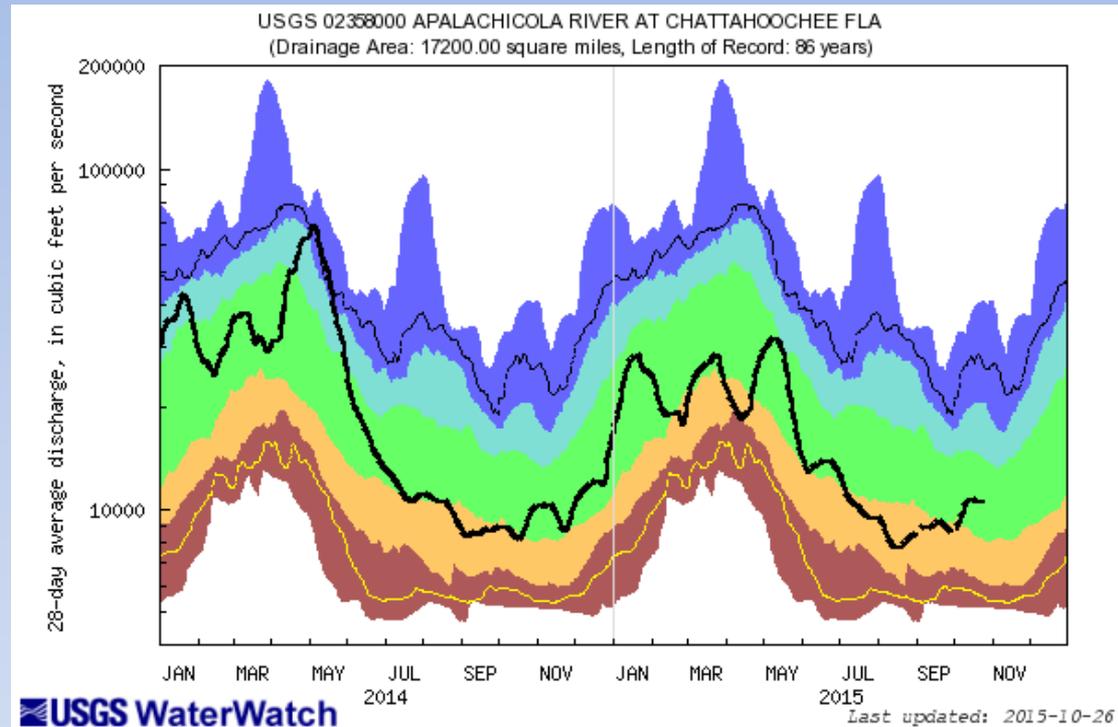
Flint at Bainbridge (02356000)

Explanation - Percentile classes						Flow
lowest-10th percentile	5	10-24	25-75	76-90	95	
Much below Normal	Below normal	Normal	Above normal	Much above-normal		



Streamflows

Apalachicola at Chattahoochee (02358000)

