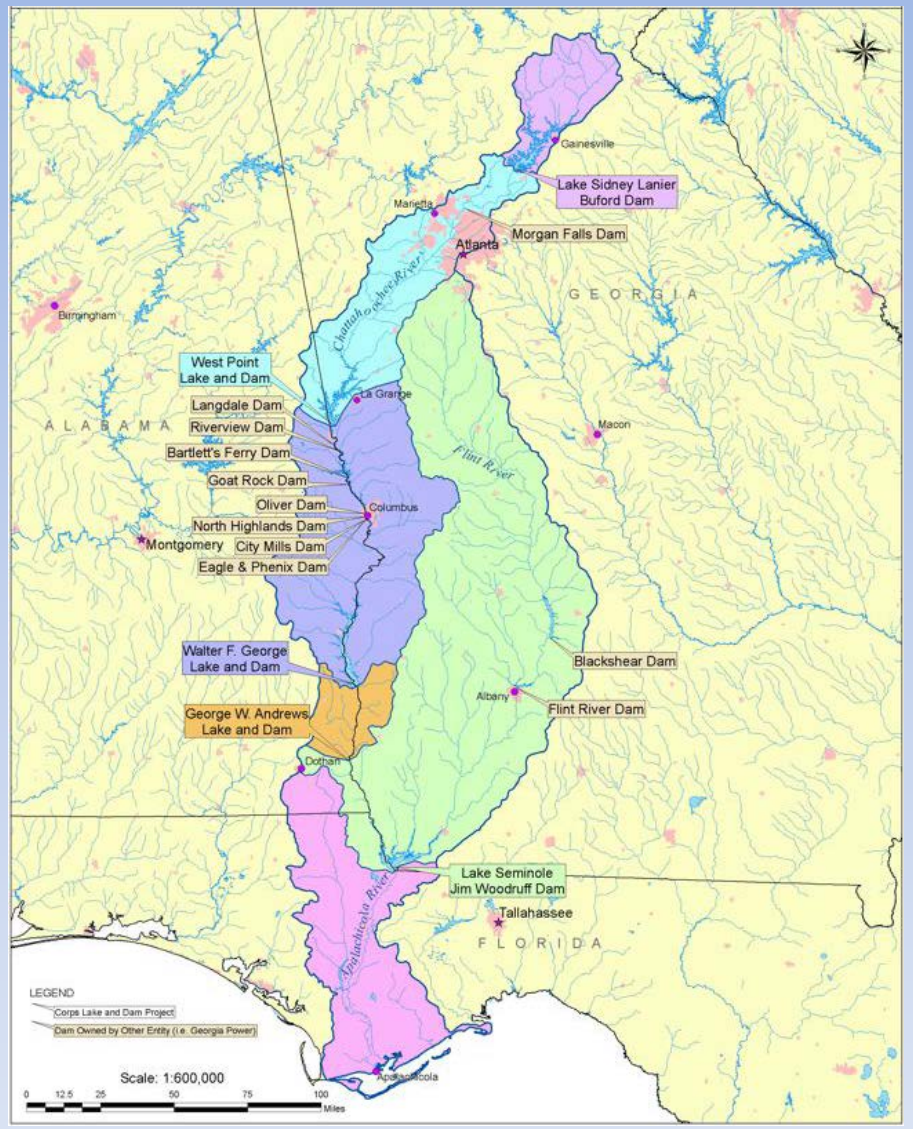
National Integrated Drought Information System

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

17 May 2016

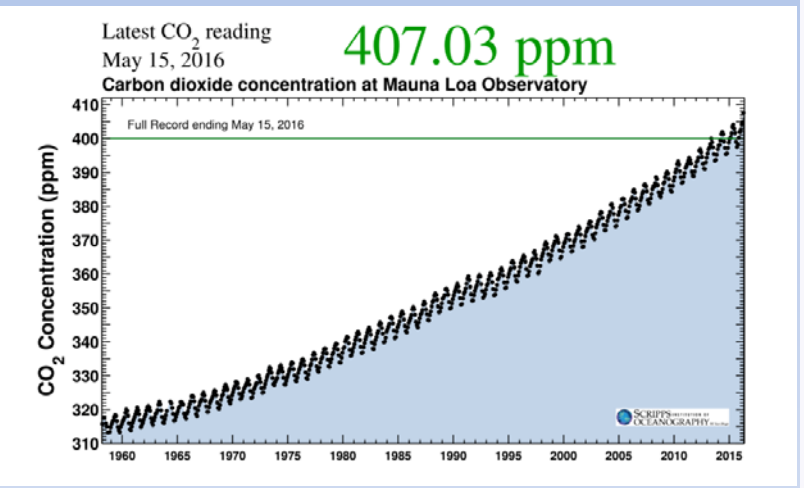


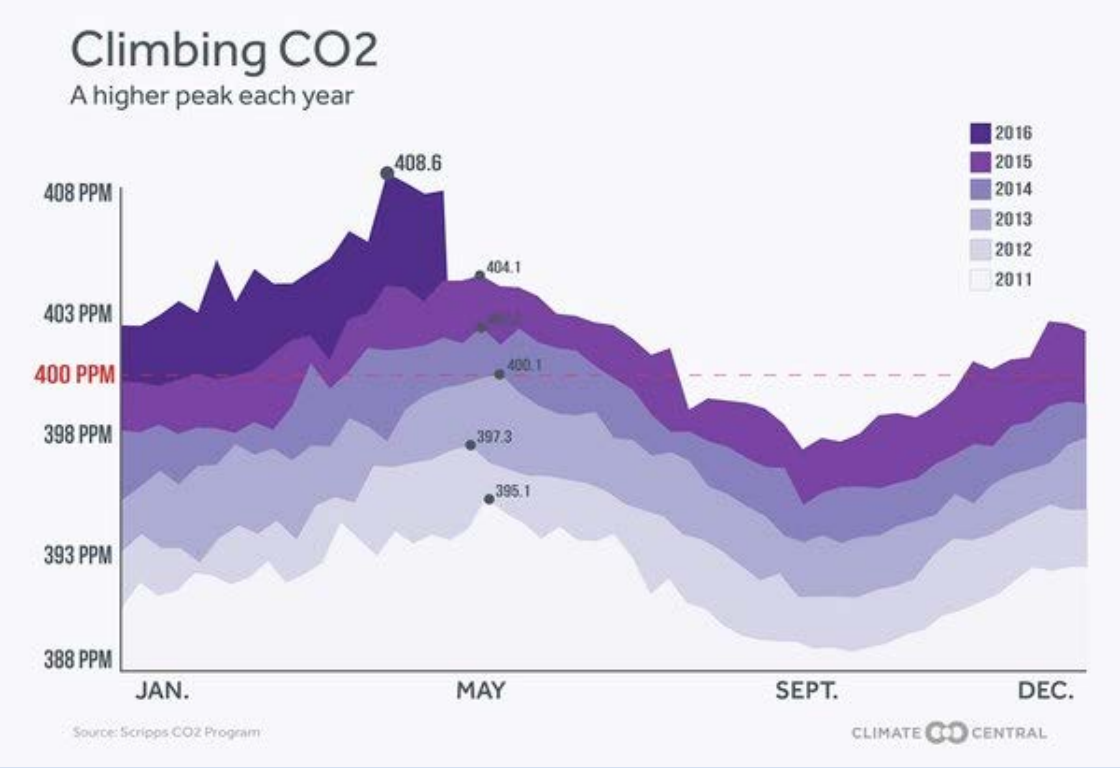
Outline

Welcome – Eric Reutebuch, AU Water Resources Center

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

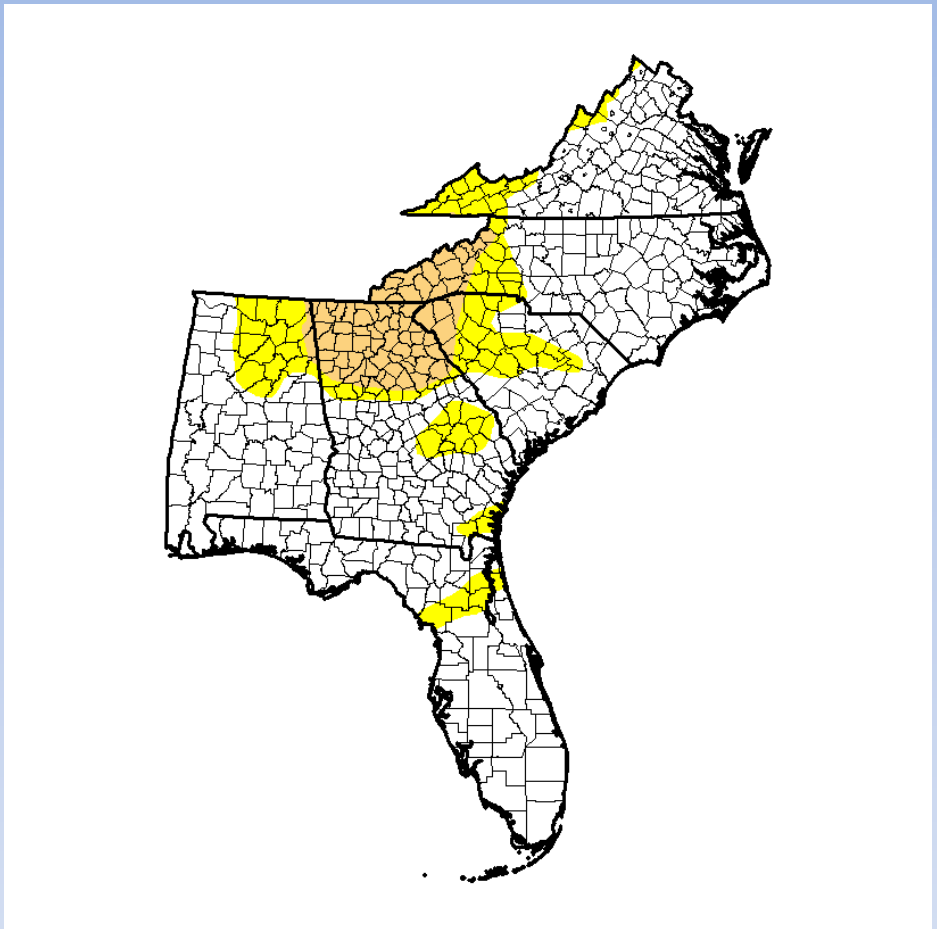
Global CO_2 Concentration





David Zierden

Current drought status

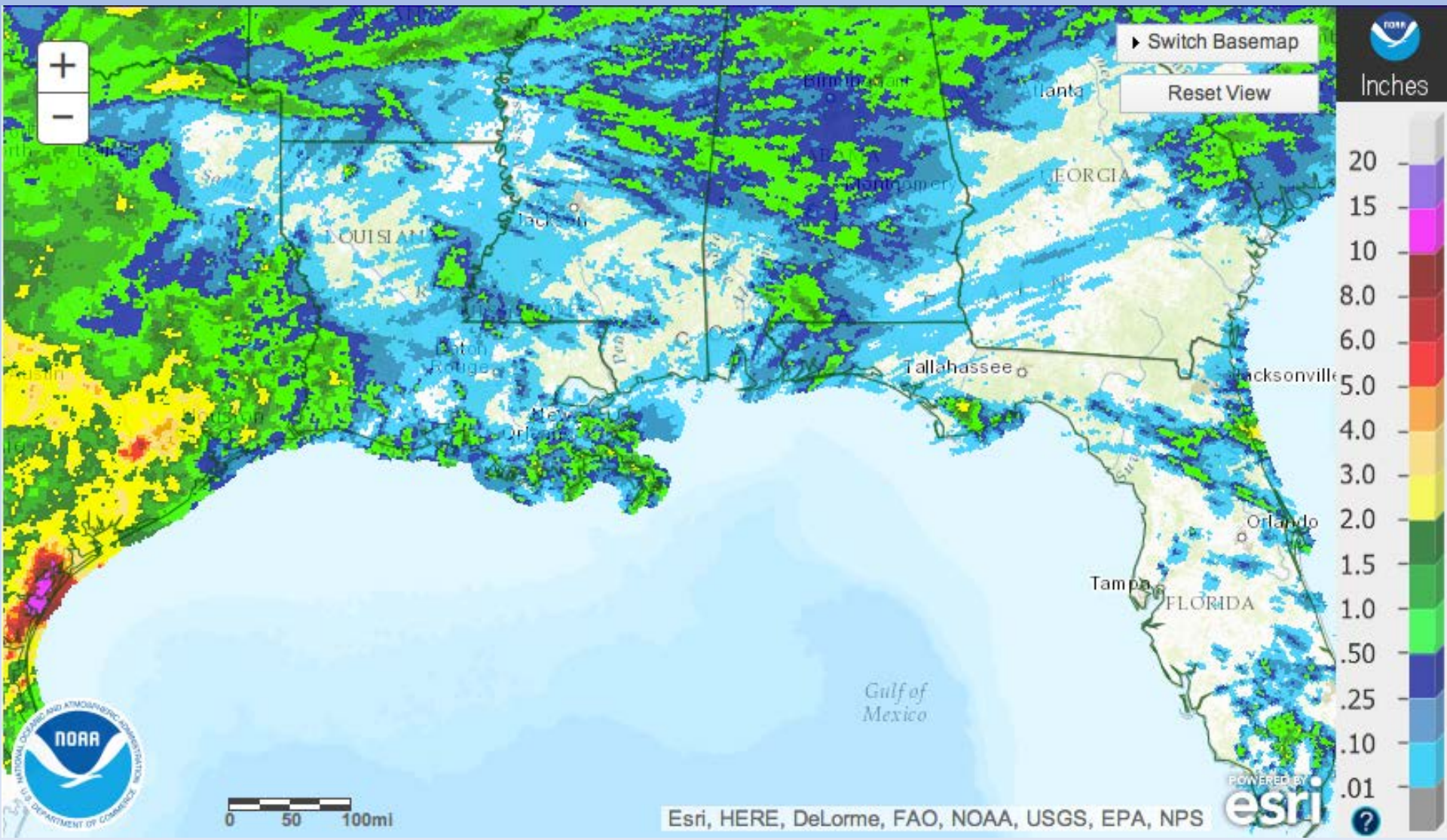


Intensity:

