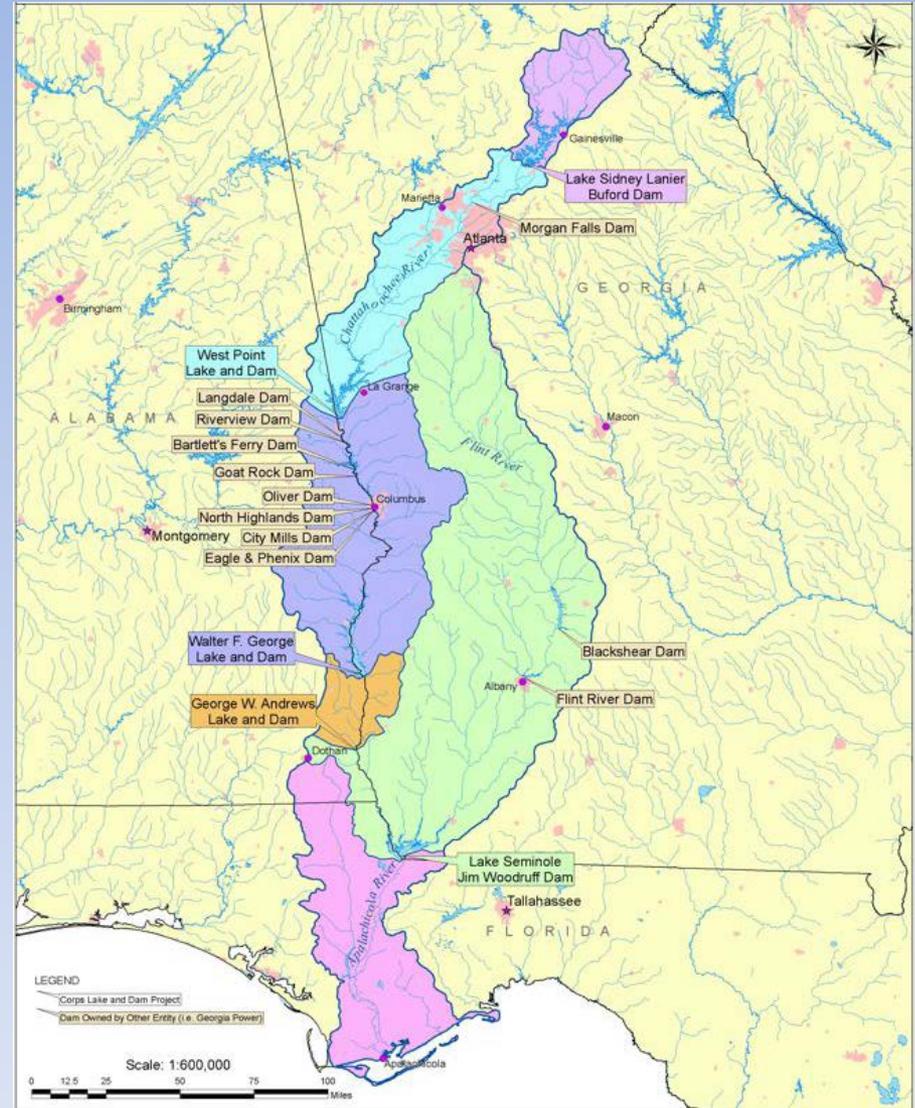
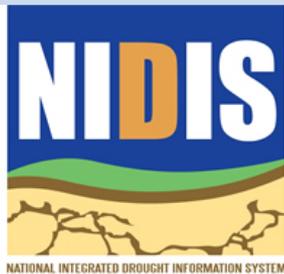


National Integrated Drought Information System

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

16 June 2015





Courtney Black, P.E.
Regional Drought Information Coordinator
National Integrated Drought Information System

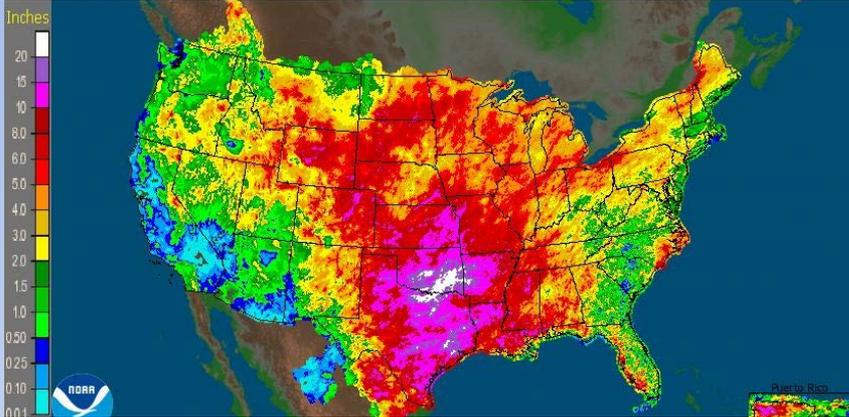
Outline

Welcome – Eric Reutebuch, AU Water Resources Center

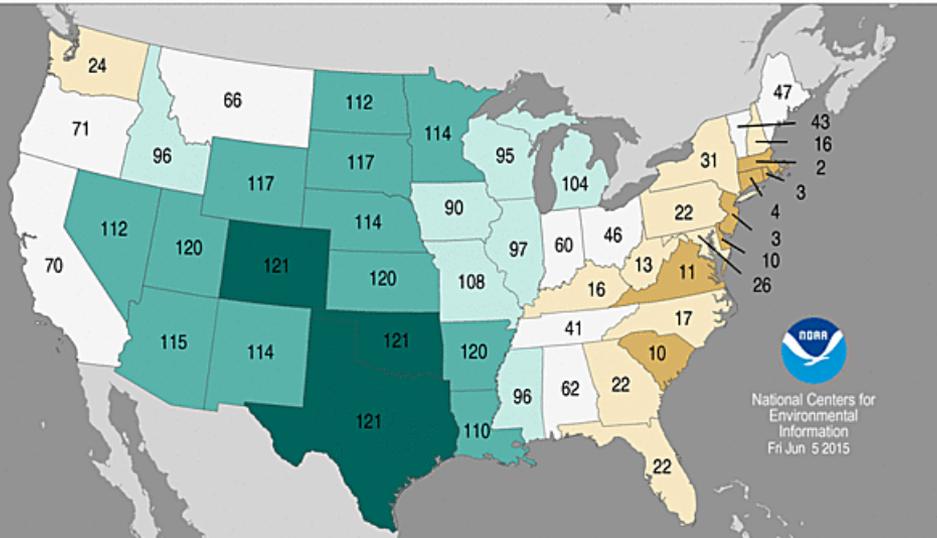
- Current drought status, seasonal forecasts and outlooks – David Zierden, Florida Climate Center, FSU
- Streamflows and groundwater – Paul Ankorn, USGS
- Streamflow forecasts – Jeff Dobur, SERFC
- Summary and Discussion

Record Wet May

CONUS + Puerto Rico: May, 2015 Monthly Observed Precipitation
Valid at 6/1/2015 1200 UTC- Created 6/12/15 3:35 UTC



Statewide Precipitation Ranks
May 2015
Period: 1895-2015



National Centers for
Environmental
Information
Fri Jun 5 2015

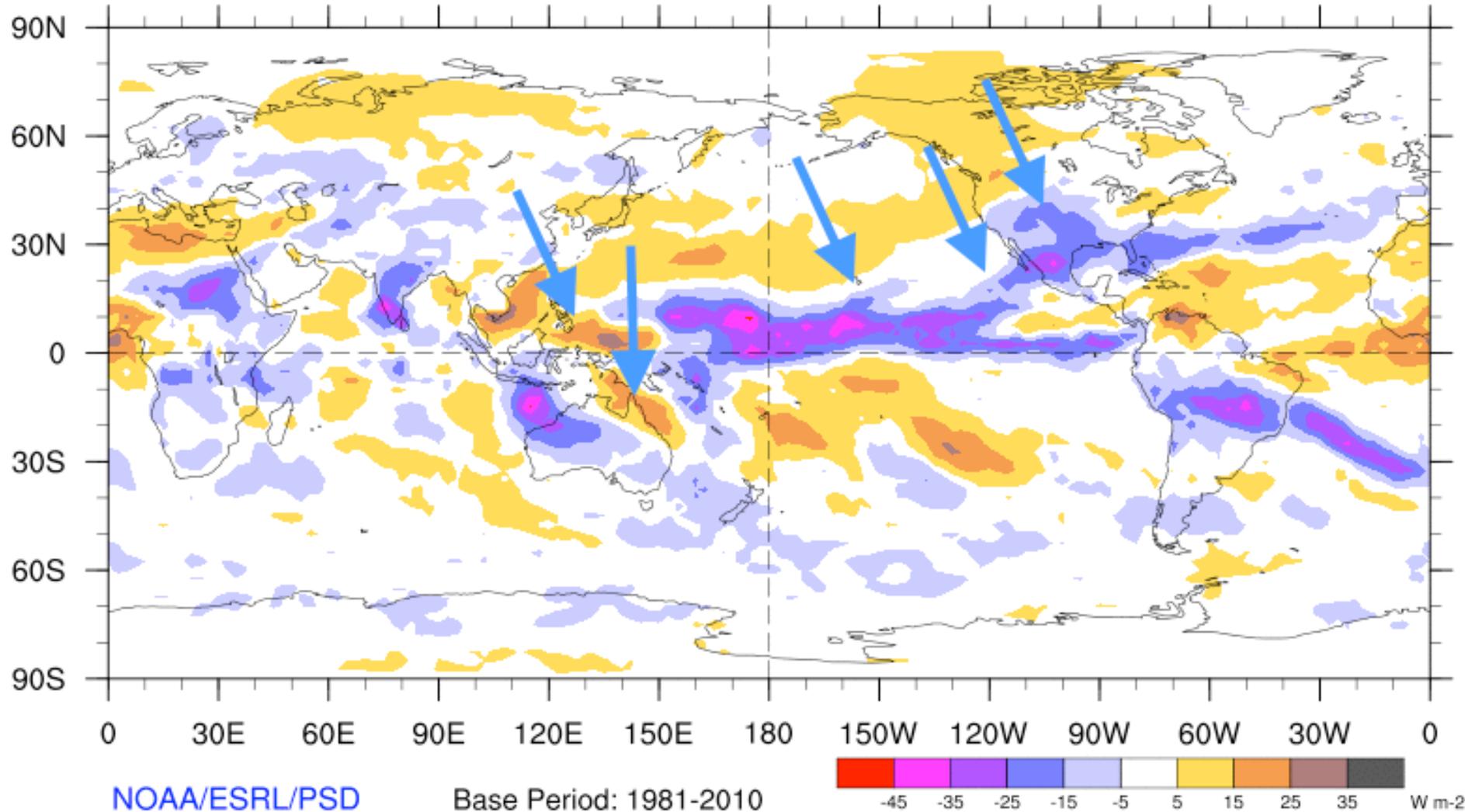


- May set record as wettest month ever for contiguous U.S.
- Over 20 inches across TX and OK, widespread flooding
- TX, OK set records for wettest month ever.
- CO sets record for wettest May