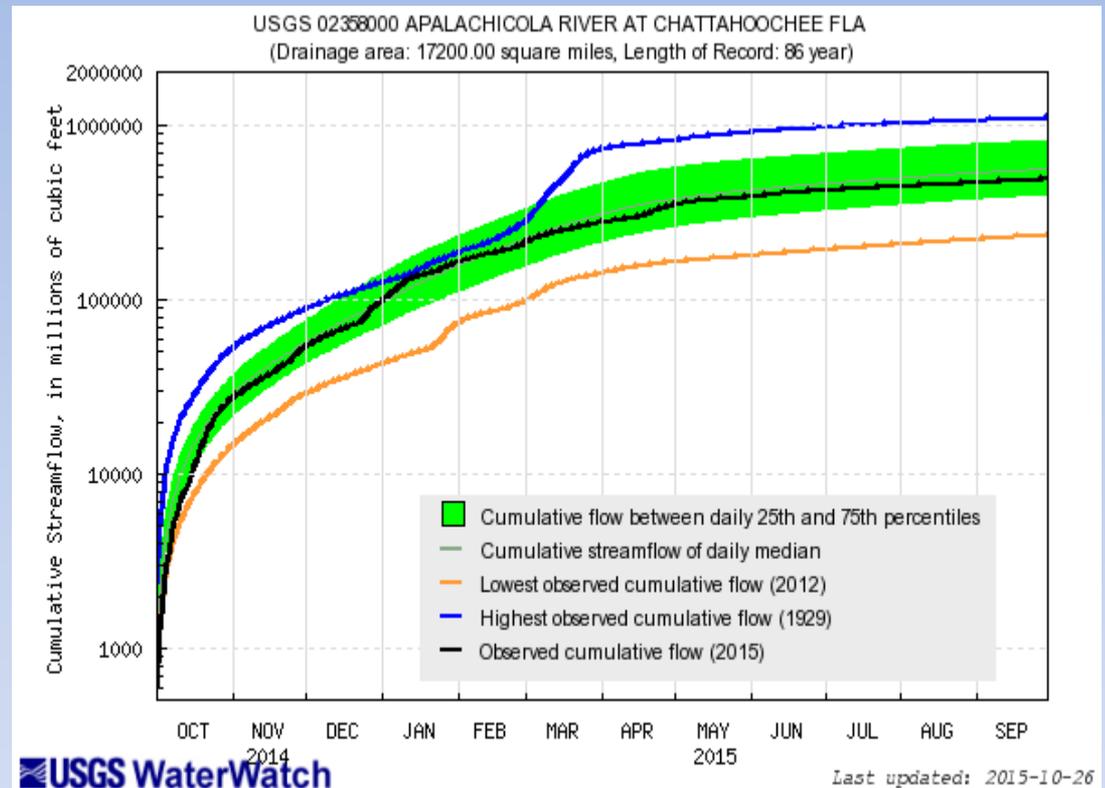


<http://waterwatch.usgs.gov>

Explanation - Percentile classes						
lowest-10th percentile	5	10-24	25-75	76-90	95	90th percentile-highest
Much below Normal	Below normal	Normal	Above normal	Much above normal		Flow

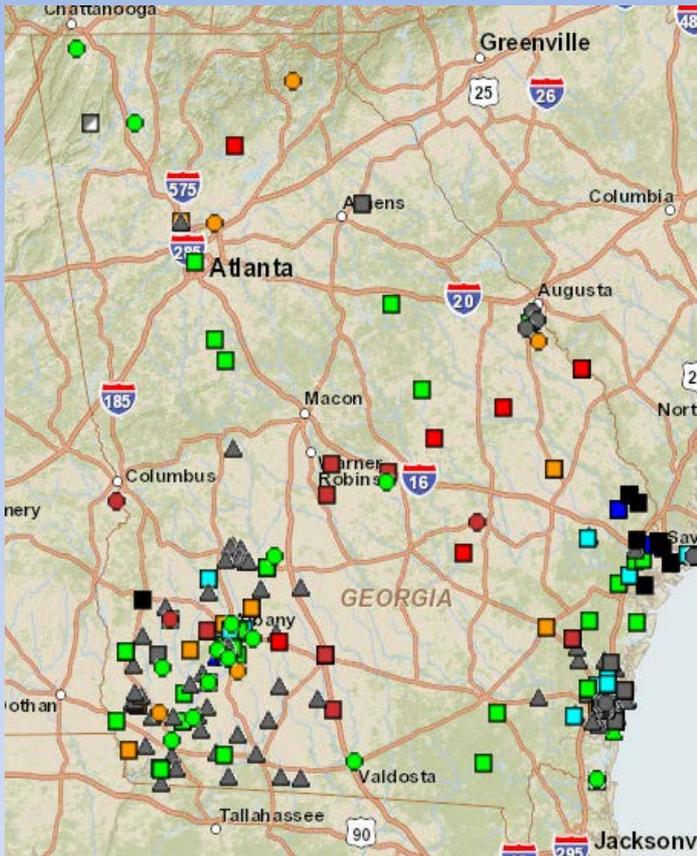
Streamflows

Apalachicola at Chattahoochee (02358000)