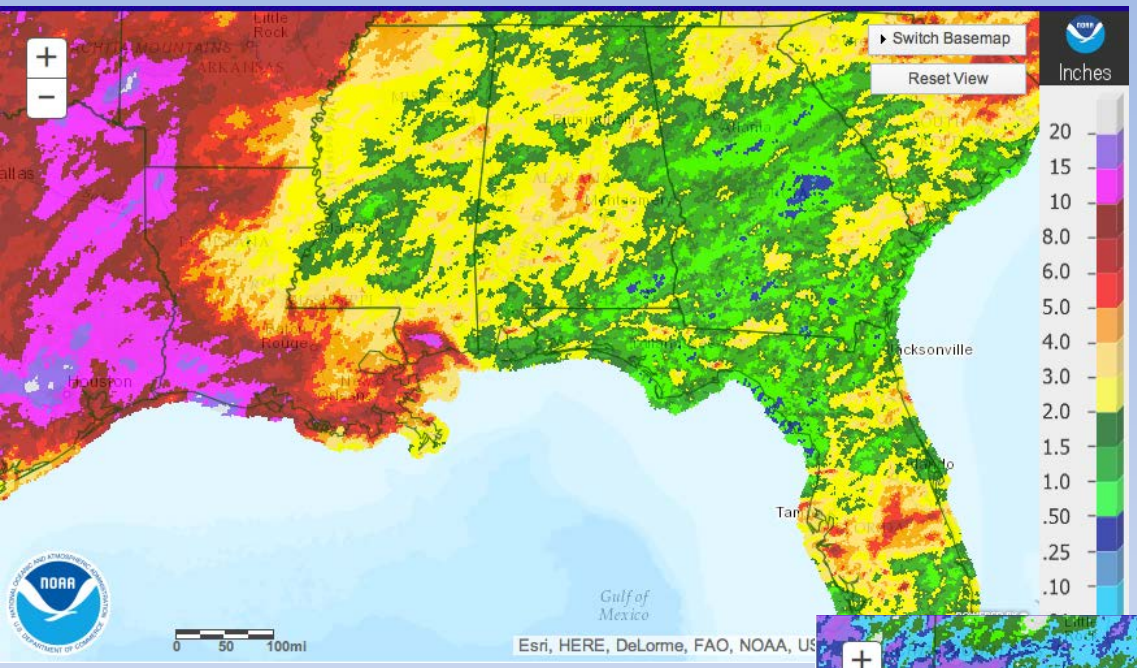
- D0 - Abnormally Dry
- D1 - Moderate Drought
- D2 - Severe Drought
- D3 - Extreme Drought
- D4 - Exceptional Drought

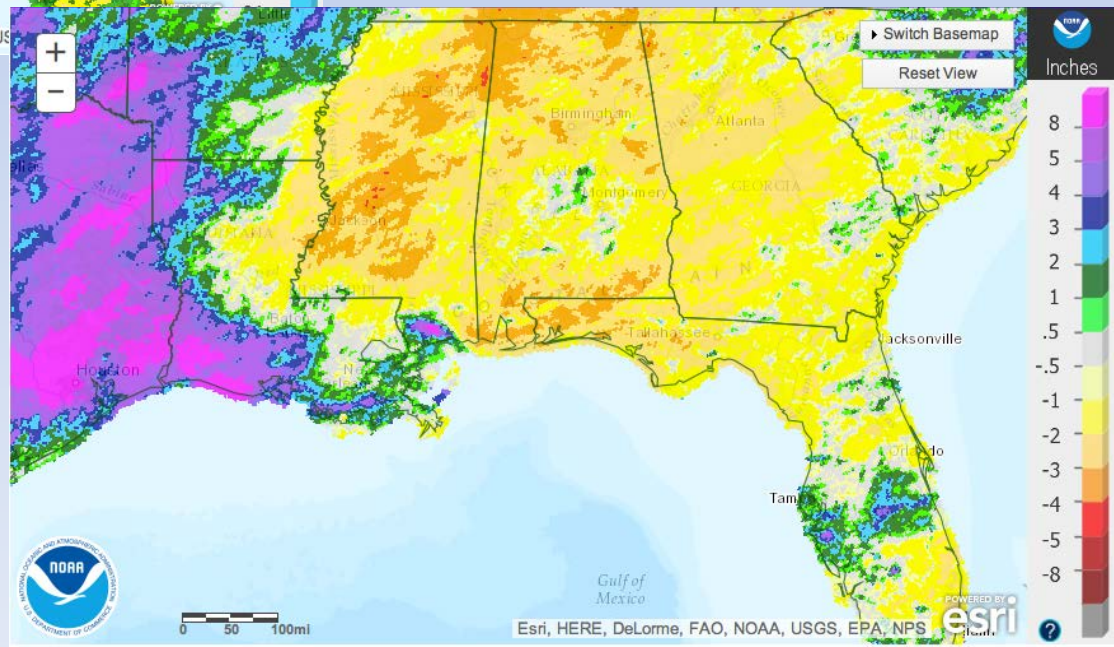
*The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying **text summary** for forecast statements.*