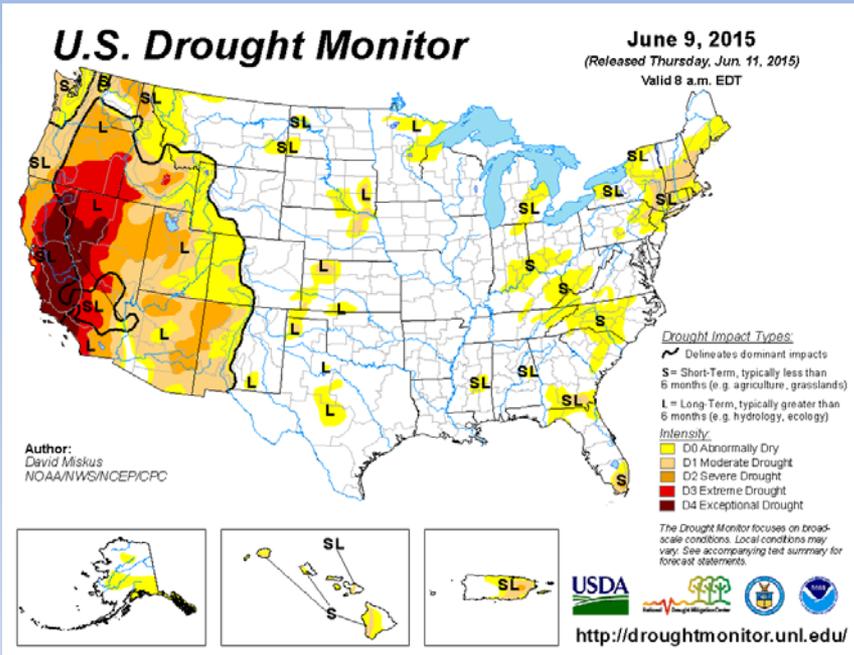
Outgoing Longwave Radiation

30-Day Average OLR Anomaly

2015/04/17 - 2015/05/16



U.S. Drought Monitor

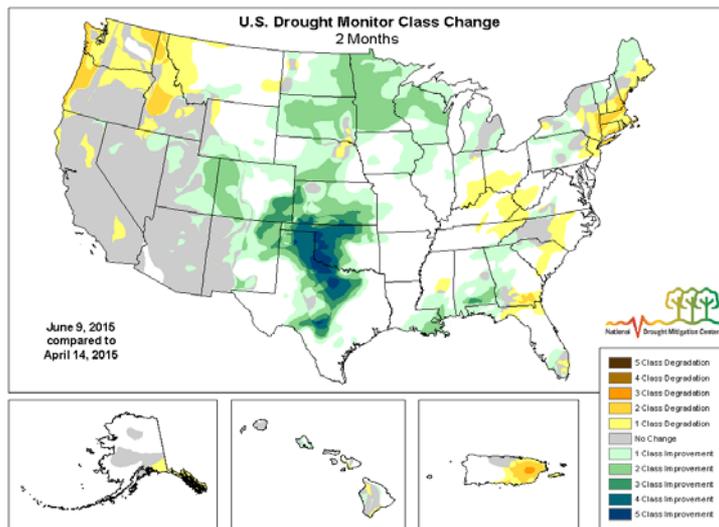


- Only 2 small pockets of moderate drought (D1) east of the Rockies (New England and Miami-Dade)

- D0 only means “abnormally dry”, not drought

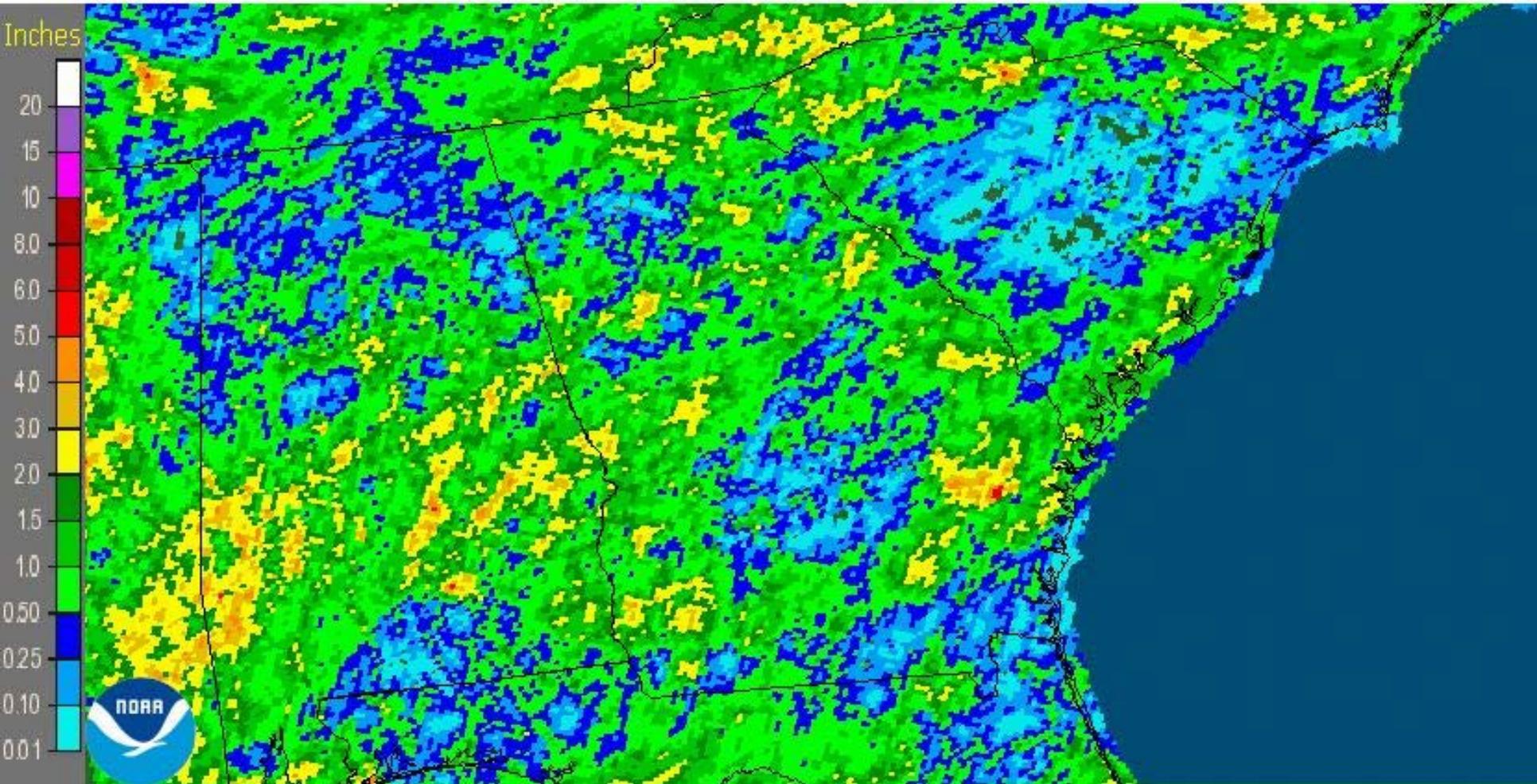
- Extreme drought persists in CA, NV.

- Drastic improvement in TX, OK the last two months.



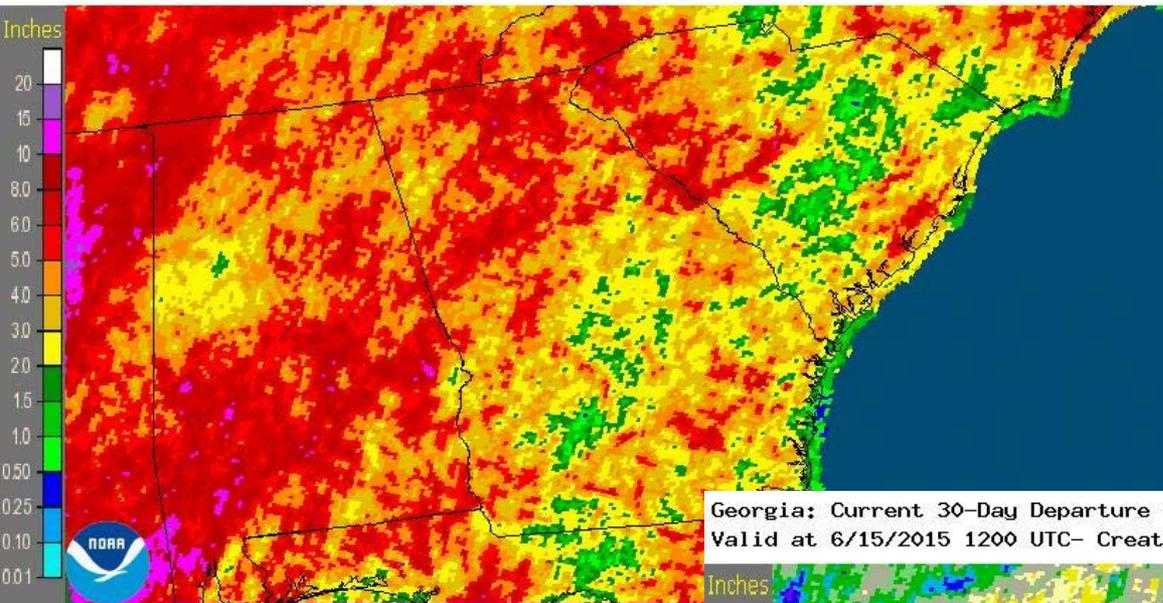
Rainfall – Last 7 Days

Georgia: Current 7-Day Observed Precipitation
Valid at 6/15/2015 1200 UTC- Created 6/16/15 0:26 UTC