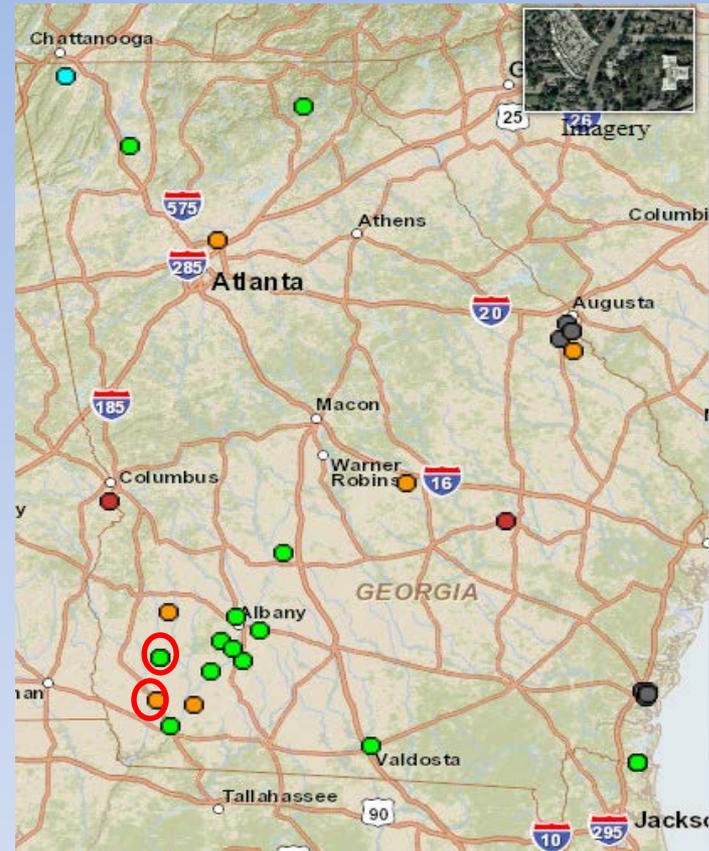


<http://waterwatch.usgs.gov>

Groundwater Conditions



Previous brief

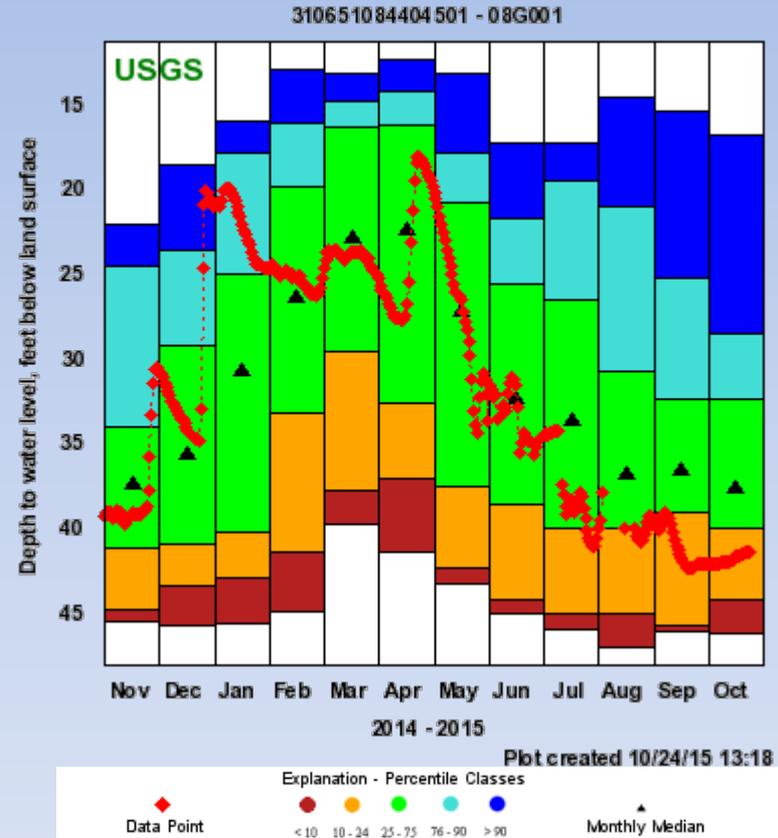


Current brief

Explanation - Percentile classes (symbol color based on most recent measurement)							Wells		Springs	
● (Red)	● (Dark Red)	● (Orange)	● (Green)	● (Cyan)	● (Blue)	● (Black)	○ (Open Circle)	○ (Open Circle)	■ (Solid Square)	■ (Solid Square)
Low	<10	10-24	25-75	76-90	>90	High	□ (Open Square)	□ (Open Square)	▣ (Half-Filled Square)	▣ (Half-Filled Square)
	Much Below Normal	Below Normal	Normal	Above Normal	Much Above Normal		△ (Open Triangle)	△ (Open Triangle)	▣ (Half-Filled Square)	▣ (Half-Filled Square)
								Periodic Measurements		