Rainfall – Last 7 Days

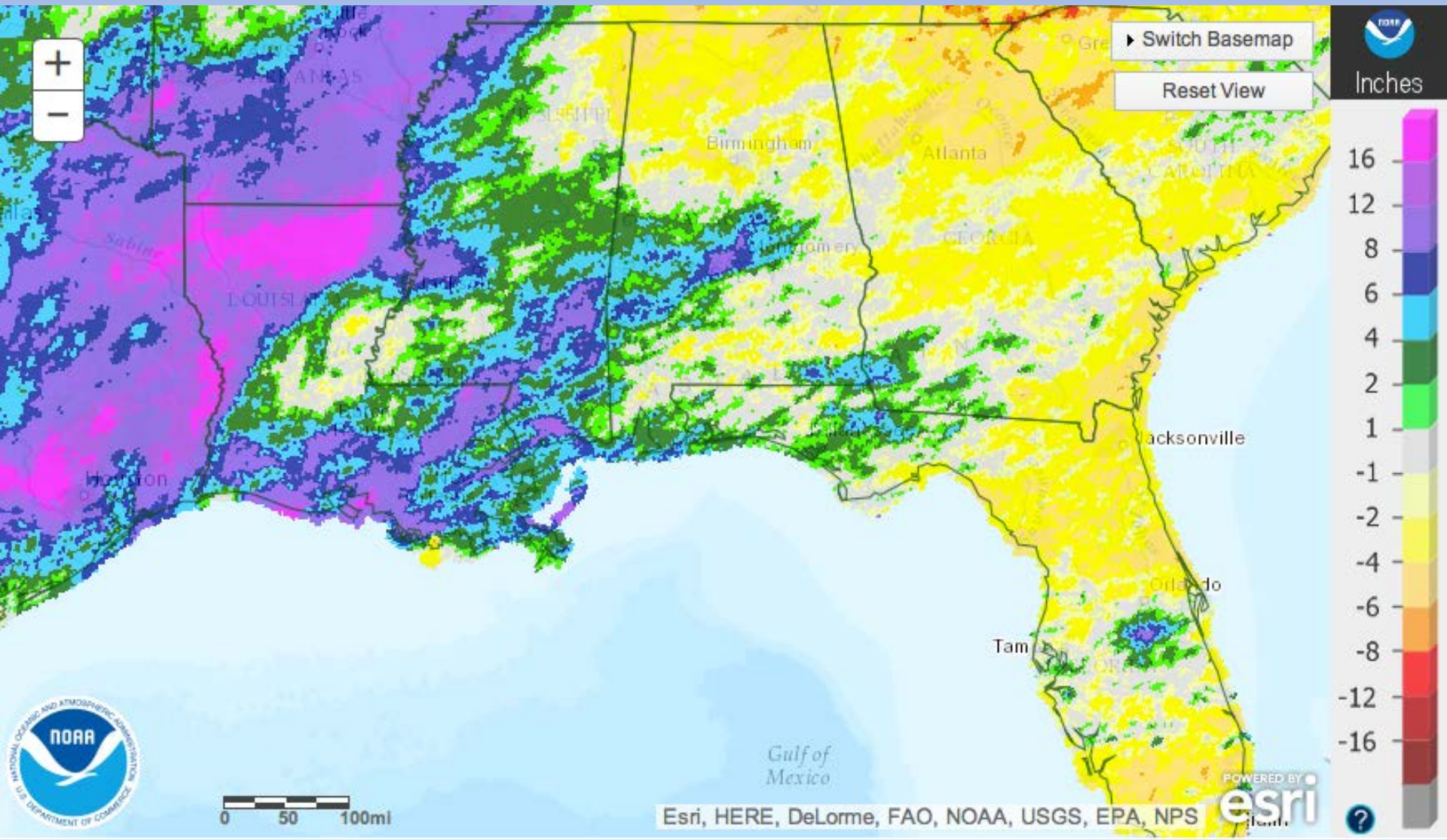


Rainfall – Last 30 Days

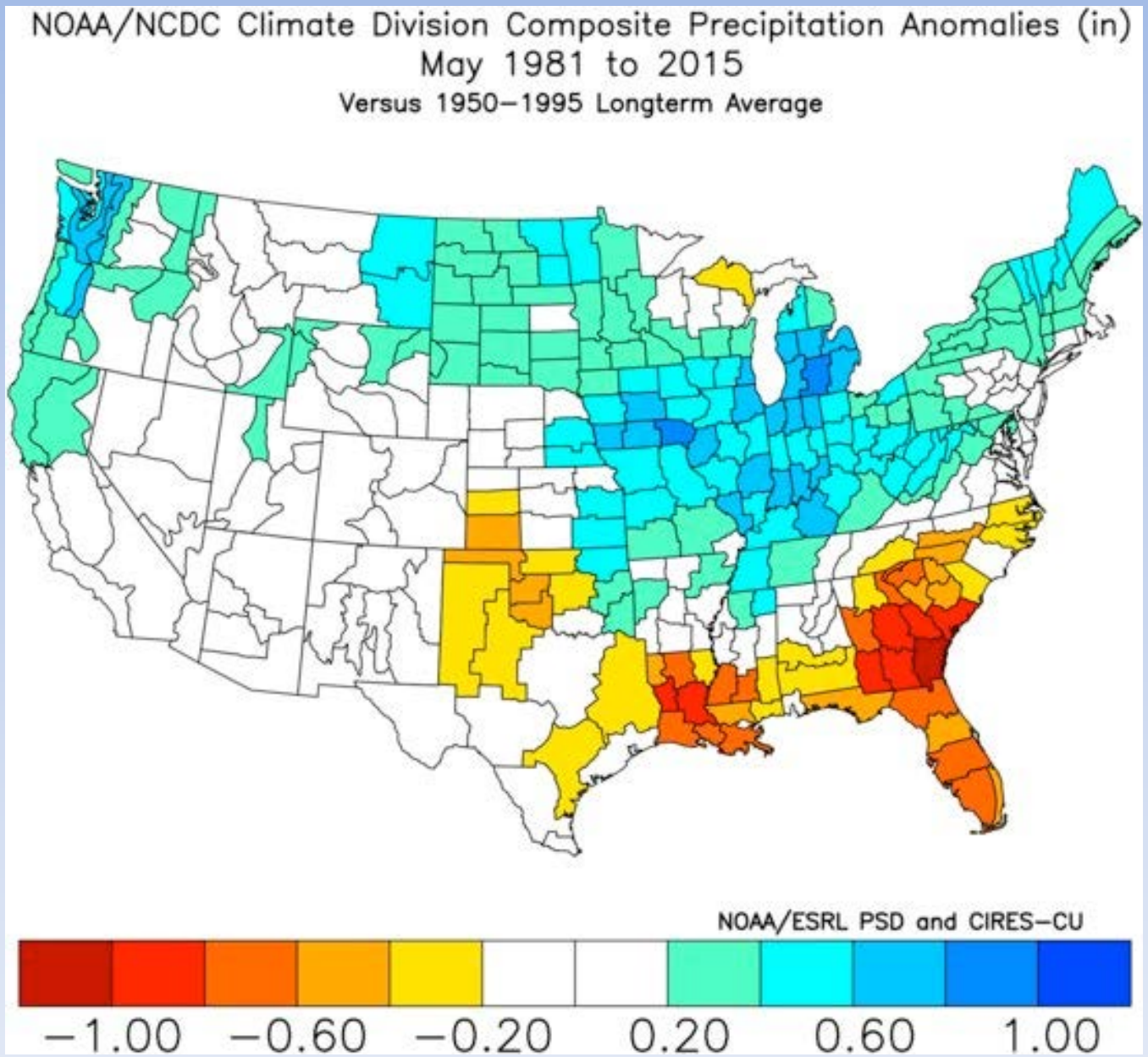




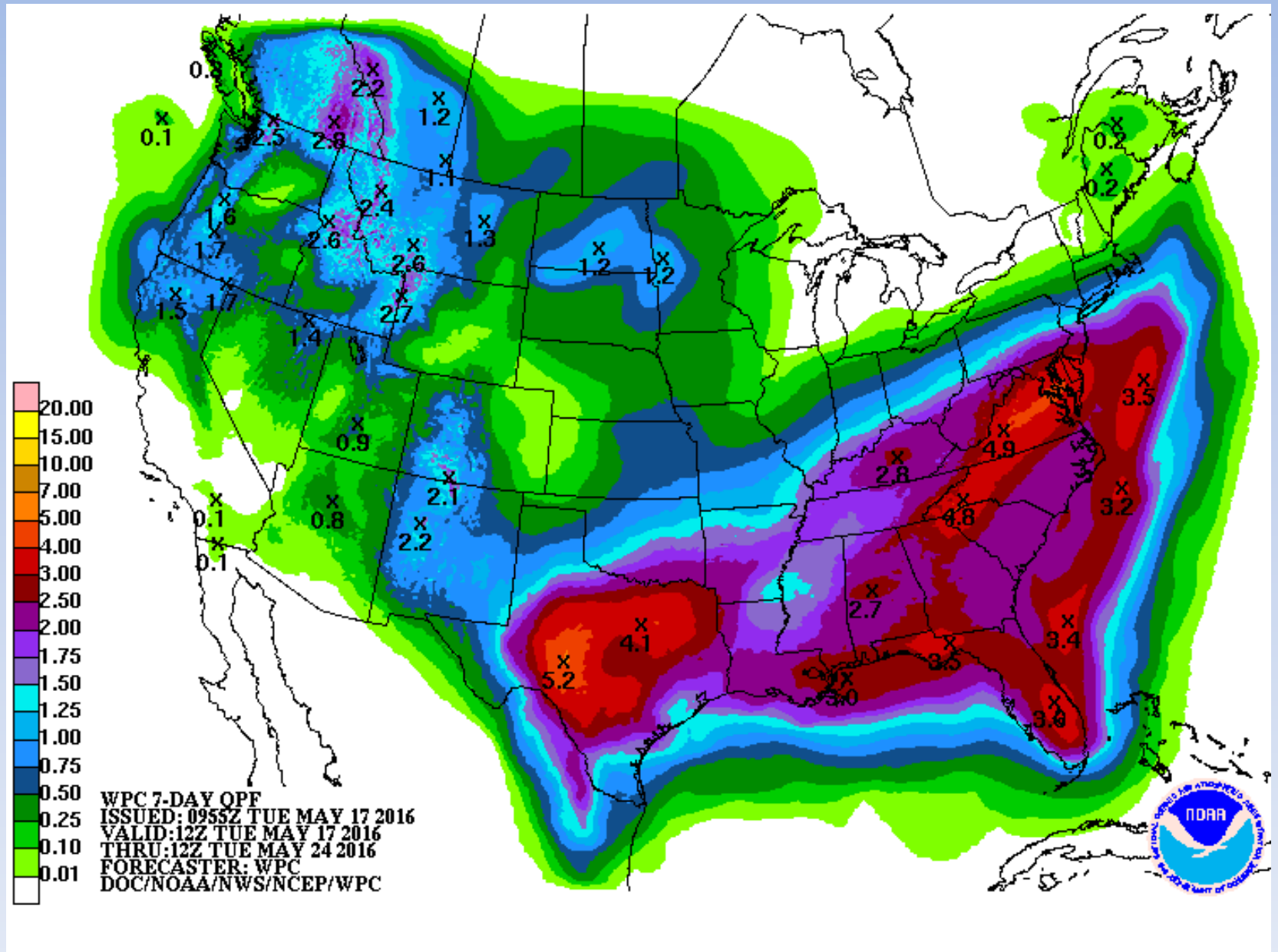
90-day Rainfall Departures



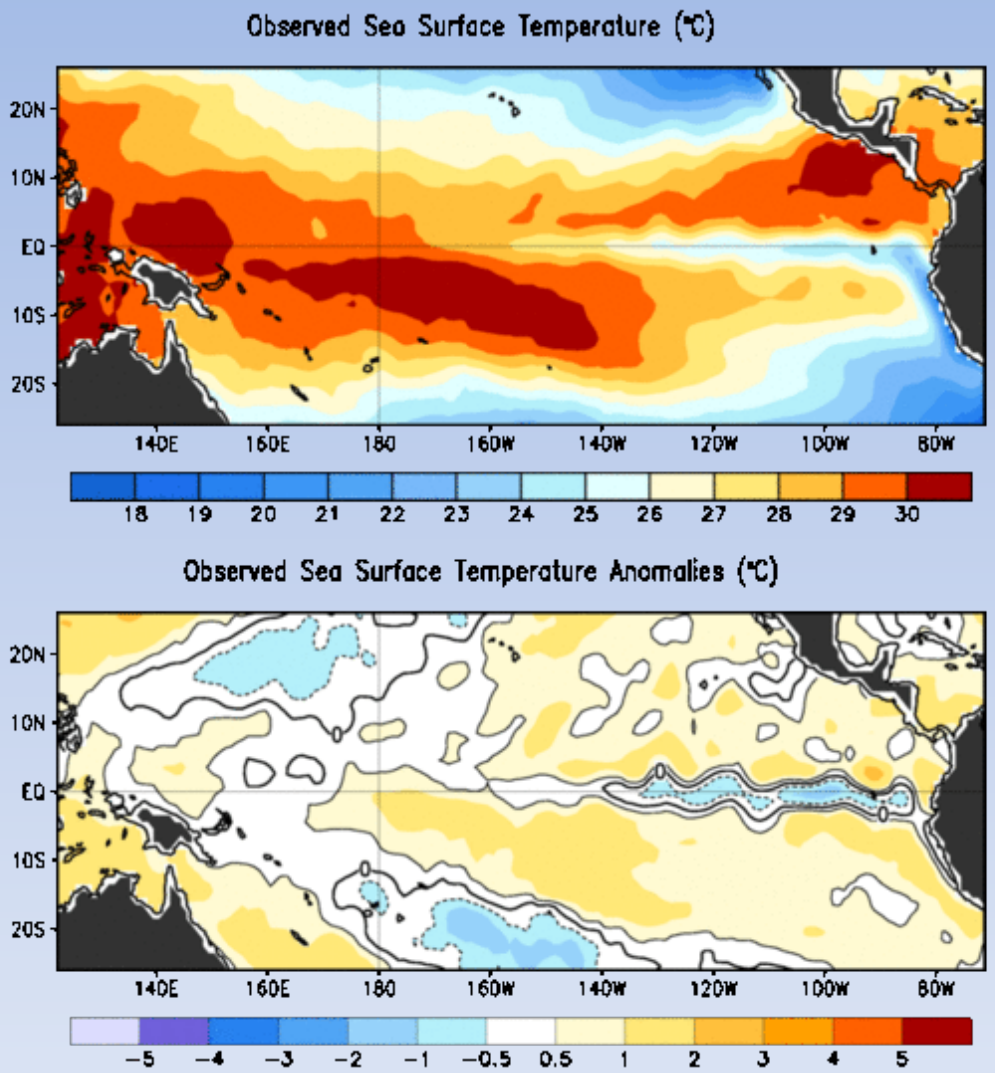
Changing May Rainfall Patterns



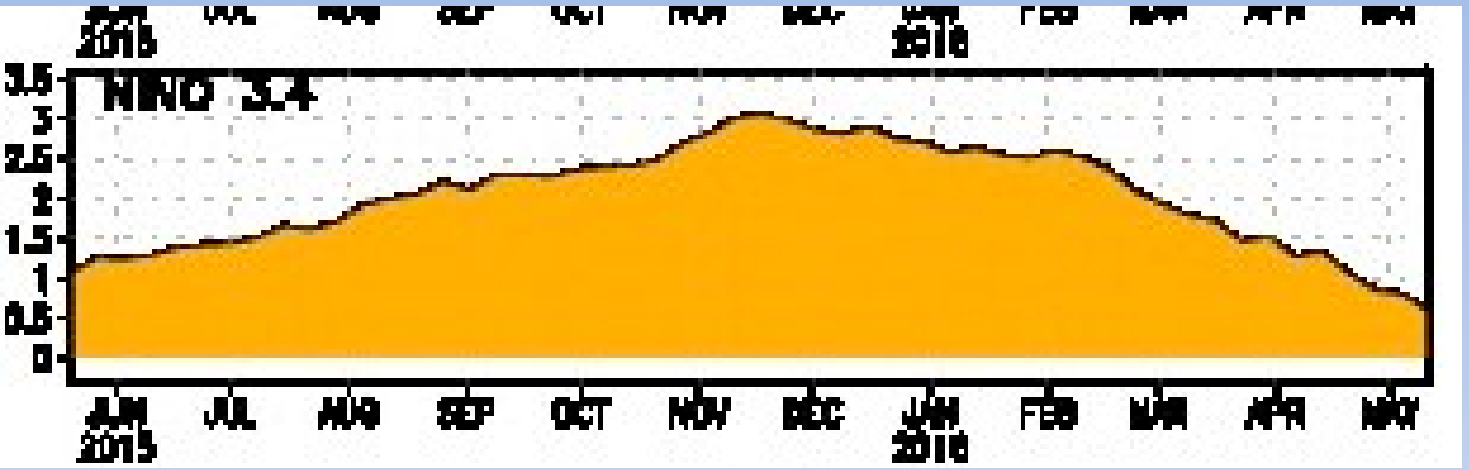
7-Day Precipitation Forecast

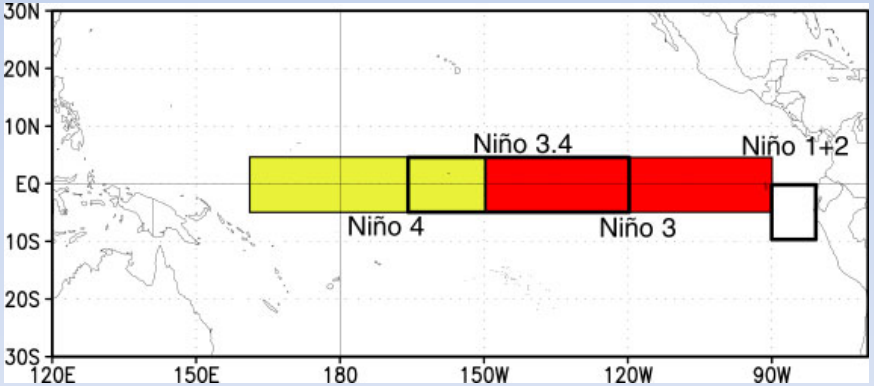


Current SST Anomalies



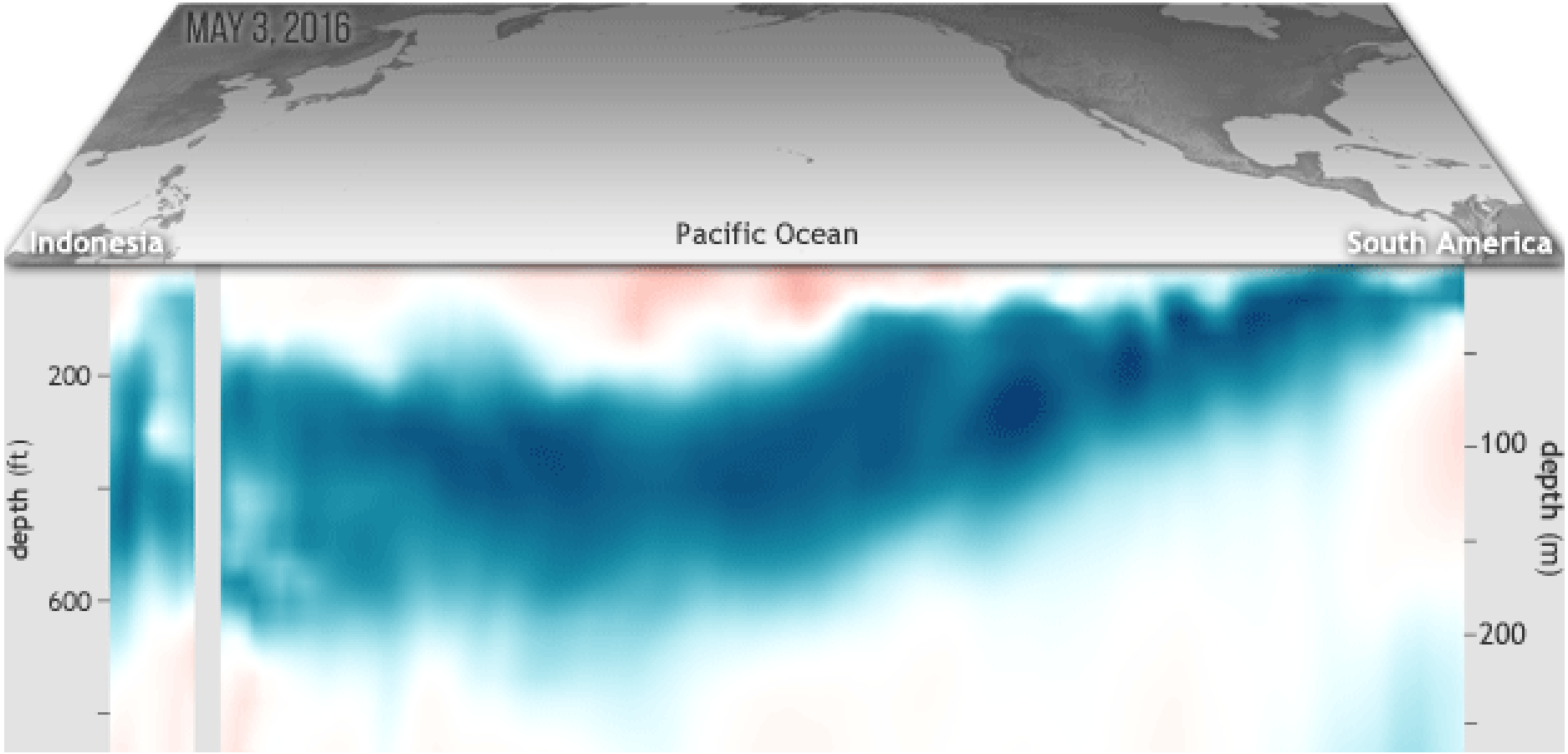
El Nino on the decline



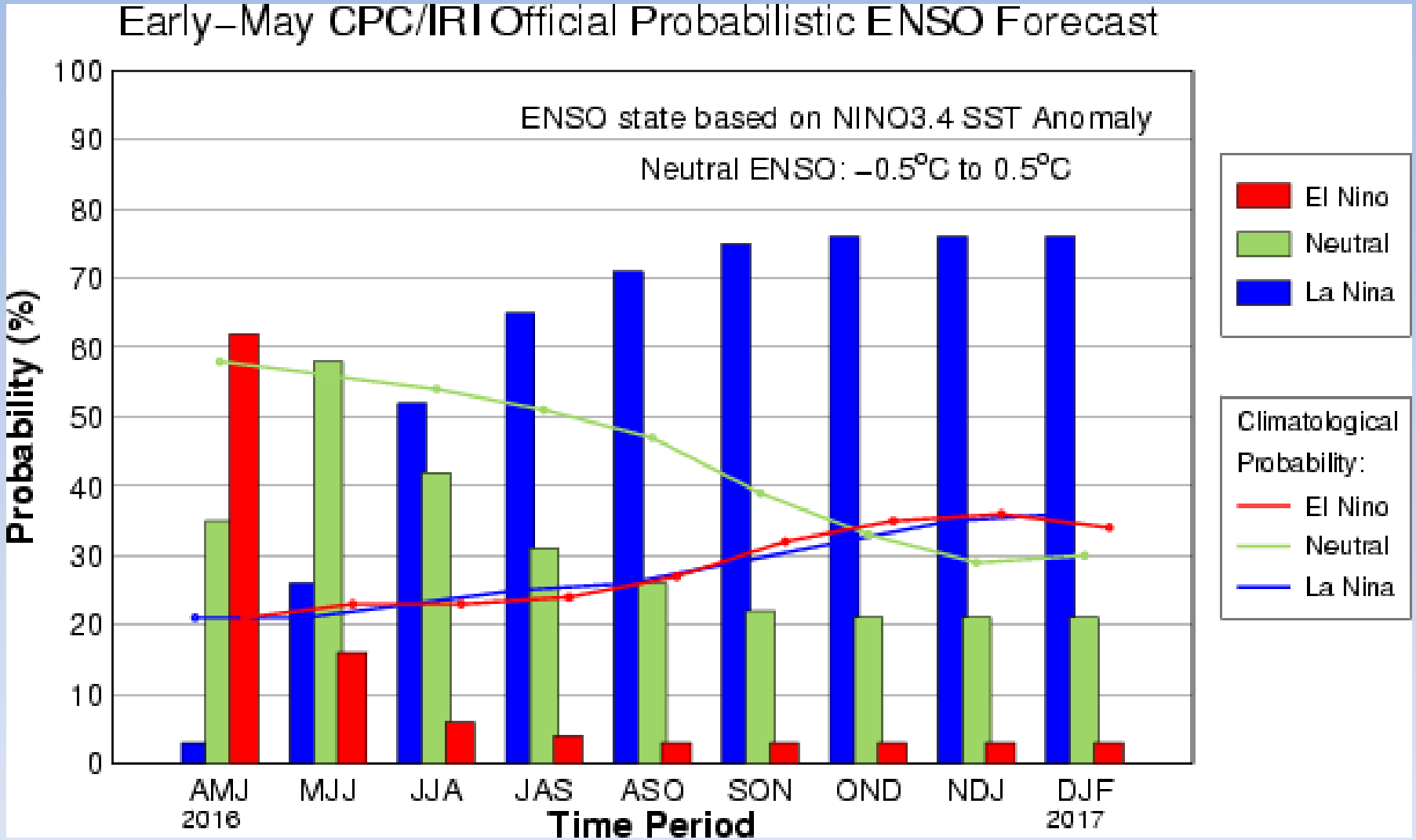


- Weekly Nino 3.4 index currently at +0.6
- Similar decline as 1998
- 1998 went negative (-0.6) by the first week of June