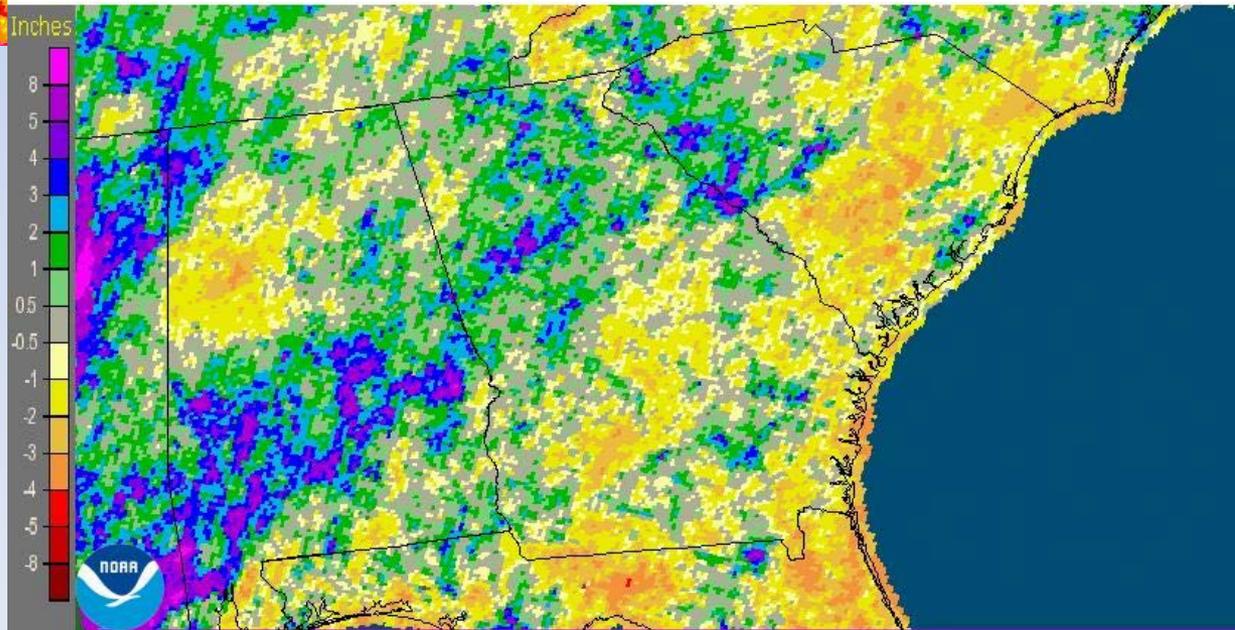


30-Day Rainfall

Georgia: Current 30-Day Observed Precipitation
Valid at 6/15/2015 1200 UTC- Created 6/16/15 0:28 UTC

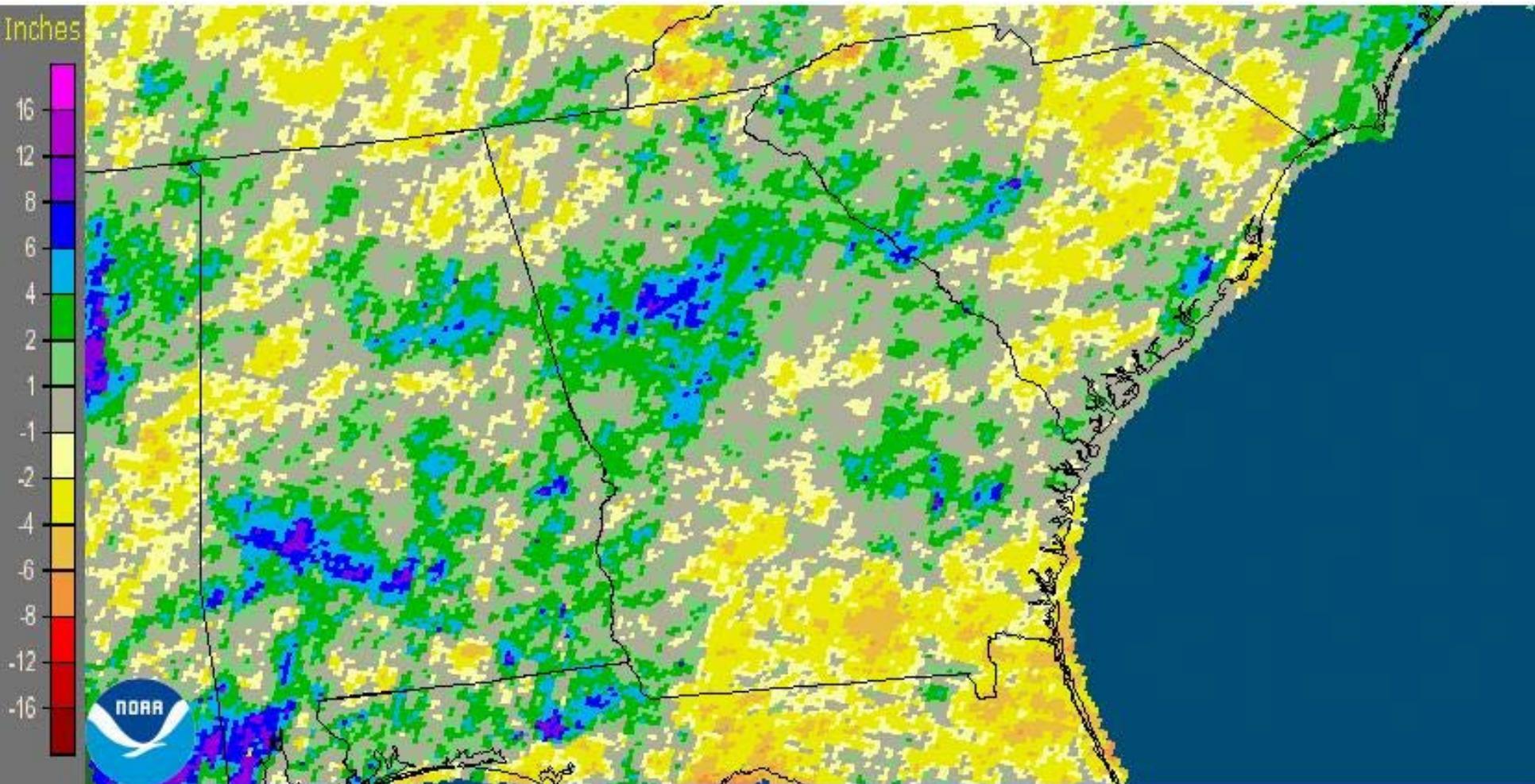


Georgia: Current 30-Day Departure from Normal Precipitation
Valid at 6/15/2015 1200 UTC- Created 6/16/15 0:28 UTC

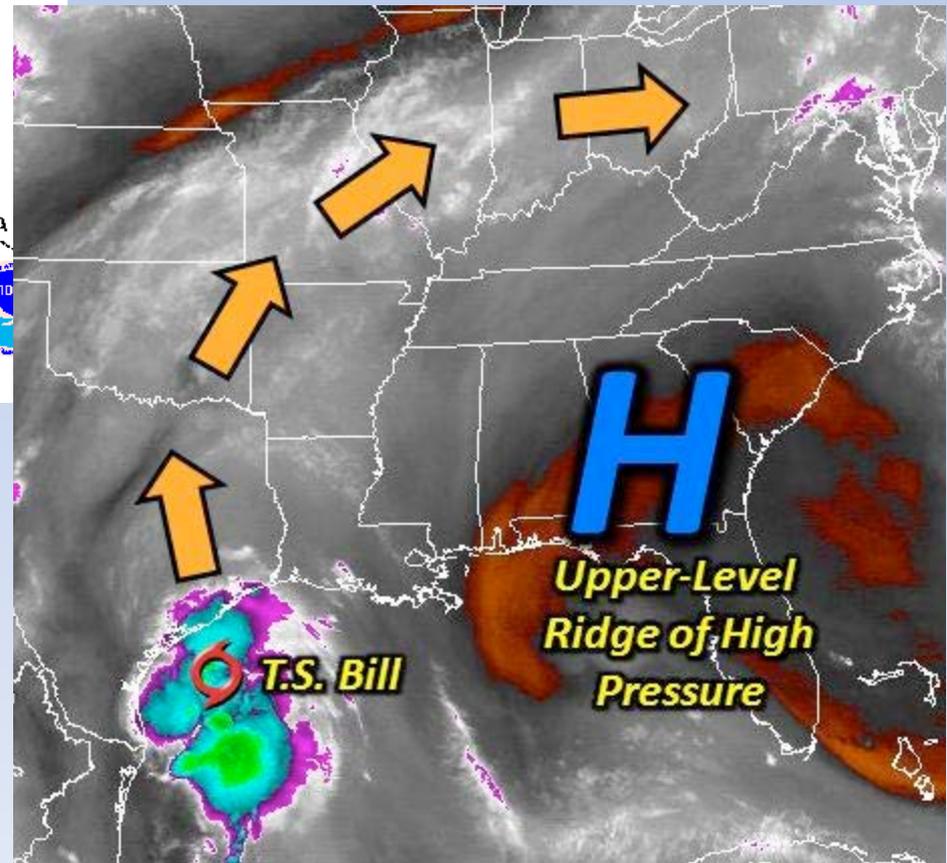
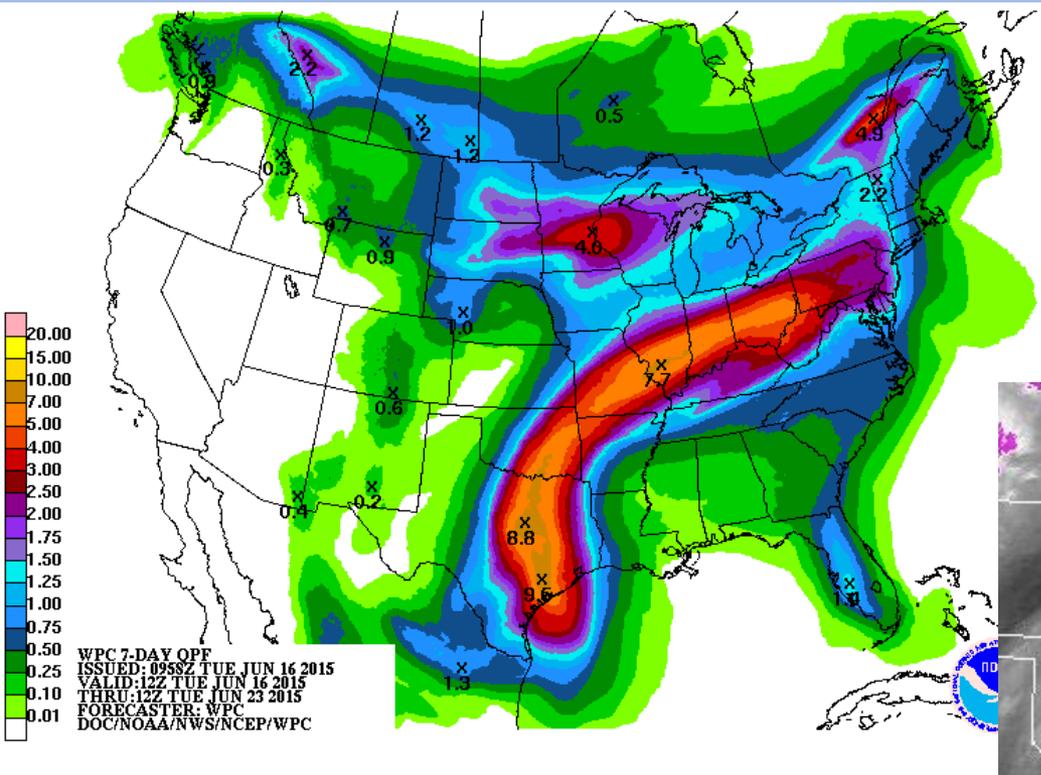