<http://groundwaterwatch.usgs.gov>

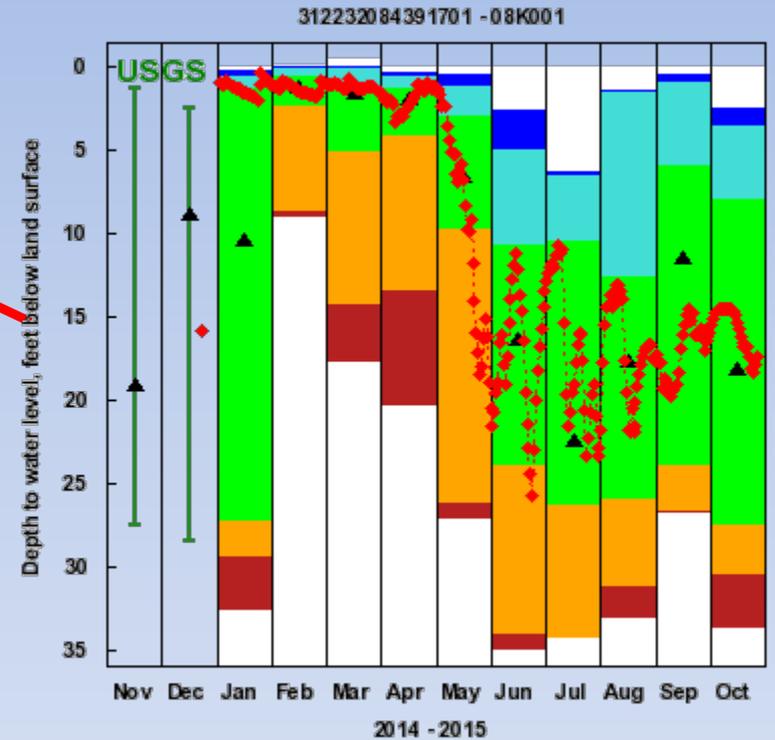
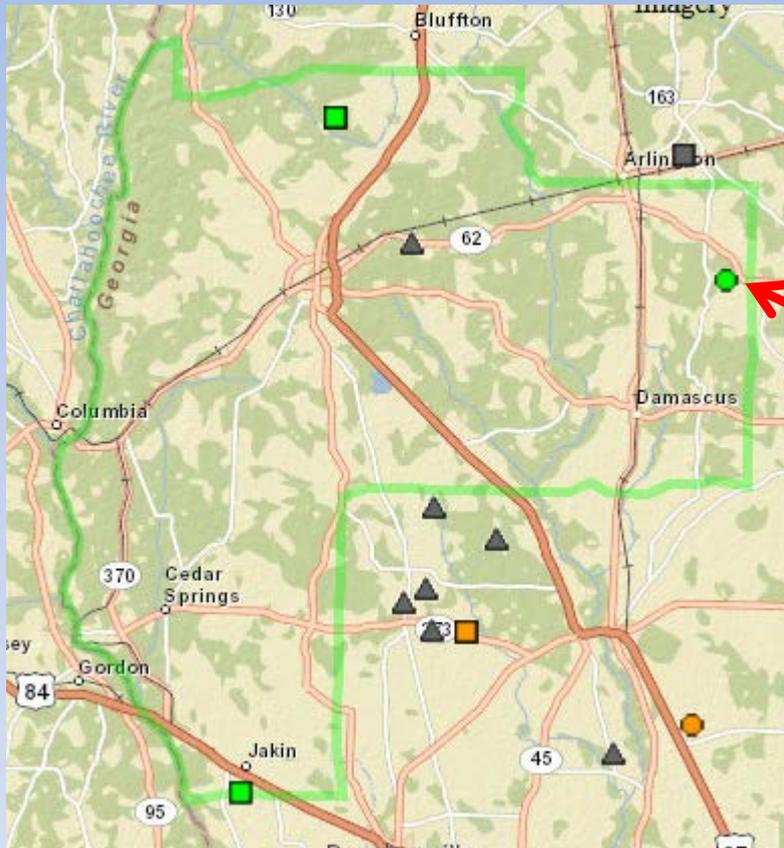
Groundwater Status – Miller County 08G001



Explanation - Percentile classes (symbol color based on most recent measurement)							Wells		Springs	
●	●	●	●	●	●	●	○	■	○	■
Low	<10	10-24	25-75	76-90	>90	High	□	■	□	■
	Much Below Normal	Below Normal	Normal	Above Normal	Much Above Normal		Not Ranked	△	■	△
							□	■	△	■
							□	■	△	■

(Upper Floridan Aquifer)

Groundwater Status – Early County 08K001



Explanation - Percentile classes (symbol color based on most recent measurement)							Wells		Springs	
●	●	●	●	●	●	●	○	○	■	■
Low	<10	10-24	25-75	76-90	>90	High	□	□	□	□
	Much Below Normal	Below Normal	Normal	Above Normal	Much Above Normal		△	△	△	△
							Measurements			