Subsurface Temperatures

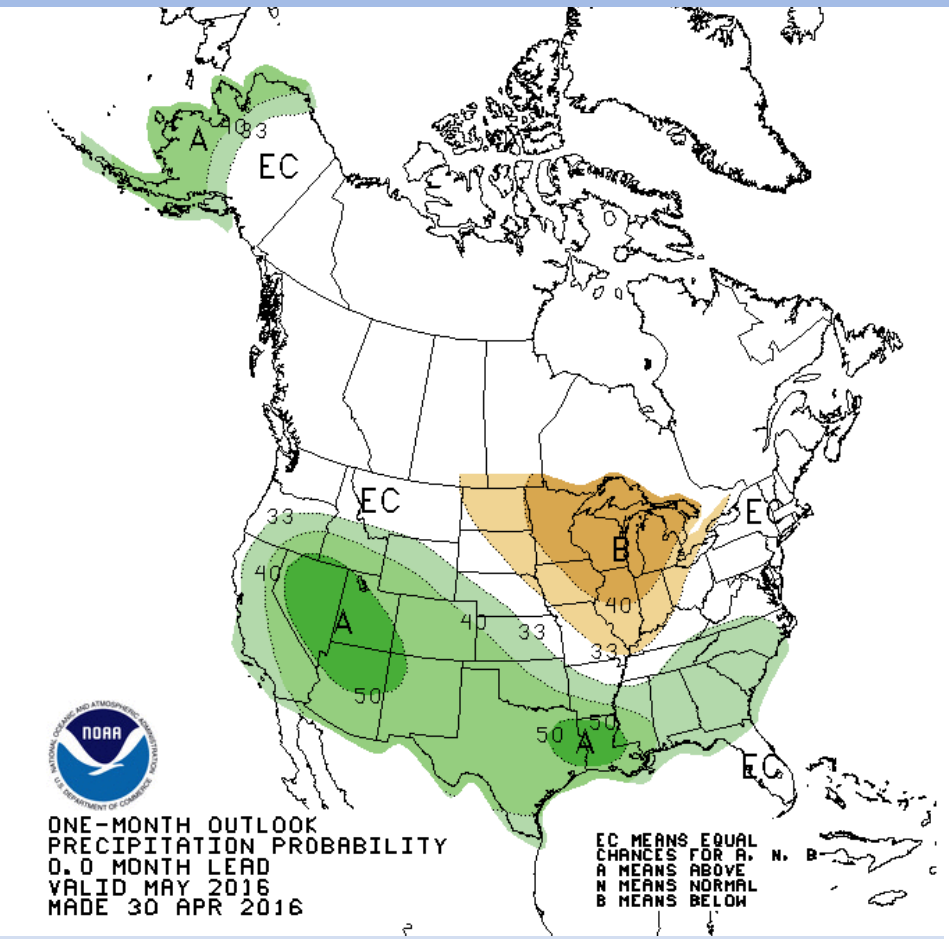


La Nina on the Way?

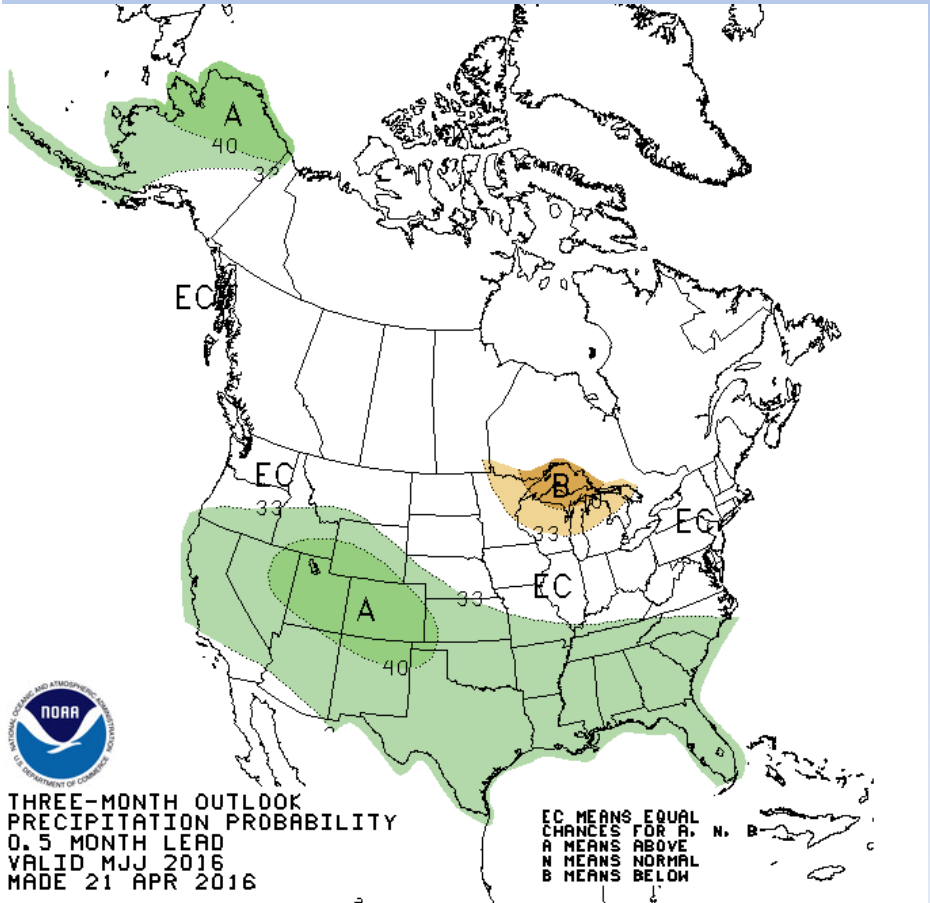


Official NOAA Outlook

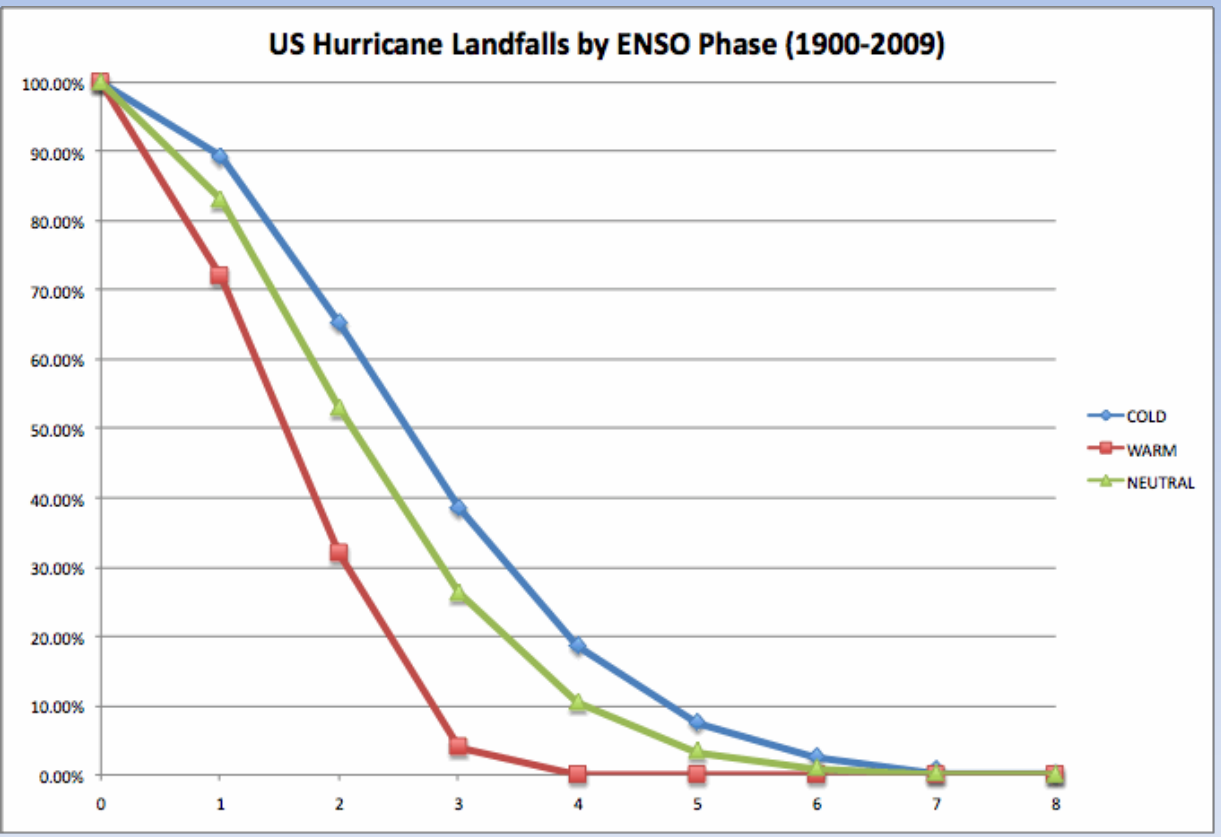
One Month



Three-month



Hurricane Season Forecast

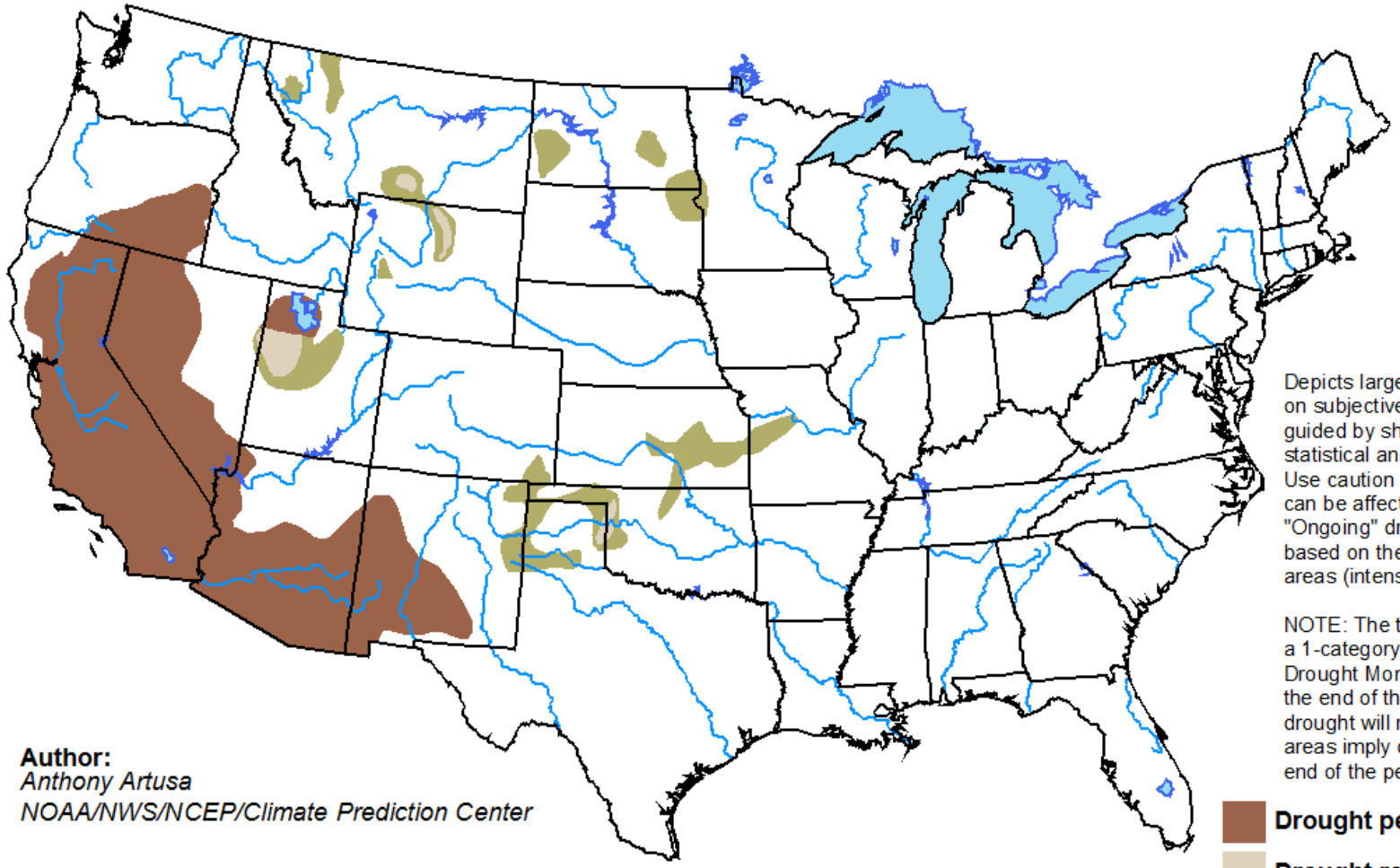


- CSU predicts 12 named storms, 5 hurricanes, and 2 major hurricanes
- NOAA forecast to be released May 27th
- 2 or more U.S. hurricane landfalls twice as likely during La Nina

U.S. Seasonal Drought Outlook

Drought Tendency During the Valid Period

Valid for April 21 - July 31, 2016
Released April 21, 2016



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).