90-day Rainfall Departures

Georgia: Current 90-Day Departure from Normal Precipitation
Valid at 6/15/2015 1200 UTC- Created 6/16/15 0:30 UTC



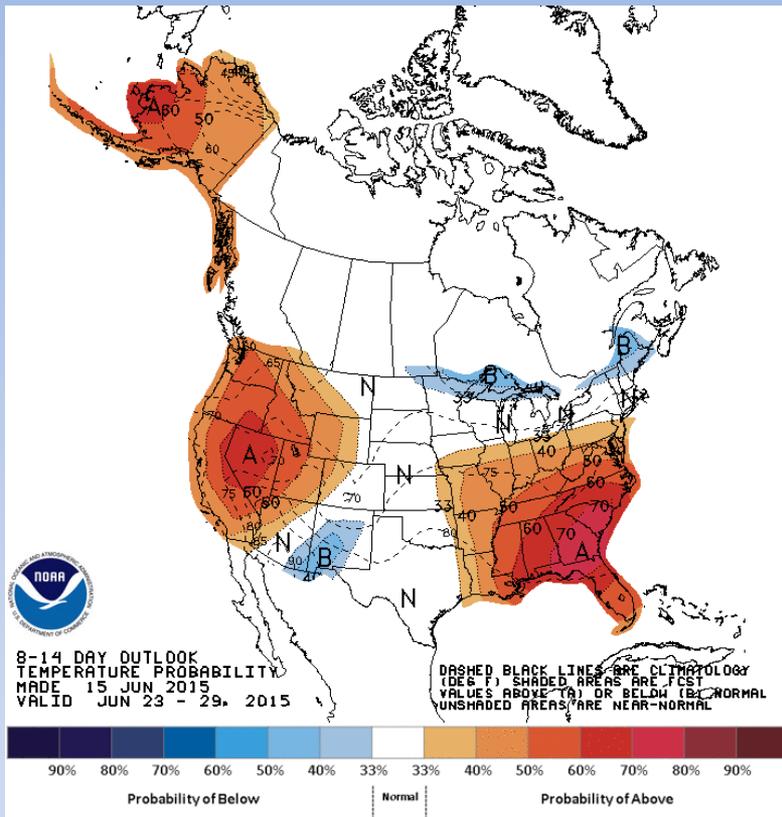
7-Day Precipitation Forecast



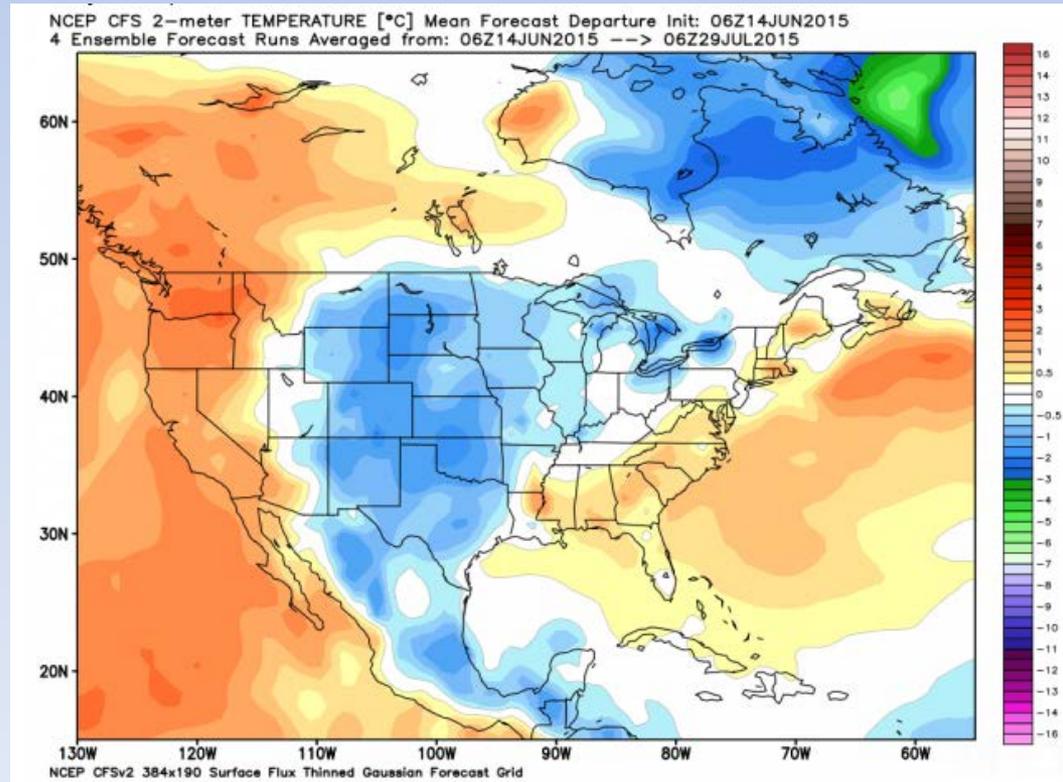
Summer Heat

Strong correlation between heat and less rainfall during summer in the Southeast

NOAA CFS 45-day ensemble forecast

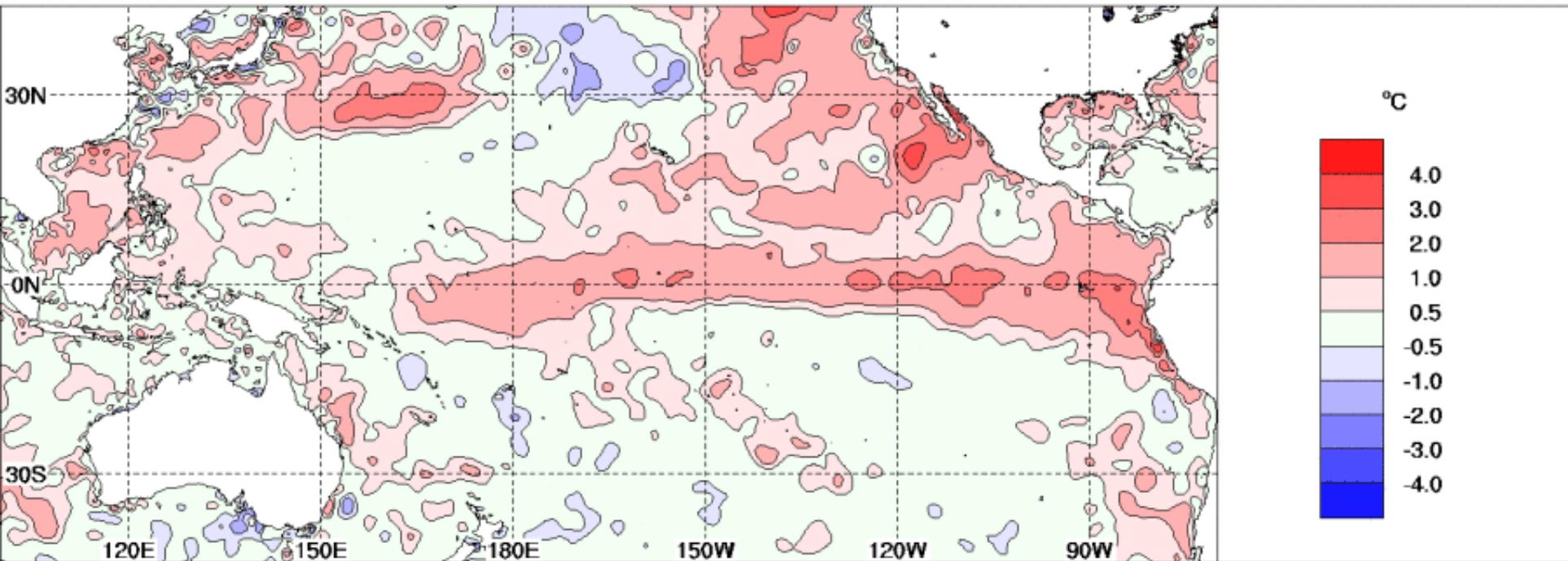


CPC 8-14 day temp. outlook

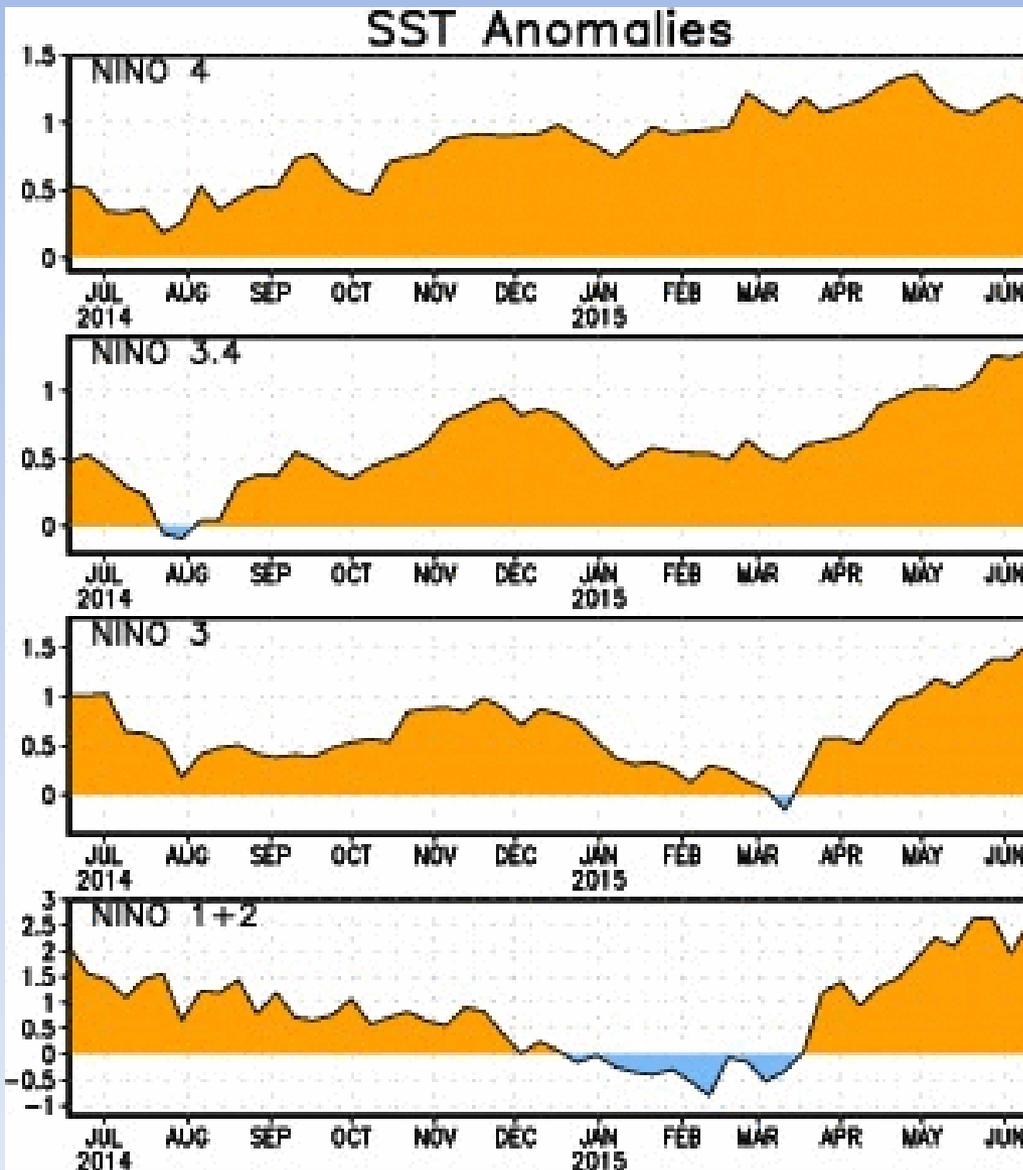


Current SST Anomalies

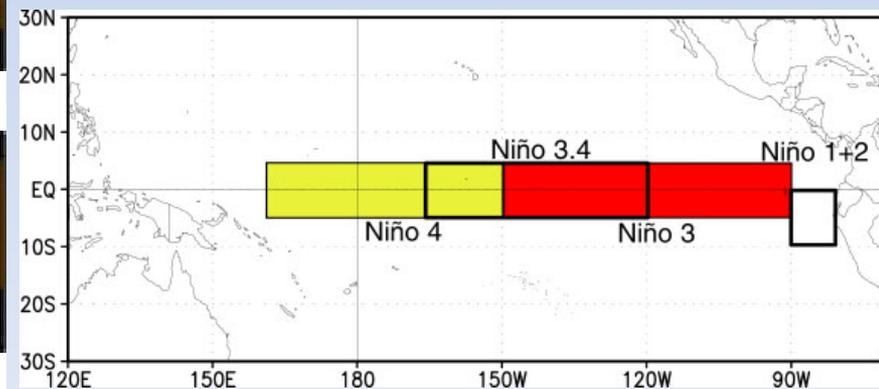
SSTA 1.0X1.0 NMOC OCEAN ANOMALIES (C) 20150601 20150607



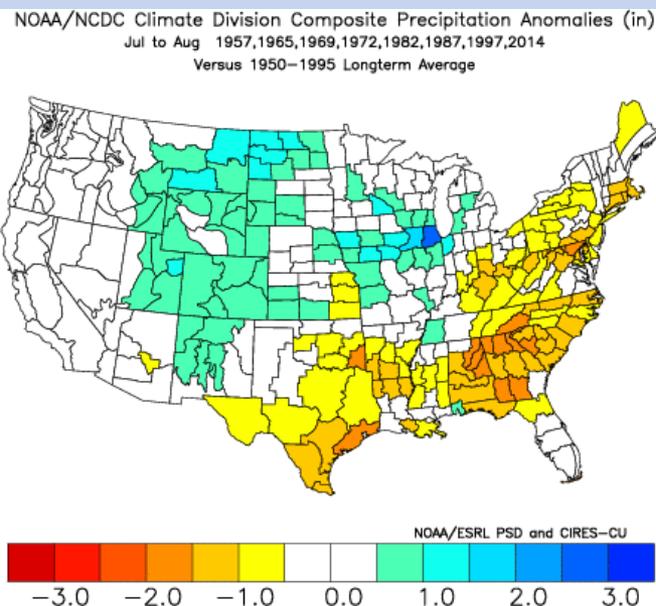