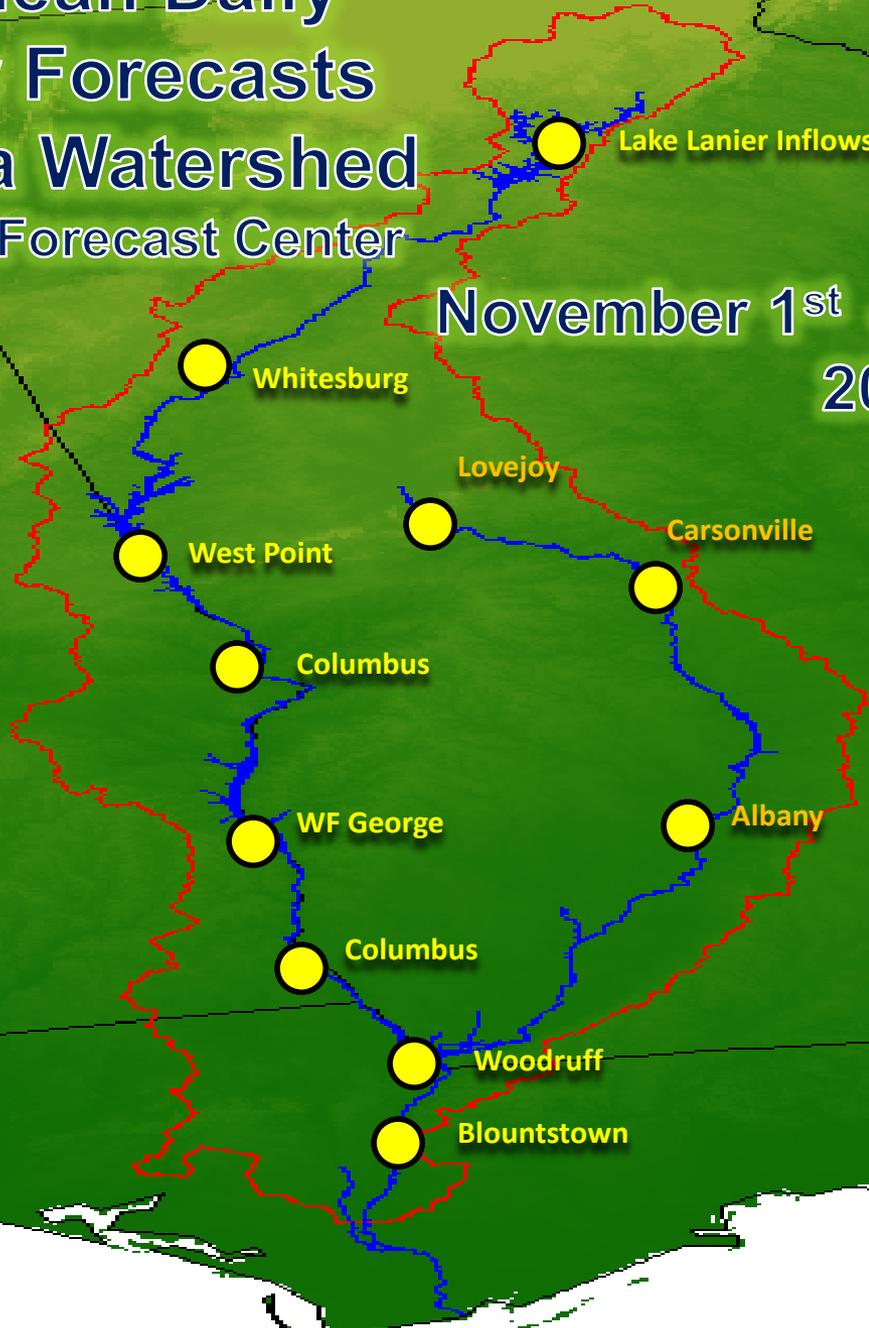
(Upper Floridan Aquifer)

Streamflow Forecasts

1-Month Mean Daily Streamflow Forecasts Apalachicola Watershed Southeast River Forecast Center