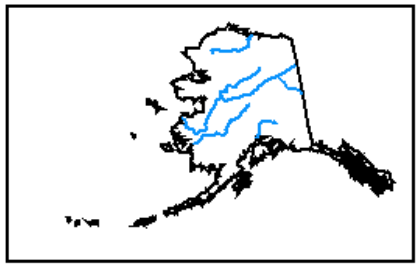
Drought persists

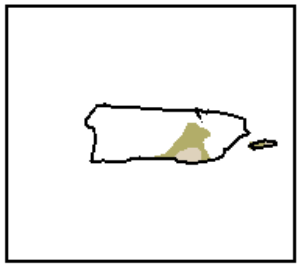
Drought remains but improves

Drought removal likely

Drought development likely

Author:
Anthony Artusa
NOAA/NWS/NCEP/Climate Prediction Center





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

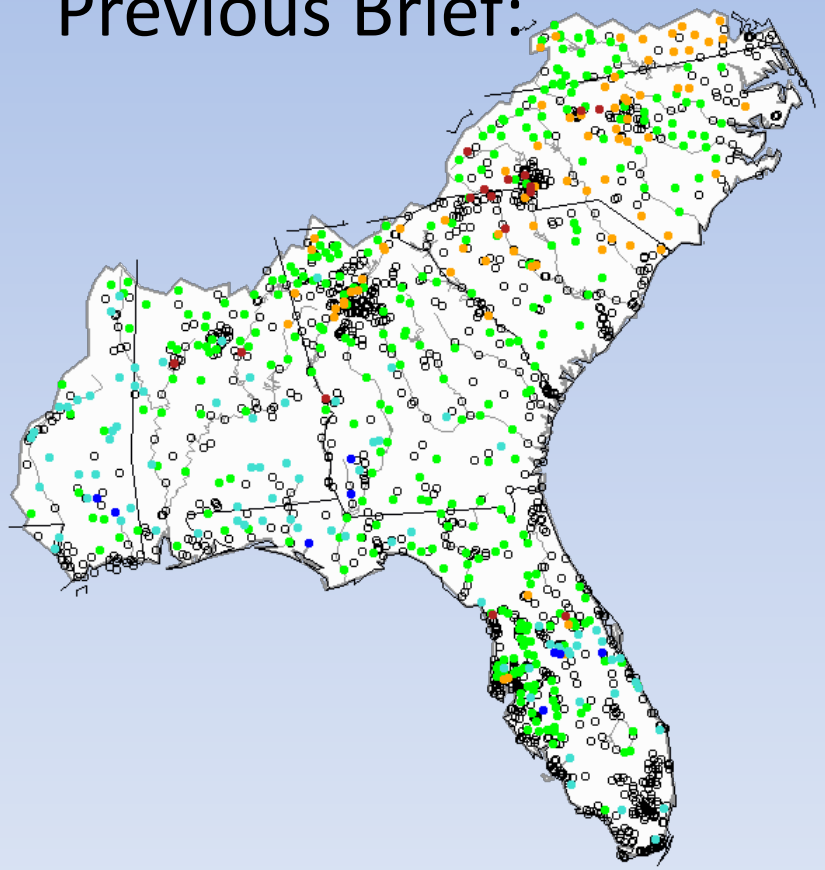
Streamflows and Groundwater

Tony Gotvald

Realtime stream flow compared with historical monthly averages

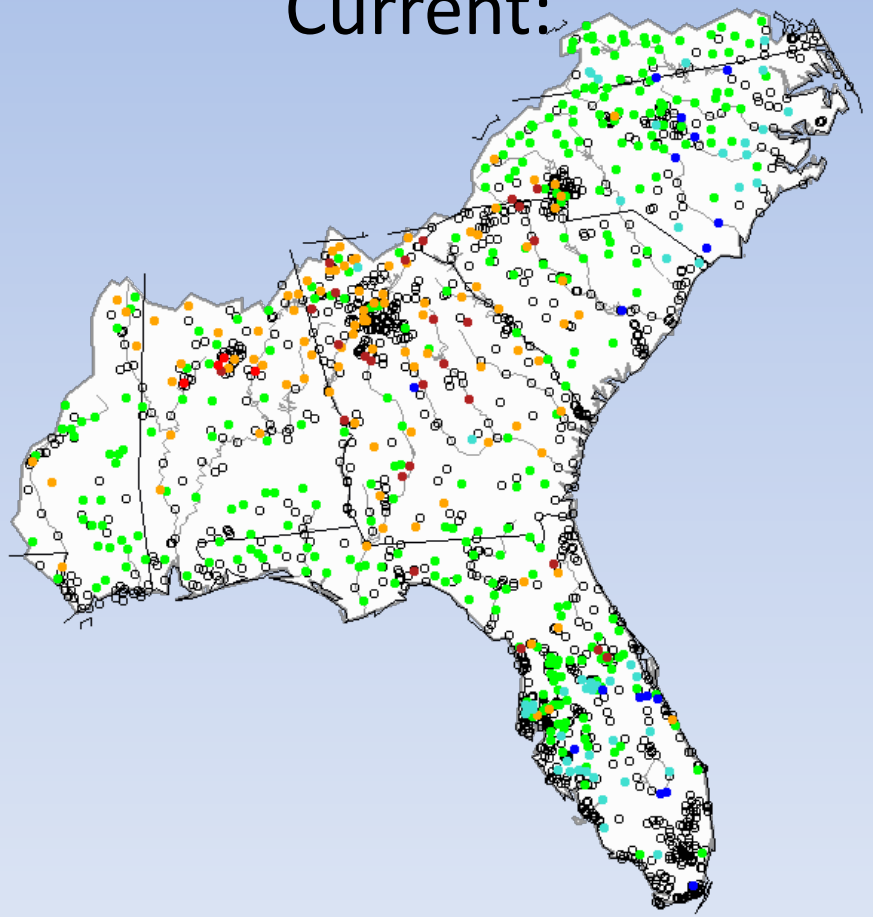
Monday, April 18, 2016 08:30ET

Previous Brief:



Monday, May 16, 2016 14:30ET

Current:



USGS

Explanation - Percentile classes

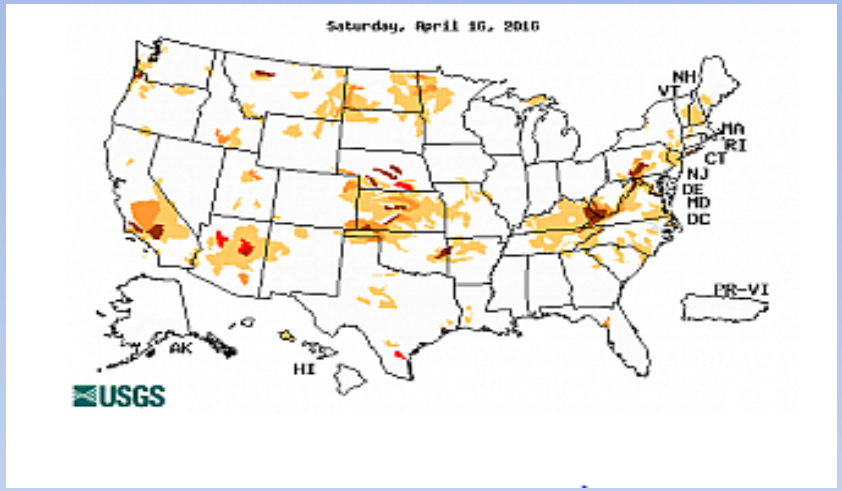
Low	<10 Much below normal	10-24 Below normal	25-75 Normal	76-90 Above normal	>90 Much above normal	High

USGS

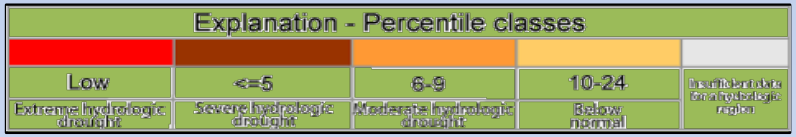
http://waterwatch.usgs.gov

Below Normal 7-day Average Streamflows

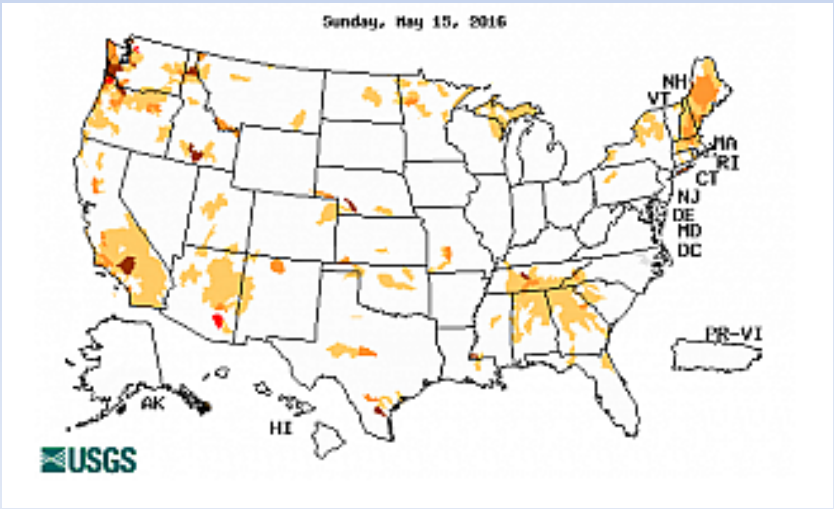
Previous brief:



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



Current:



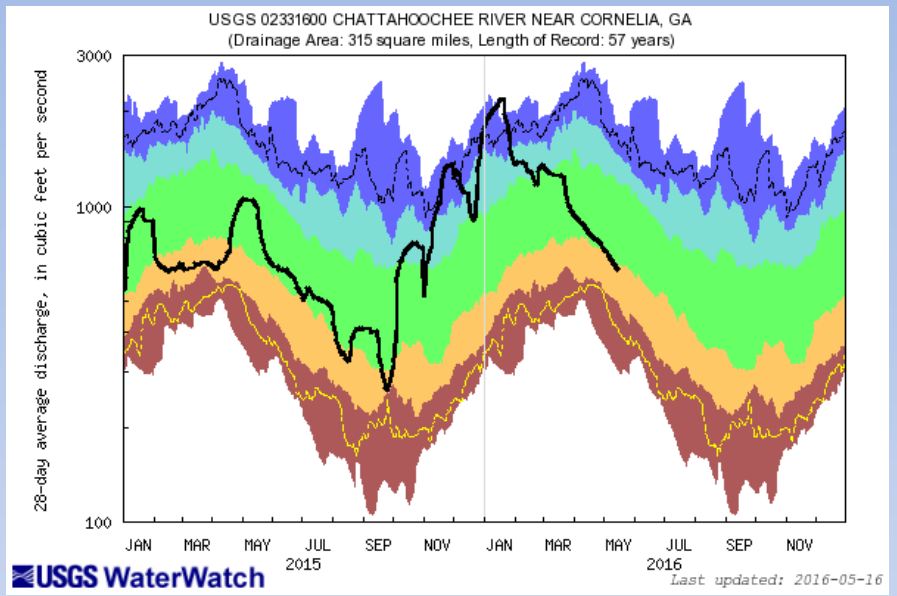
http://waterwatch.usgs.gov

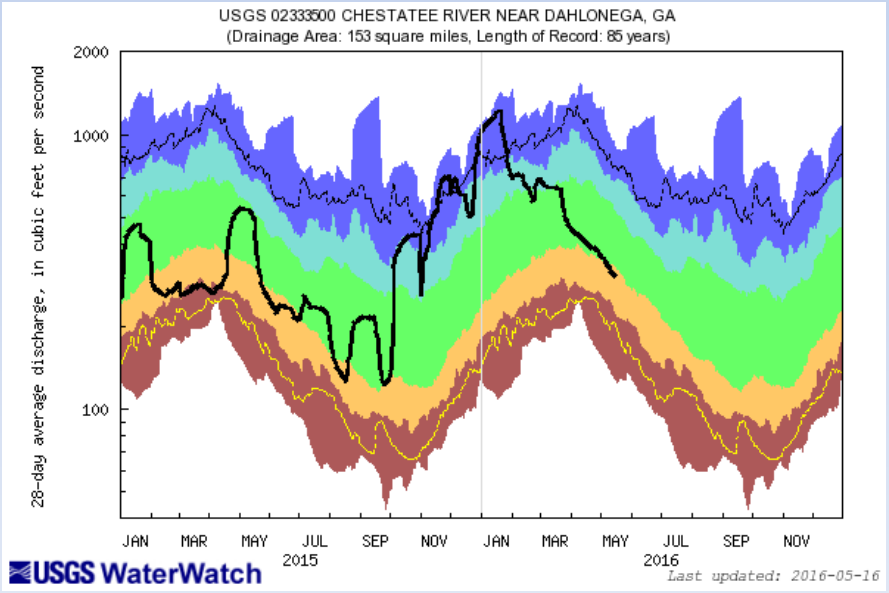
Lake Lanier Inflows

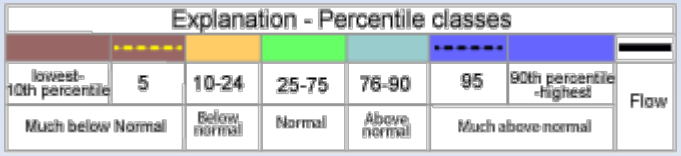
Chattahoochee near Cornelia (02331600)

http://waterwatch.usgs.gov

Chestatee near Dahlonega (02333500)