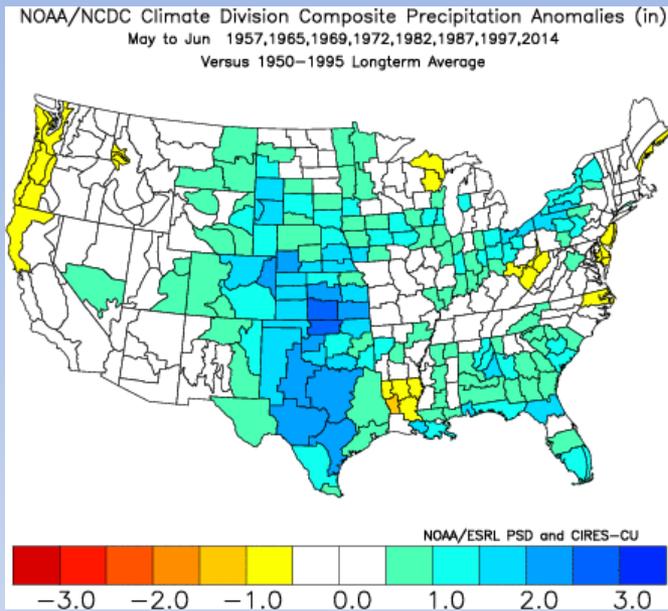
Nino Indices



- All four Niño regions above +1.0 for 8 consecutive weeks, longest such stretch on record (1990)
- Niño 3.4 (2nd from top) at +1.3, nearing the “Strong” designation

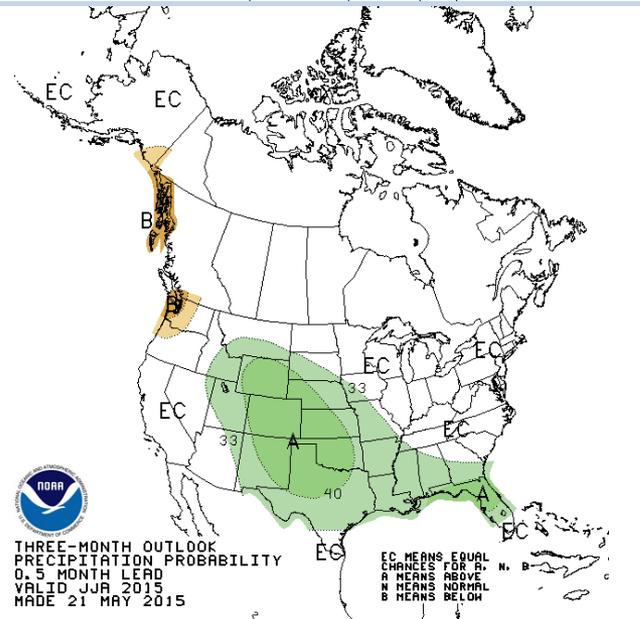
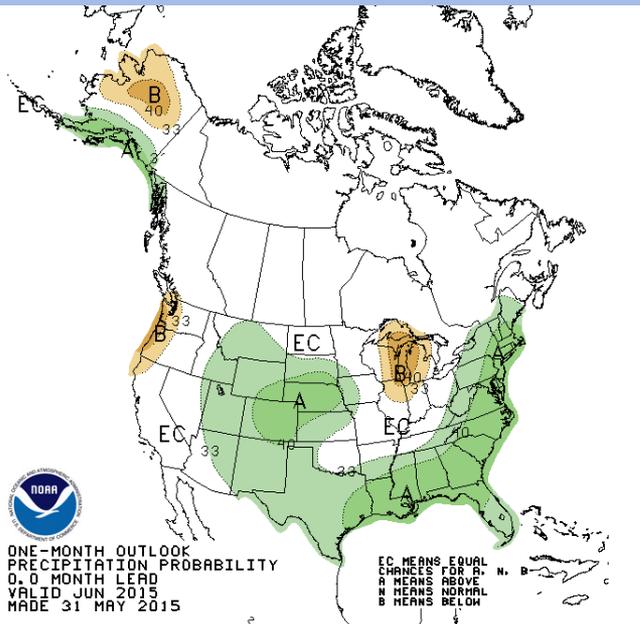


What Does a Strong El Nino Mean?



- Composites of similar strong summer El Nino's
- May and June (top) show increased rainfall for TX, OK, (happened this year) and much of the Southeast
- Late summer July-August (bottom) shows tendency for dryness
- Well-known to enhance summer monsoon season in the Southwest
- Not much summer impact in California and western U.S.