November 1st – December 1st
2015

-  Above Normal
-  Near Normal
-  Below Normal



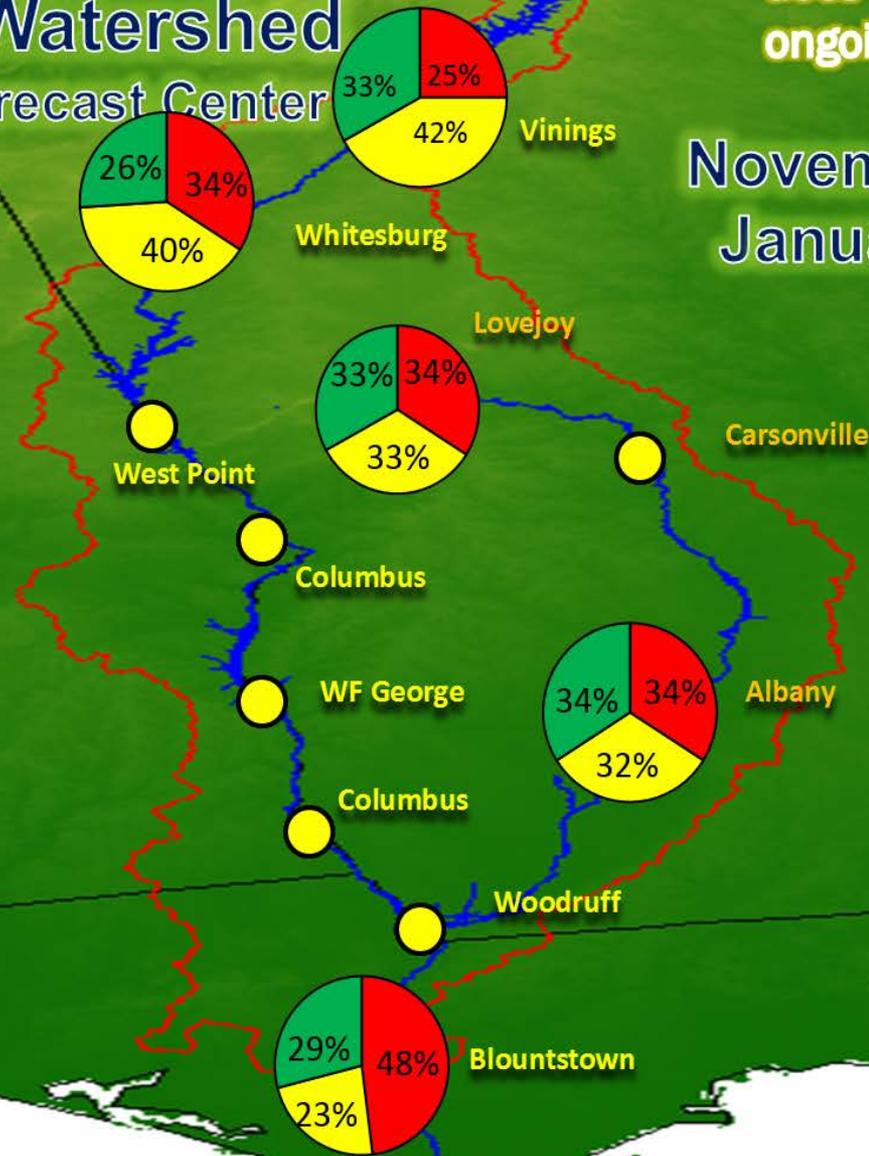
3-Month Mean Daily Streamflow Forecasts

Apalachicola Watershed

Southeast River Forecast Center

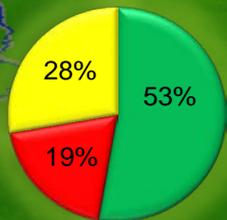
This forecast method does not account for ongoing El Niño.