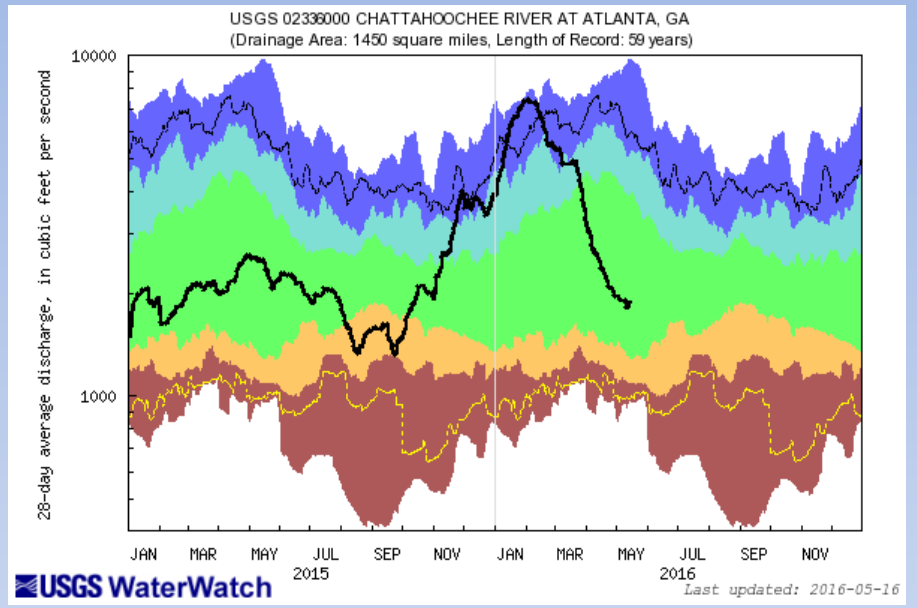


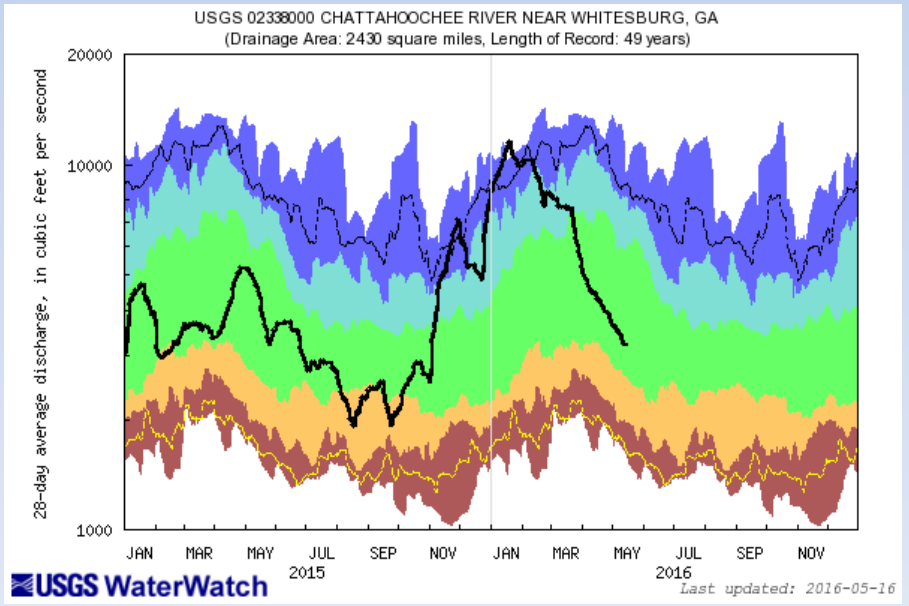
Current Streamflows

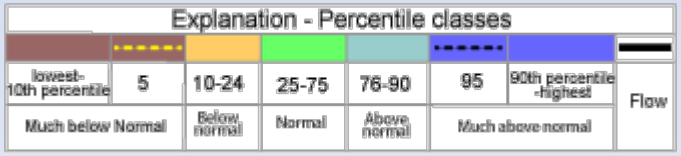
Chattahoochee at Atlanta (02336000)

http://waterwatch.usgs.gov

Chattahoochee near Whitesburg (02338000)

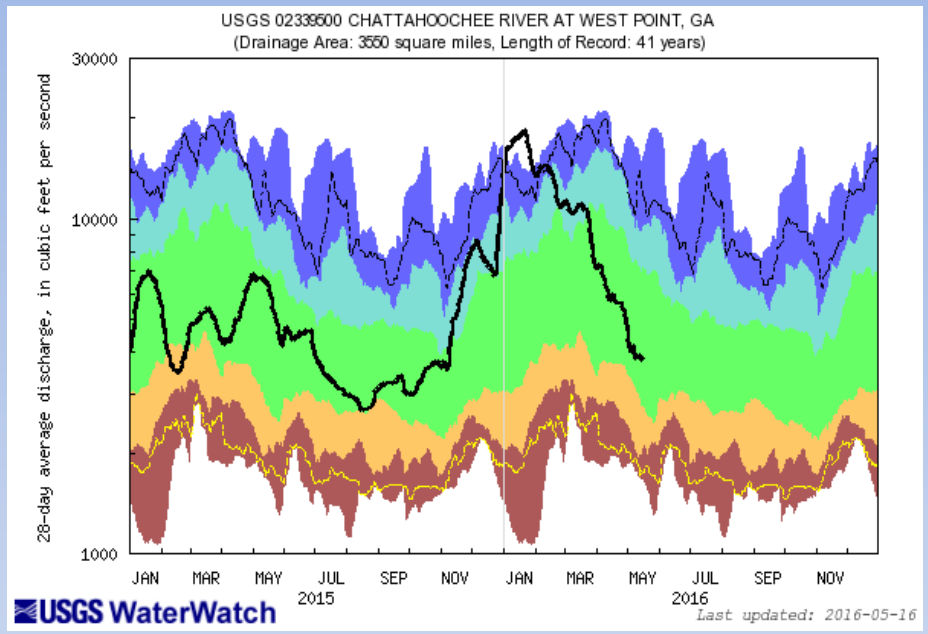






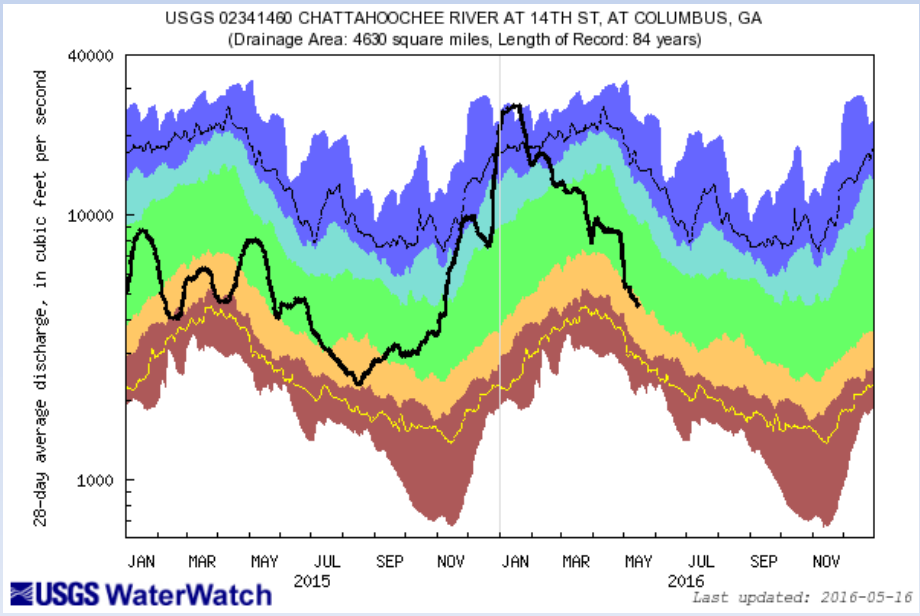
Current Streamflows

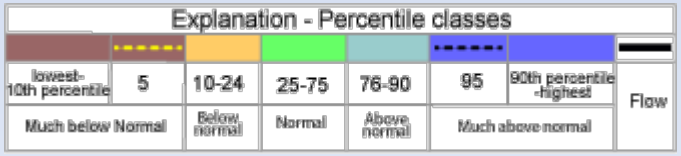
Chattahoochee at West Point (02339500)



http://waterwatch.usgs.gov

Chattahoochee at Columbus(02341460)



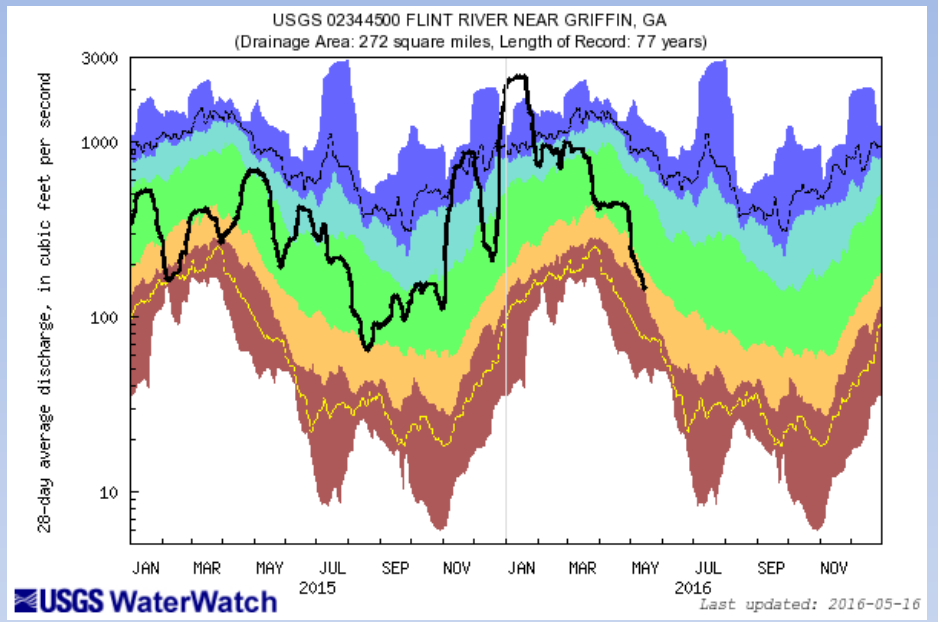


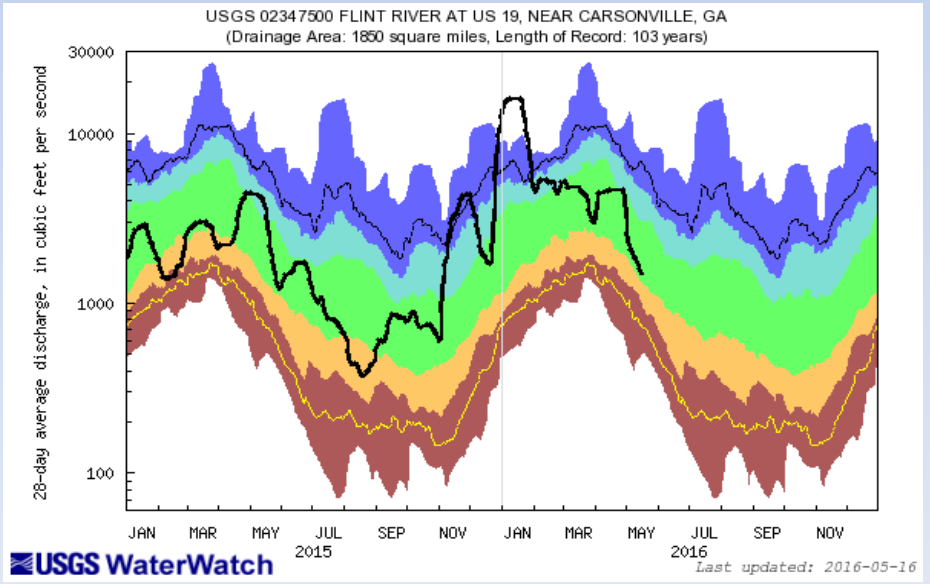
Current Streamflows

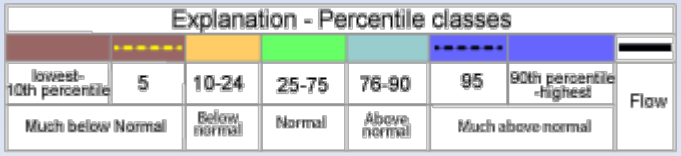
Flint River near Griffin (02344500)

http://waterwatch.usgs.gov

Flint River near Carsonville (02347500)



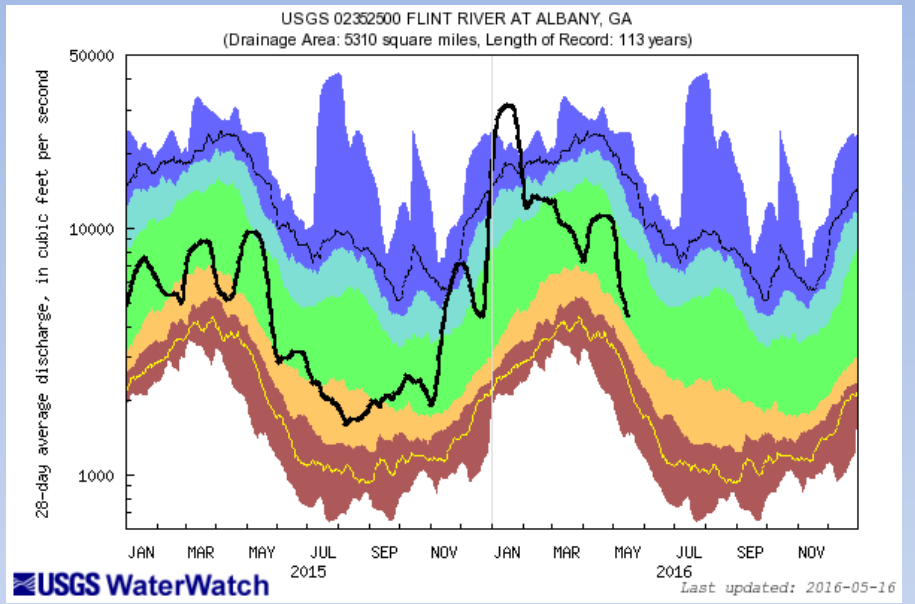




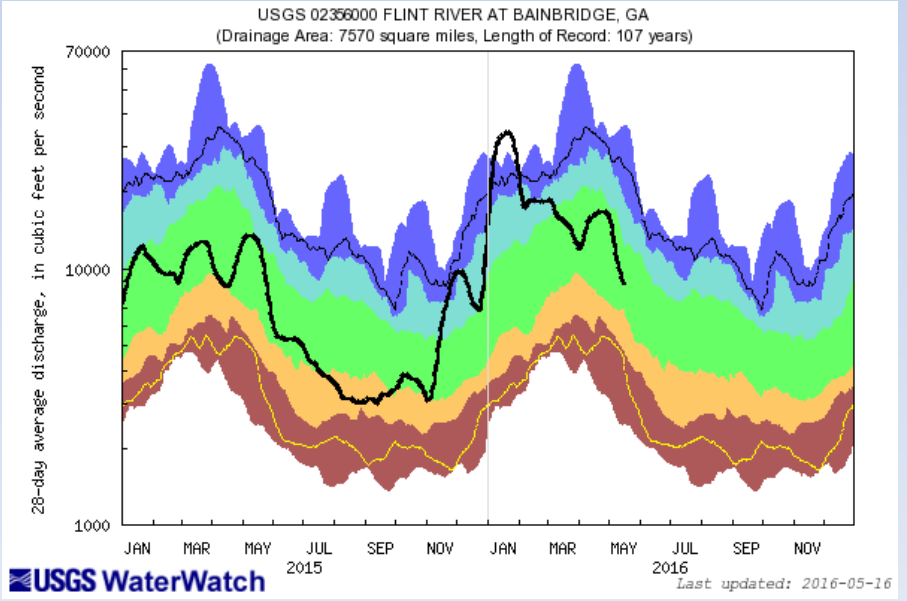
Current Streamflows

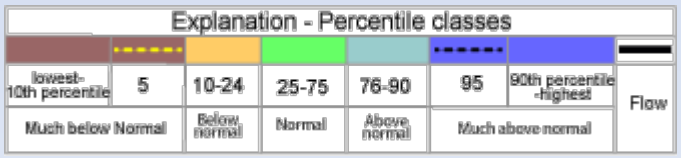
Flint River at Albany (02352500)