Official NOAA 1 and 3-Month Outlook

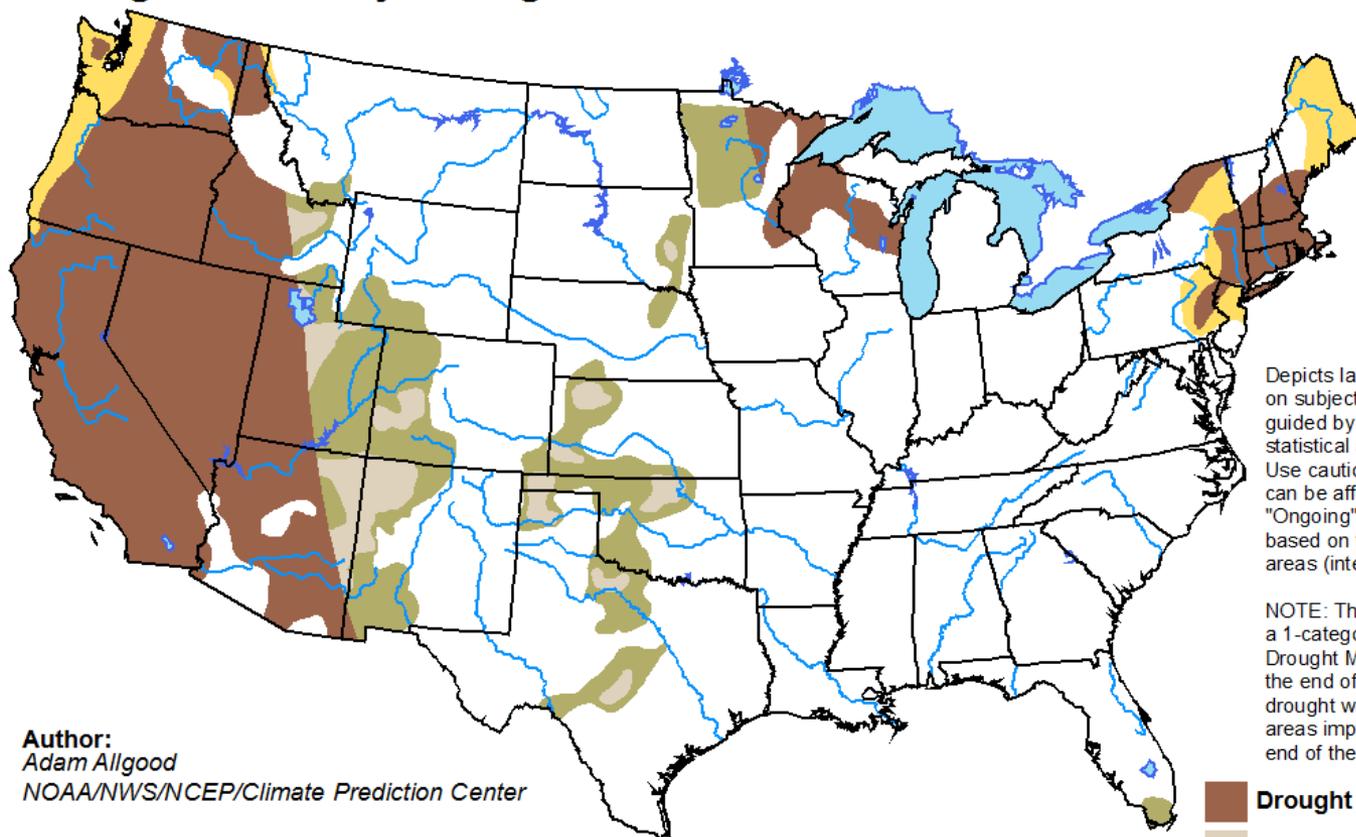


- NOAA's 1-month (top) and 3-month (bottom) outlooks
- Enhanced rainfall over TX, OK, and SW consistent with El Nino
- Enhanced rainfall forecast for the Southeast and Florida
- No tendency for wet or dry for California and the Western U.S.

U.S. Drought Outlook

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

Valid for May 21 - August 31, 2015
Released May 21, 2015

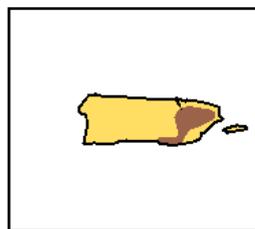
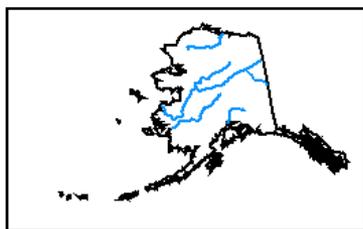


Depicts large-scale trends based on subjectively derived probabilities guided by short- and long-range statistical and dynamical forecasts. Use caution for applications that can be affected by short lived events. "Ongoing" drought areas are based on the U.S. Drought Monitor areas (intensities of D1 to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



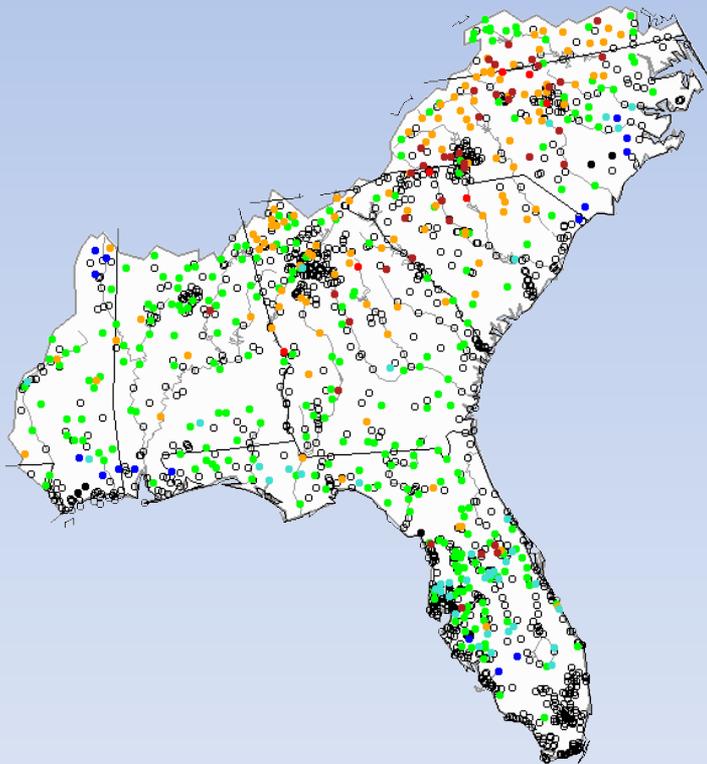
<http://go.usa.gov/hHTe>

Streamflows and Groundwater

Realtime stream flow compared with historical monthly averages

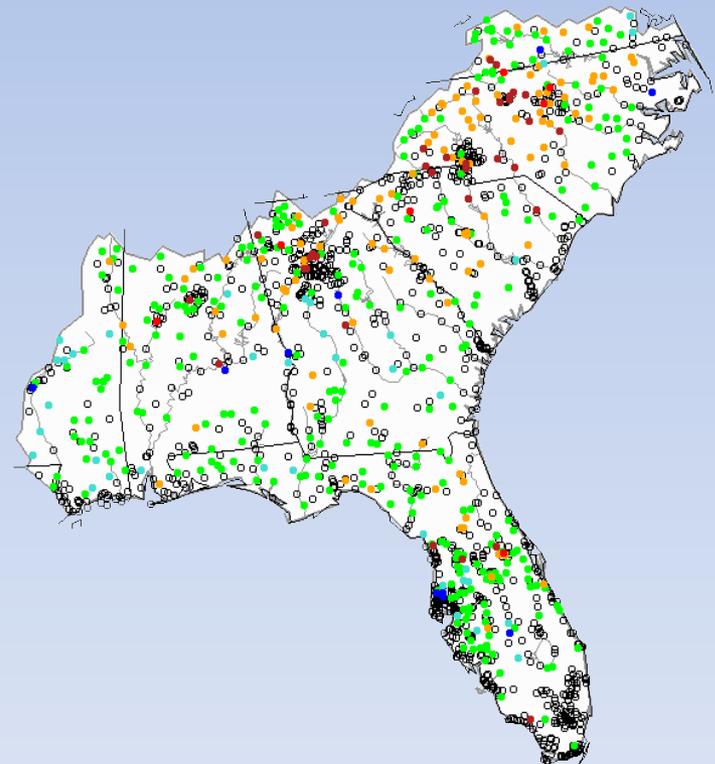
Previous Brief:

Monday, May 18, 2015 07:30ET



Current:

Monday, June 15, 2015 10:00ET



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>

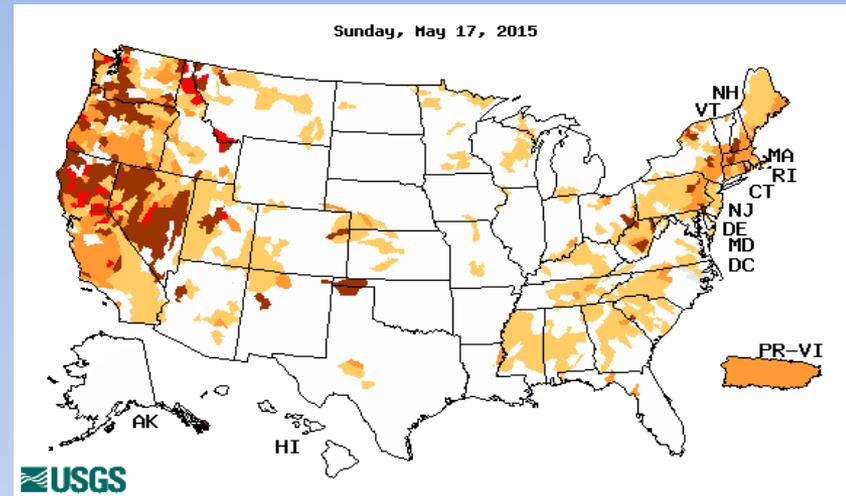
Below Normal 7-day Average Streamflows

Previous brief:

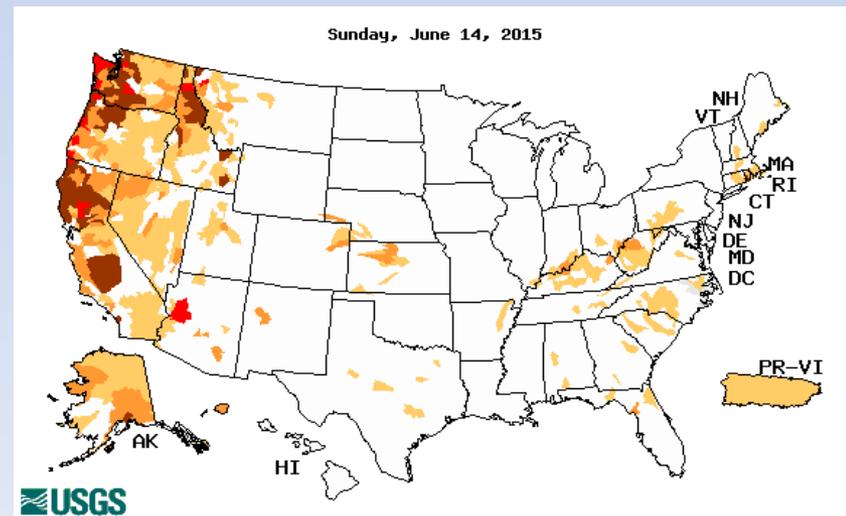
Below normal 7-day average streamflow as compared with historical streamflow for day shown

Current:

<http://waterwatch.usgs.gov>



Explanation - Percentile classes				
Low	<=5	6-9	10-24	Disrupted data for a hydrologic region
Extreme hydrologic drought	Severe hydrologic drought	Moderate hydrologic drought	Below normal	