November 1st 2015 – January 31st 2016

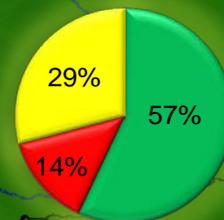


What to expect this Winter and Spring? El Niño and Southeast Streamflow

Apalachicola



Altamaha



Satilla

Streamflow November - April



Probability Above



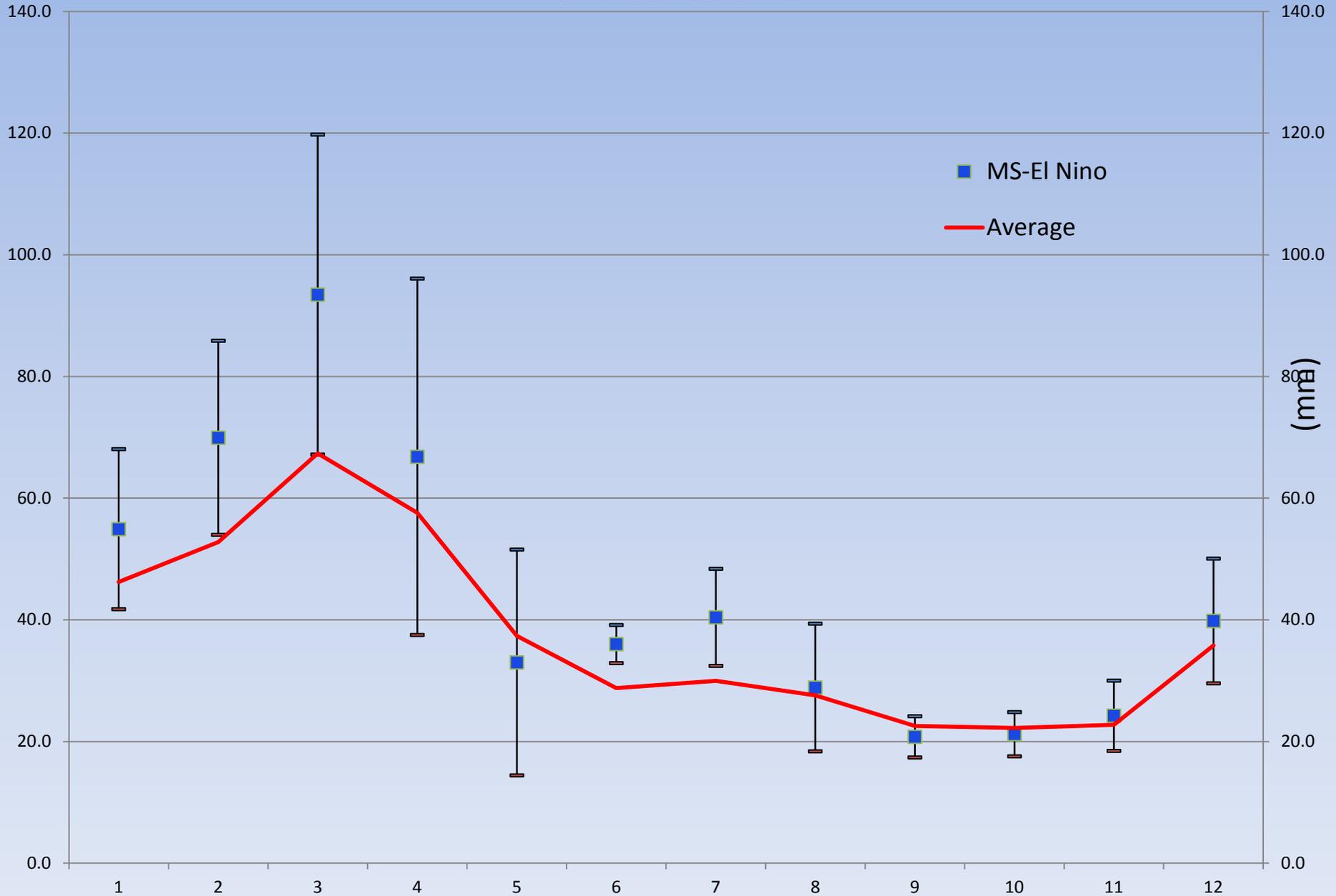
Probability Normal



Probability Below

APA – MS El Niño and Runoff from Streamflow

Confidence Level 95%



El Niño 2015

Southeast River Flood Threat

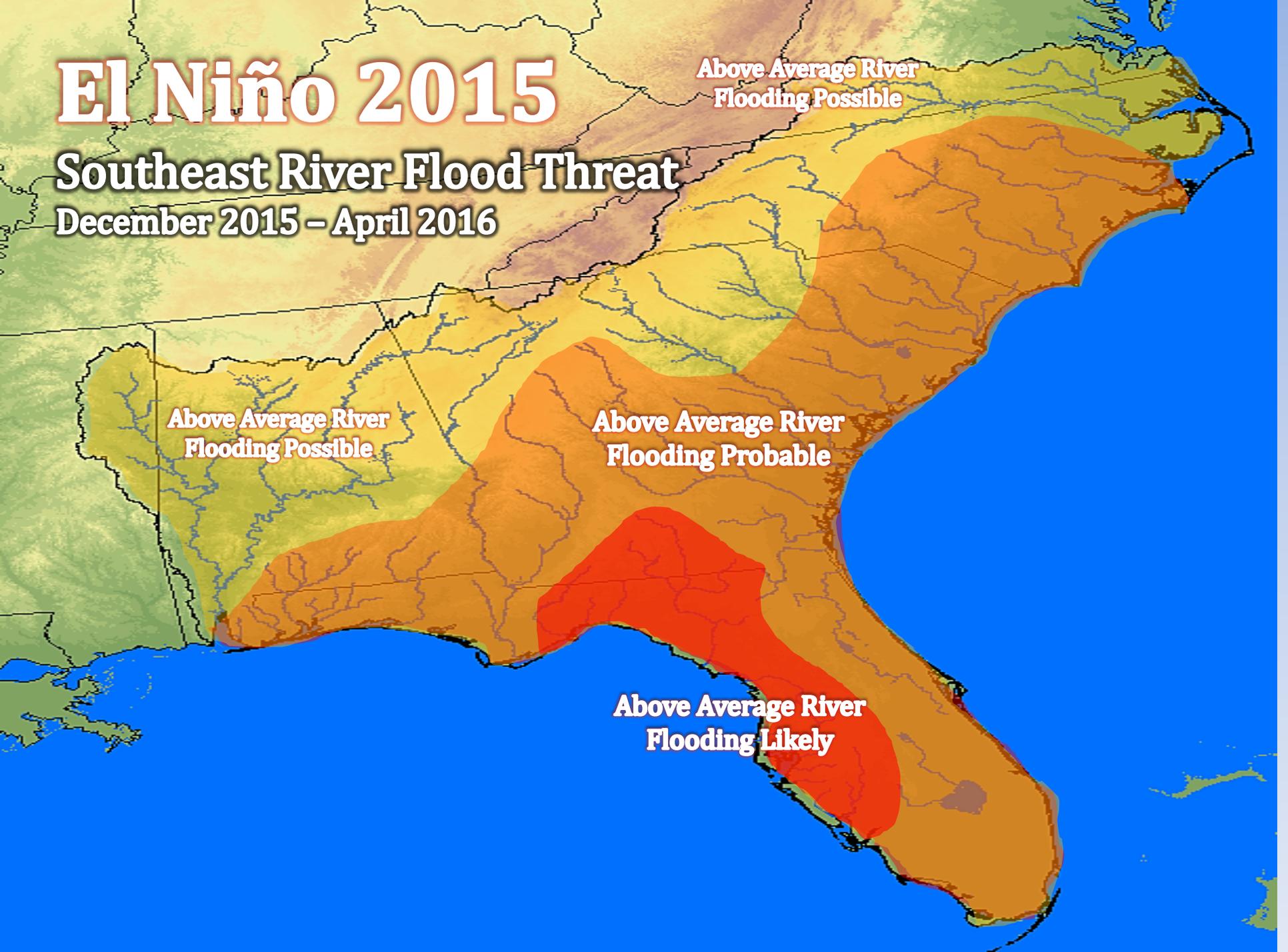
December 2015 – April 2016

Above Average River
Flooding Possible

Above Average River
Flooding Possible

Above Average River
Flooding Probable

Above Average River
Flooding Likely



Summary - David Zierden

- Dry for most of October, only fractions of an inch through 10/24.
- October is our dries month, deficits in the basin not that significant.
- Parts of the lower ACF designated as moderate drought by the *US Drought Monitor*.
- El Nino continues to strengthen, reaching “very strong” level (similar to 1982 and 1998).
- El Nino composites show much above normal winter rainfall across most of the ACF
- Streamflow analysis shows increased winter flows on the Apalachicola River during El Nino.
- CPC one-month and winter outlooks favor pattern of above normal rainfall for all the Southern U.S., strongest forecast possible for Florida.
- High vertical shear inhibiting hurricanes from impacting the U.S.
- Drought very likely to improve over the next few months.