http://waterwatch.usgs.gov



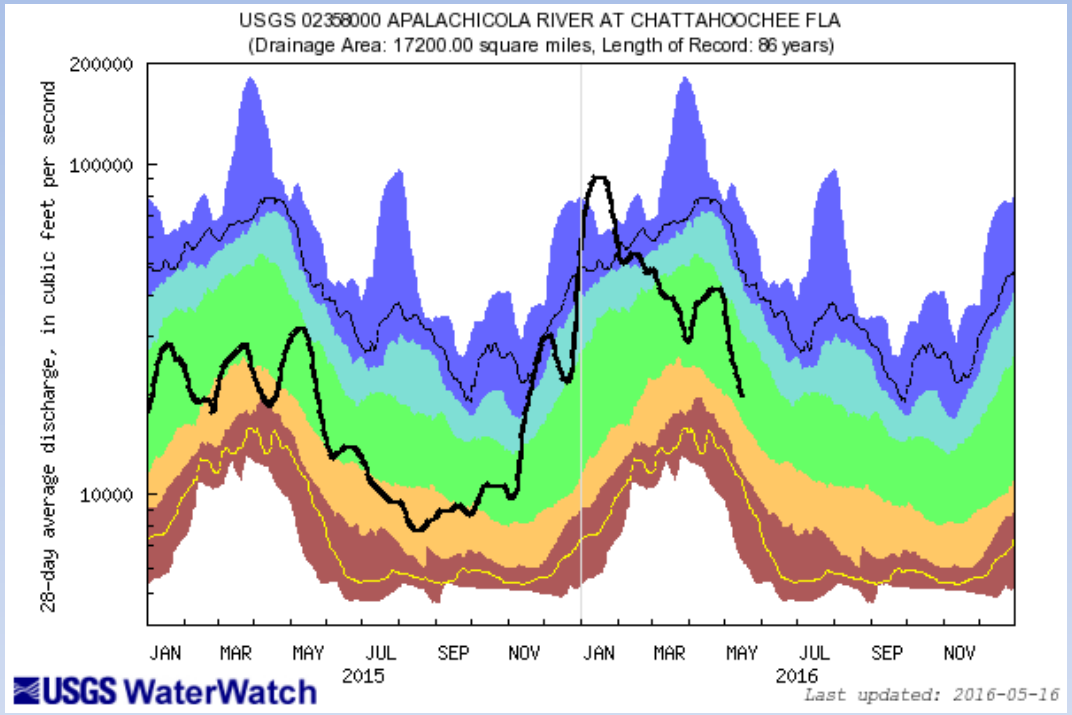
Flint at Bainbridge (02356000)

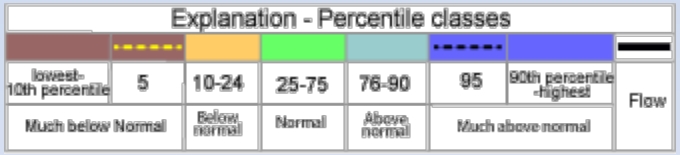




Streamflows

Apalachicola at Chattahoochee (02358000)

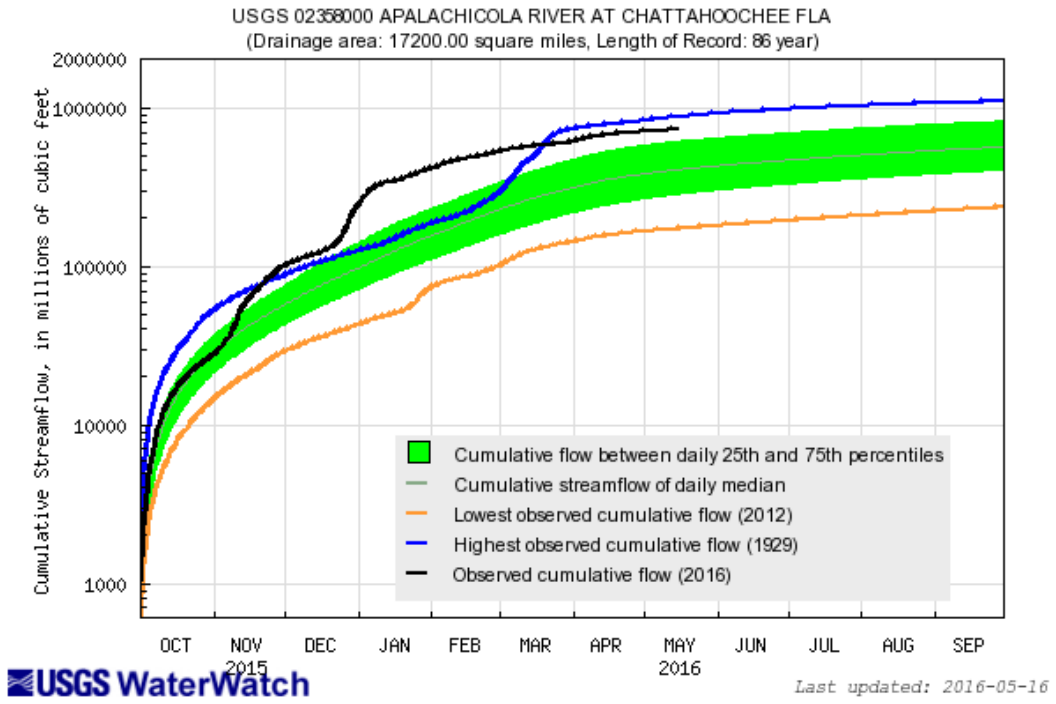




http://waterwatch.usgs.gov

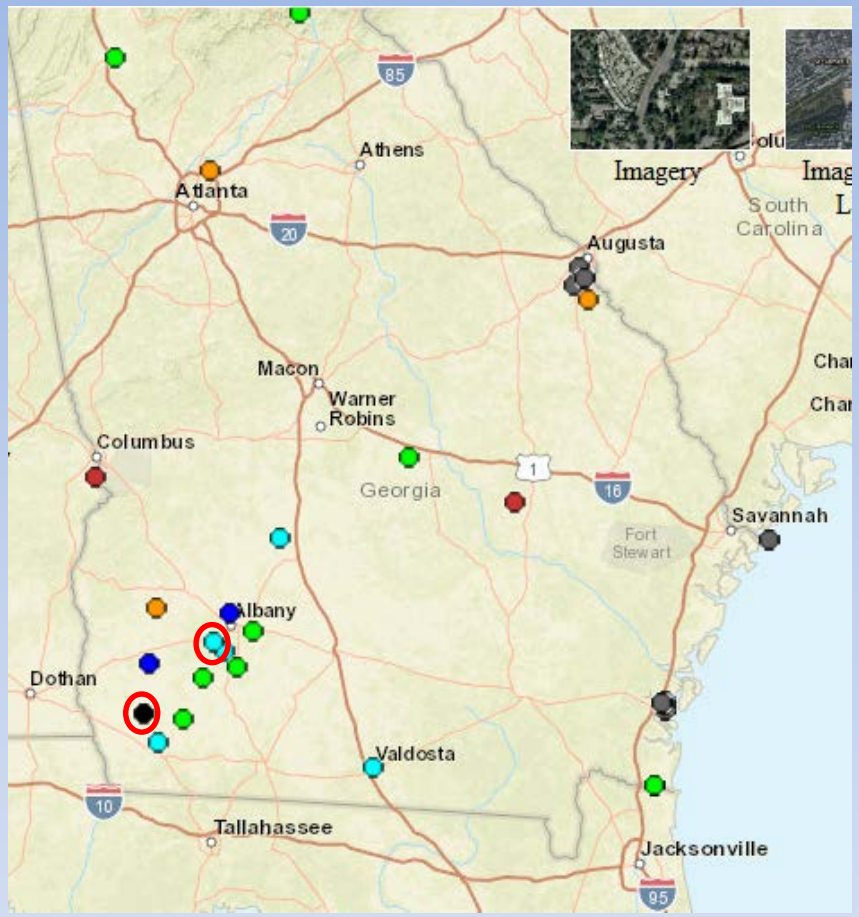
Streamflows

Apalachicola at Chattahoochee (02358000)

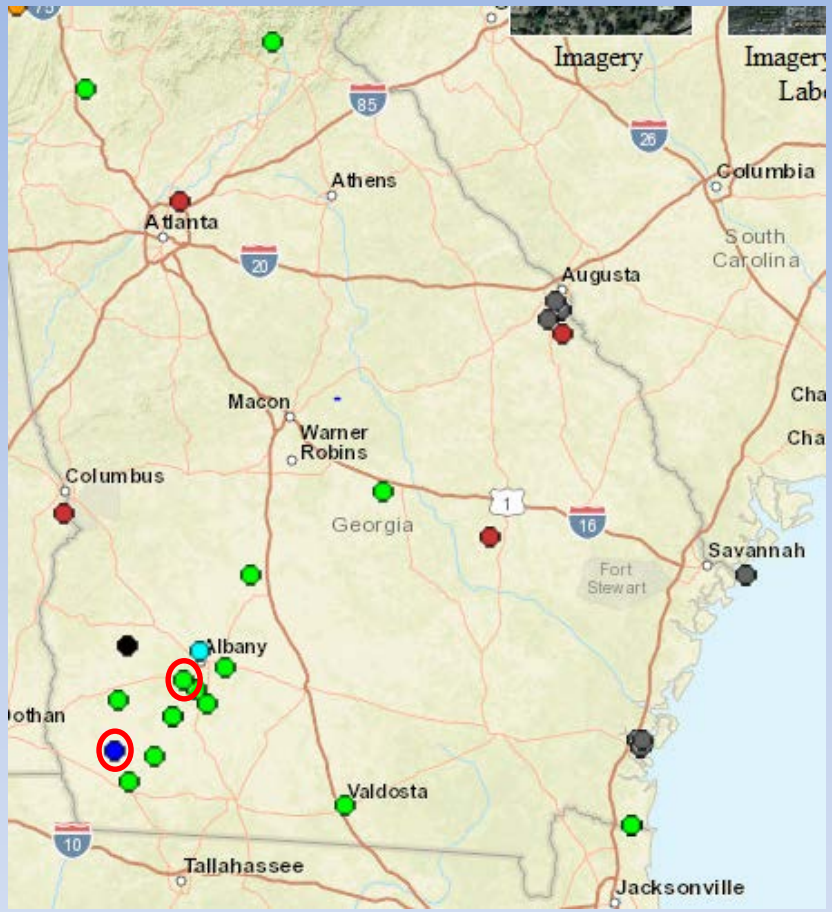


http://waterwatch.usgs.gov

Groundwater Conditions



Previous brief



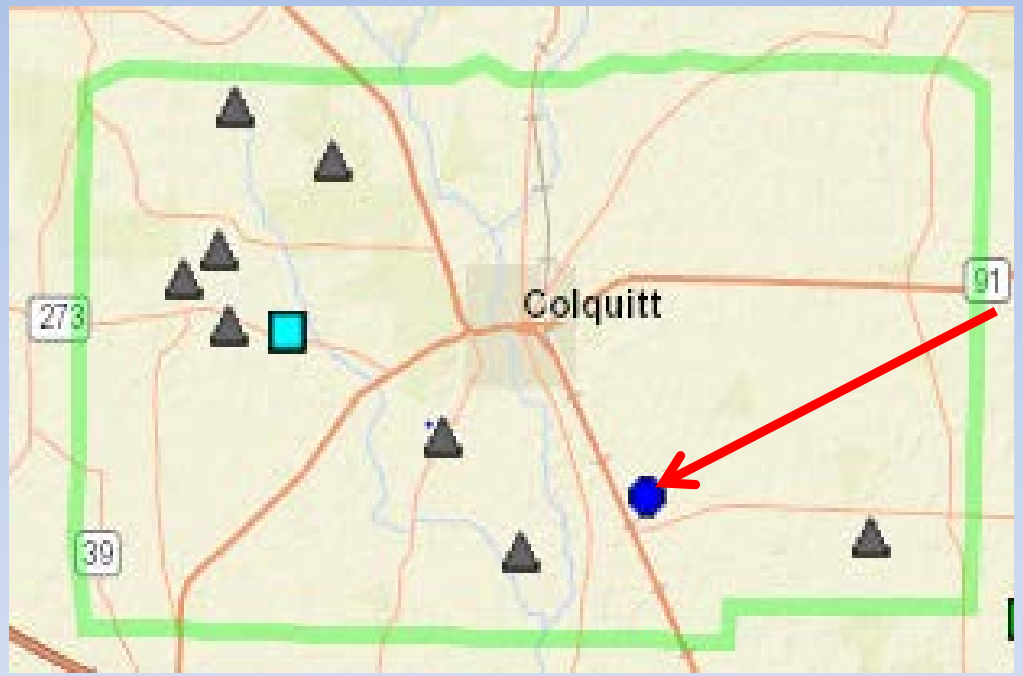
Current brief

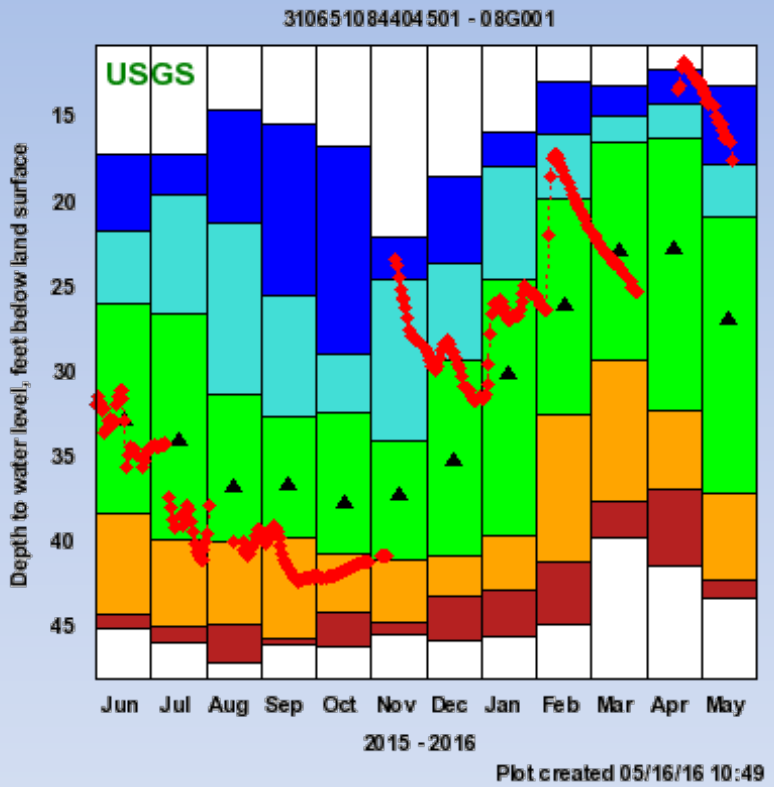
Explanation - Percentile classes (symbol color based on most recent measurement)							
Low	<10 Much Below Normal	10-24 Below Normal	25-75 Normal	76-90 Above Normal	>90 Much Above Normal	High	Not Ranked