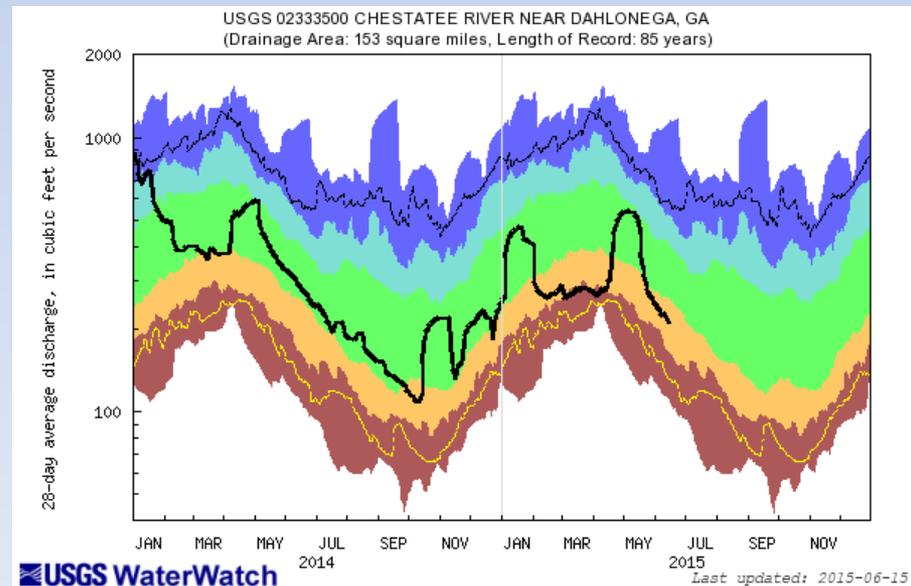
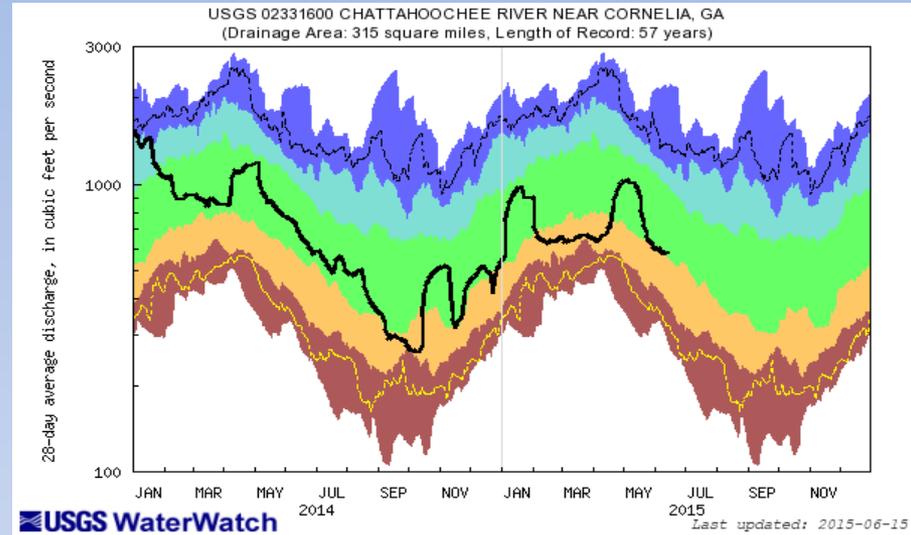


Lake Lanier Inflows

Chattahoochee near
Cornelia (02331600)

<http://waterwatch.usgs.gov>

Chestatee near
Dahlonega (02333500)



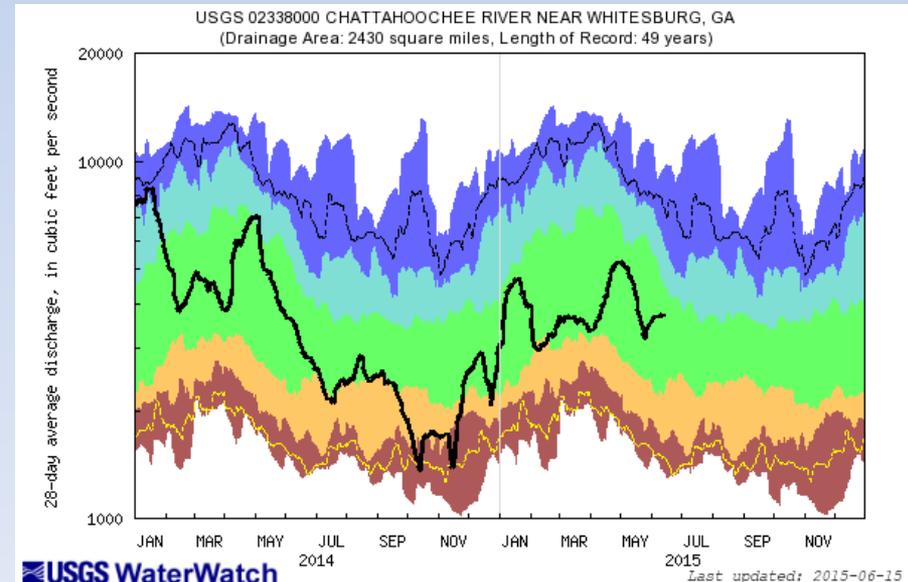
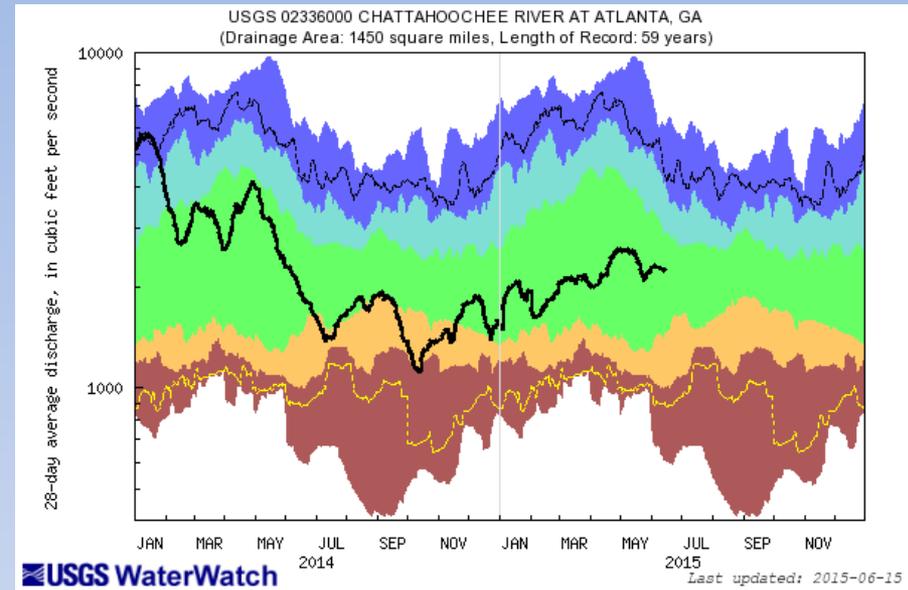
Explanation - Percentile classes						
lowest-10th percentile	5	10-24	25-75	76-90	95	90th percentile-highest
Much below Normal	Below normal	Normal	Above normal	Much above normal		Flow

Current Streamflows

Chattahoochee at Atlanta (02336000)

<http://waterwatch.usgs.gov>

Chattahoochee near Whitesburg (02338000)

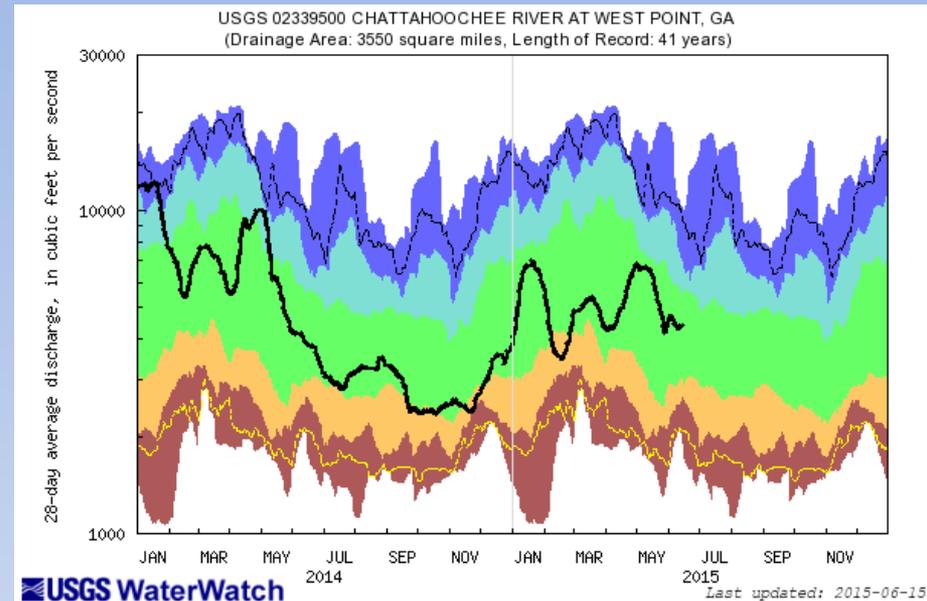


Explanation - Percentile classes						Flow
lowest-10th percentile	5	10-24	25-75	76-90	95	
Much below Normal	Below normal	Normal	Above normal	Much above normal	90th percentile - highest	