Summary-Paul Ankcorn

- Realtime streamflows range from normal to below normal for most of the ACF basin.
- 28-day average streamflows into Lake Lanier are in the above normal to much above normal range.
- 28-day average streamflows are in the normal range for most of the Flint River basin.
- Groundwater levels are in the normal to below normal range in Southwest Georgia.

Summary - Jeff Dobur

- 1 Month Streamflow forecast - Near Normal
- 3 Month Streamflow forecast – Equal chances using ESP method. Hedge ENSO = higher flows.
- Pie Charts do not consider any future forecast such as ENSO, CPC or other. Based on soil conditions relative to normal in concert with historical precipitation.

Questions, Comments, Discussion

References

Speakers

David Zierden, FSU

Paul Ankorn, USGS

Jeff Dobur, SERFC

Moderator

Eric Reutebuch, AU WRC

Additional information

- General drought information
<http://drought.gov>
<http://www.drought.unl.edu>
- General climate and El Niño information
<http://agroclimate.org/climate/>
- Streamflow monitoring & forecasting
<http://waterwatch.usgs.gov>
<http://www.srh.noaa.gov/serfc/>
- Groundwater monitoring
<http://groundwaterwatch.usgs.gov>

Thank you!

Next briefing

November 17, 2015, 1:00 pm EDT

Moderator: Eric Reutebuch

Slides from this briefing will be posted at

<http://drought.gov/drought/content/regional-programs/regional-drought-webinars>

Please send comments and suggestions to:

reuteem@auburn.edu