Wells	Springs
Real-Time	
Continuous	
Periodic Measurements	

http://groundwaterwatch.usgs.gov

Groundwater Status – Miller County 08G001



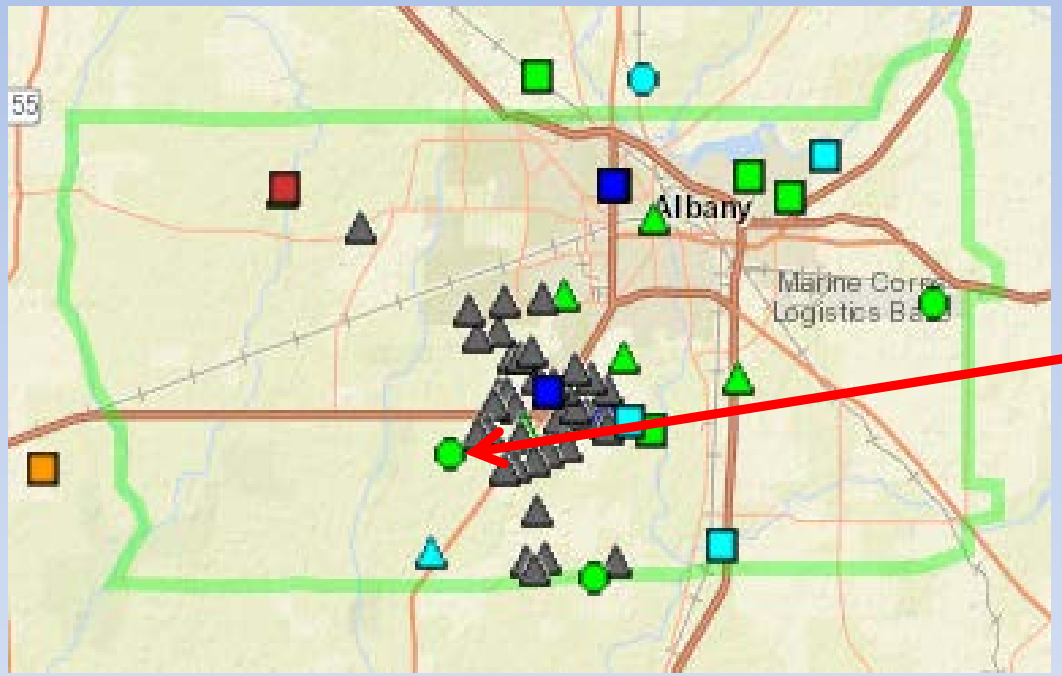


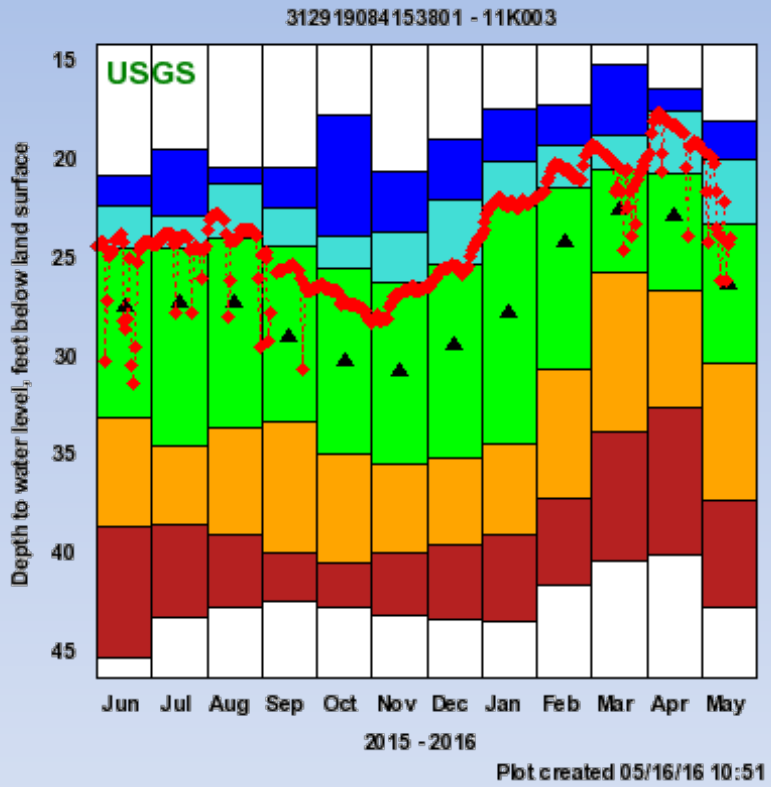
Explanation - Percentile classes (symbol color based on most recent measurement)							
Low	<10 Much Below Normal	10-24 Below Normal	25-75 Normal	76-90 Above Normal	>90 Much Above Normal	High	Not Ranked

Wells	Springs
Real-Time	
Continuous	
Periodic Measurements	

(Upper Floridan Aquifer)

Groundwater Status – Dougherty County 11K003





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

Wells	Springs
Real-Time	
Continuous	
Periodic Measurements	

(Upper Floridan Aquifer)

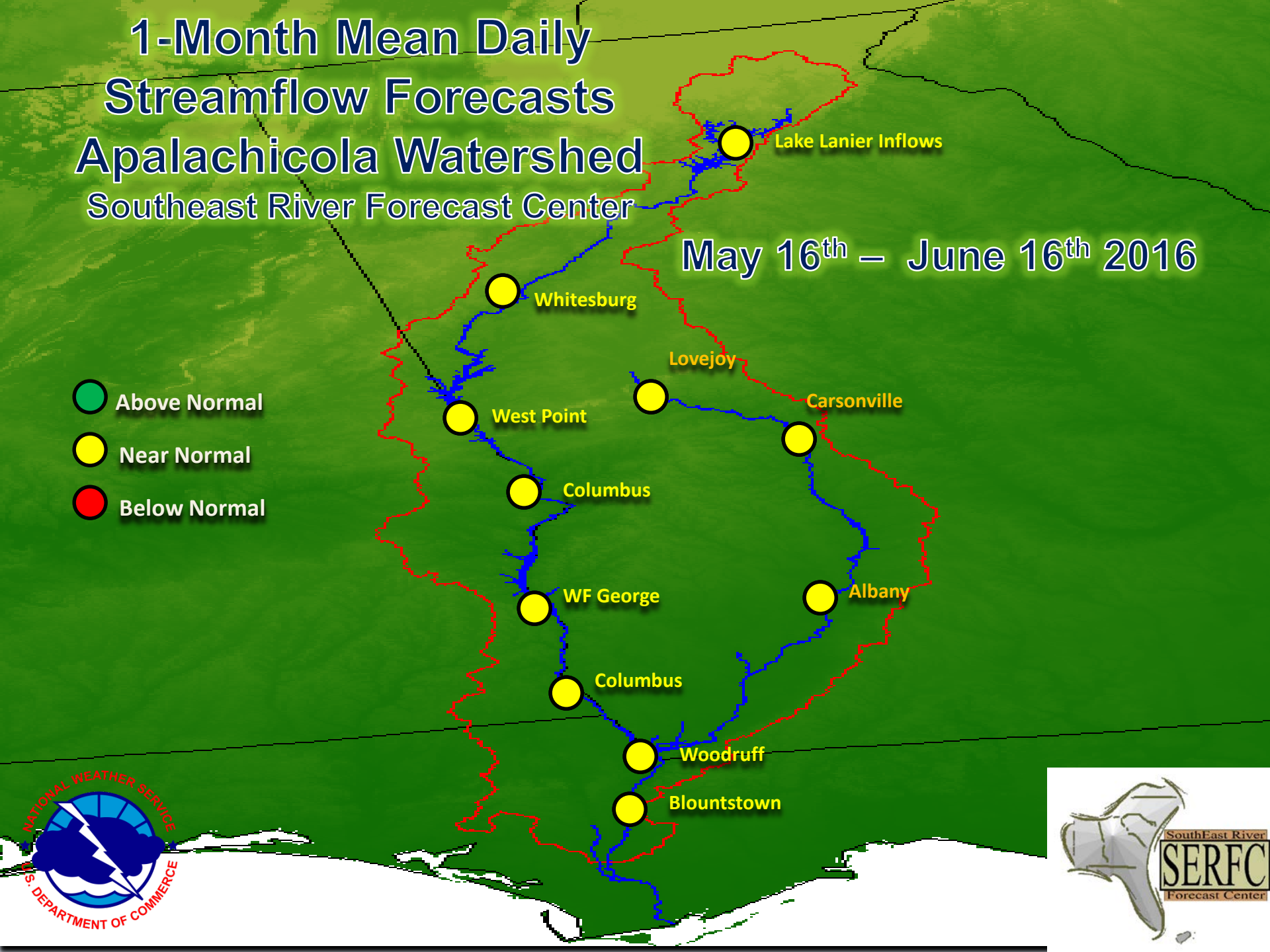
Streamflow Forecasts

Jeff Dobur

1-Month Mean Daily Streamflow Forecasts Apalachicola Watershed

Southeast River Forecast Center

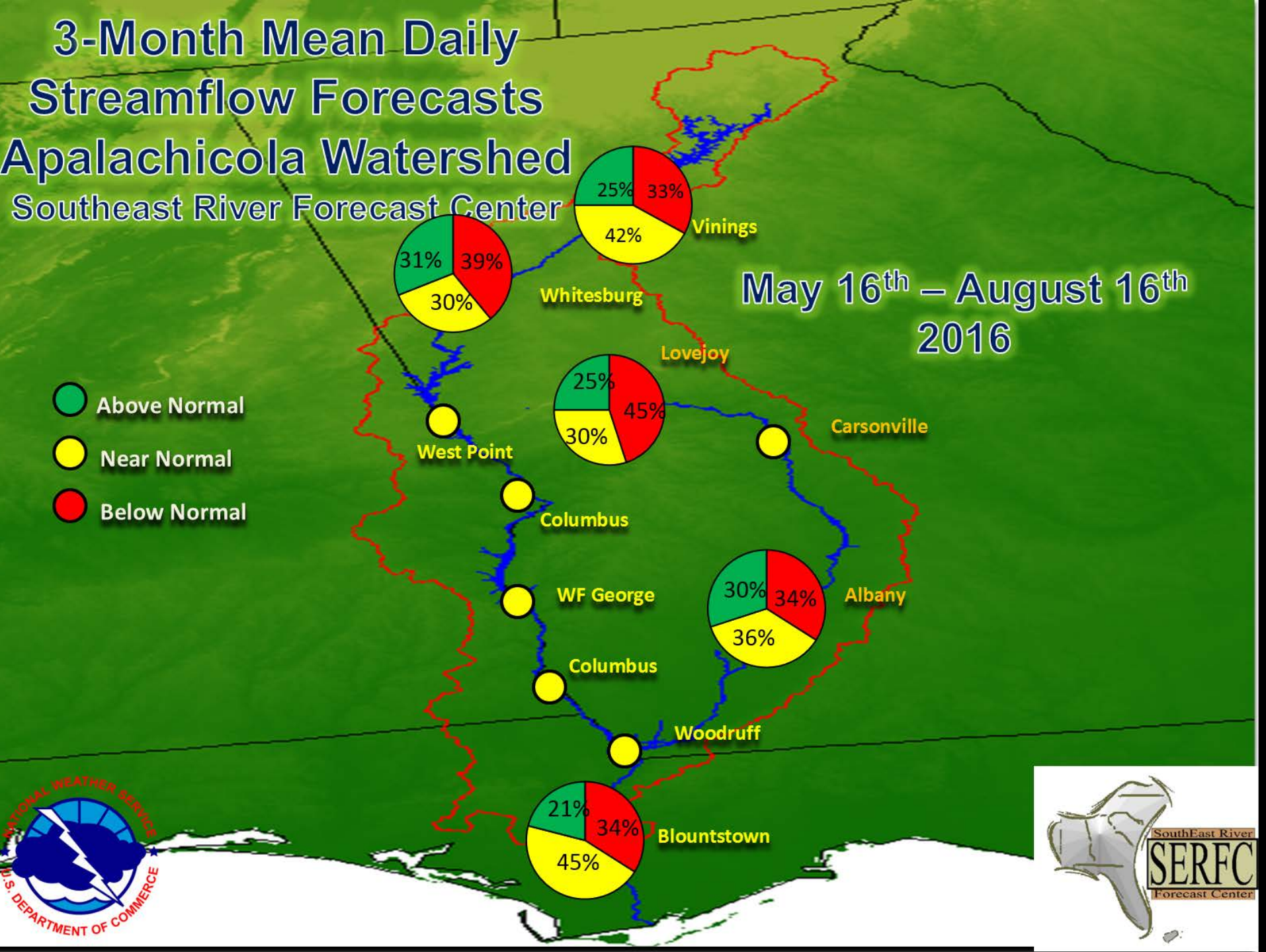
May 16th – June 16th 2016



3-Month Mean Daily Streamflow Forecasts Apalachicola Watershed

Southeast River Forecast Center

May 16th – August 16th 2016



Summary – David Zierden

- CO_2 concentrations are likely above 400 ppm for generations or longer
- Moderate drought has developed over N. Georgia and the upper ACF
- Recent pattern brought excess rain to Texas, Louisiana, but left the ACF relatively dry
- Pattern shift bringing unsettled weather to the Southeast this week
- El Nino continues to decline, shift to La Nina likely (75%)
- NOAA forecasting increased chances of above normal rainfall the next 1-3 months
- La Nina likely to enhance tropical activity this upcoming season

Summary-Tony Gotvald

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

Summary – Jeff Dobur

- 1 Month Streamflow forecast - Near Normal
- 3 Month Streamflow forecast – ESP indicates equal chances. Favor near Normal.
- Pie Charts do not directly include any adjustments to the ESP forecast based on ENSO, CPC or other. Based on soil conditions relative to normal in concert with historical precipitation.

Questions, Comments, Discussion

References

Speakers

David Zierden, FSU

Tony Gotvald, 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

June 14, 2016, 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