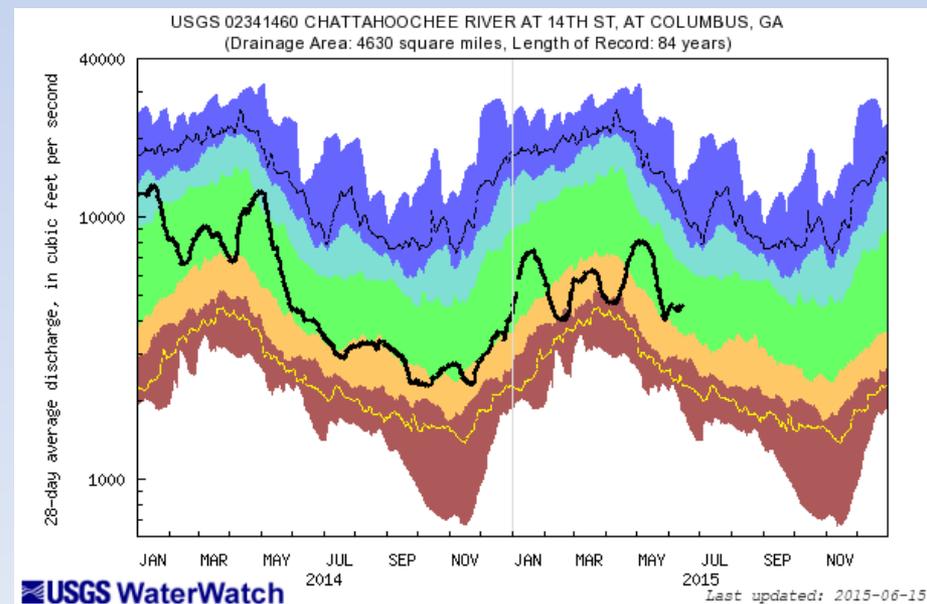
Current Streamflows

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		

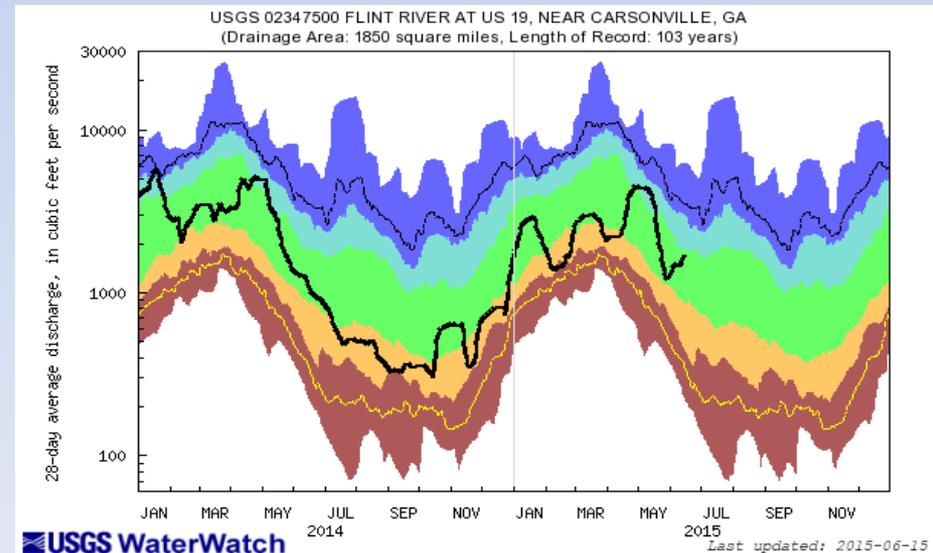
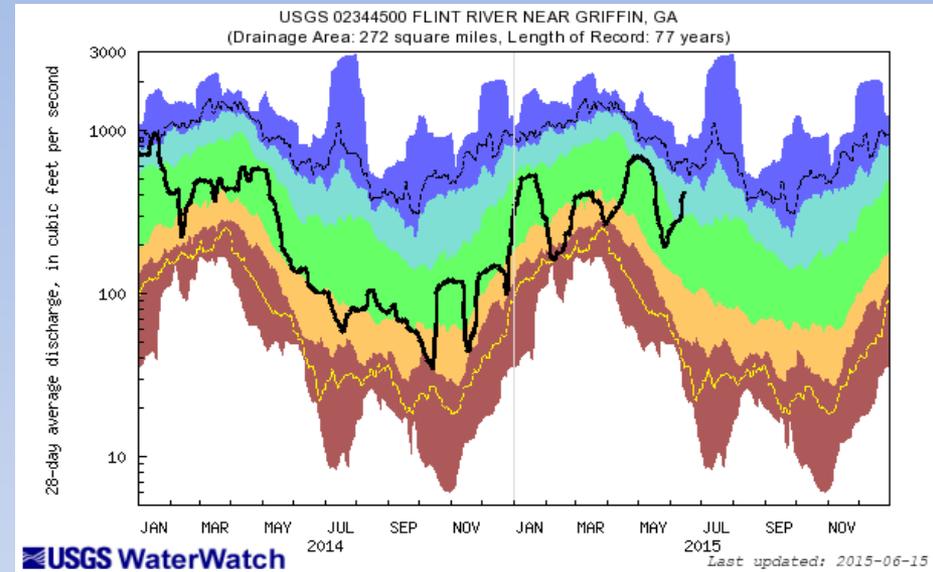
Current Streamflows

Flint River near Griffin (02344500)

<http://waterwatch.usgs.gov>

Flint River near Carsonville (02347500)

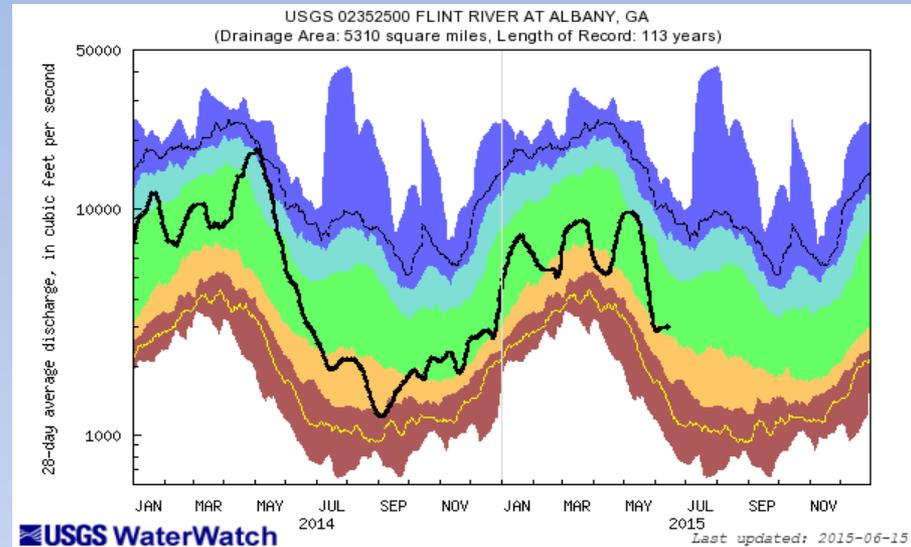
Explanation - Percentile classes							
lowest-10th percentile	5	10-24	25-75	76-90	95	90th percentile - highest	Flow
Much below Normal	Below normal	Normal	Above normal	Much above normal			



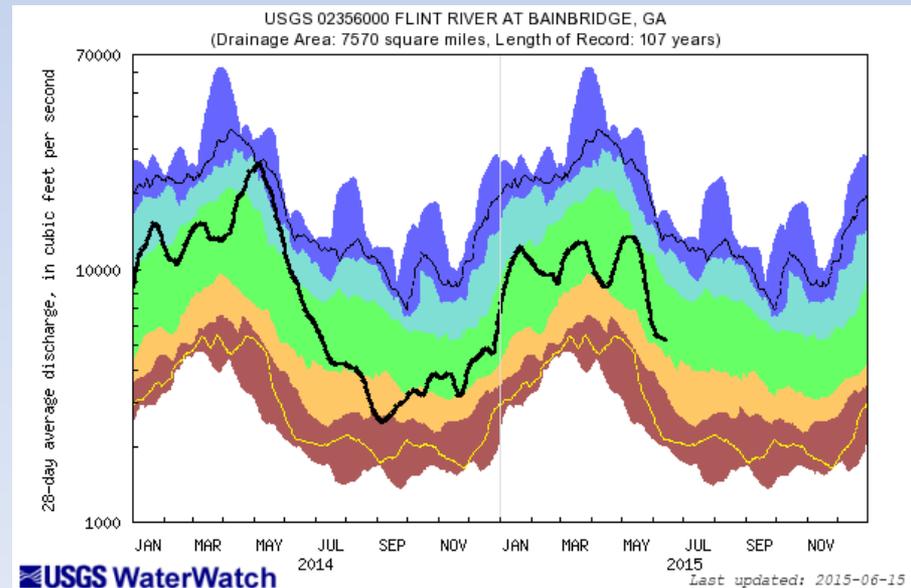
Current Streamflows

Flint River at Albany (02352500)

<http://waterwatch.usgs.gov>



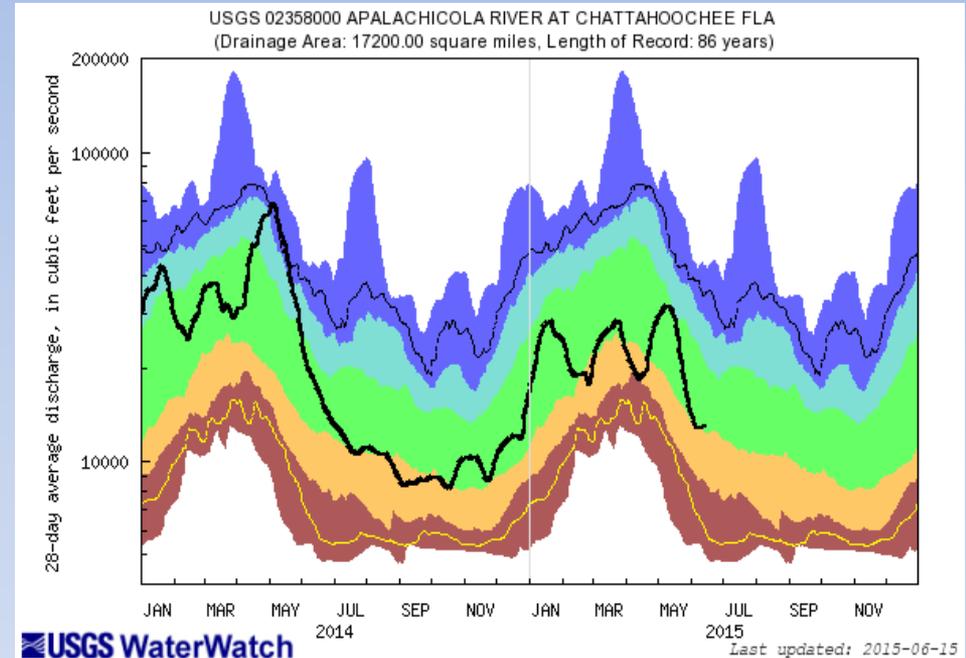
Flint at Bainbridge (02356000)



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

Streamflows

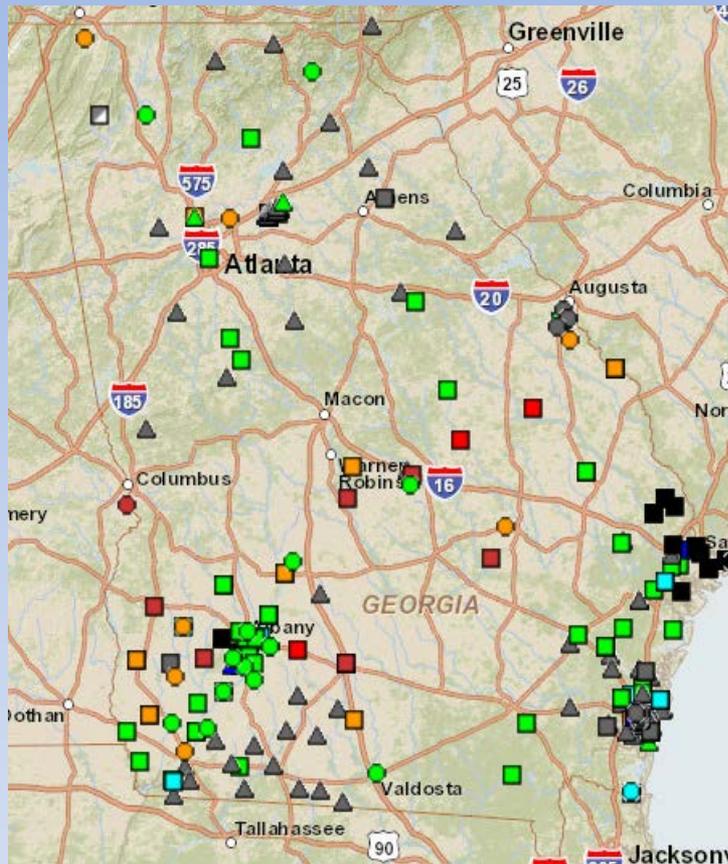
Apalachicola at Chattahoochee (02358000)



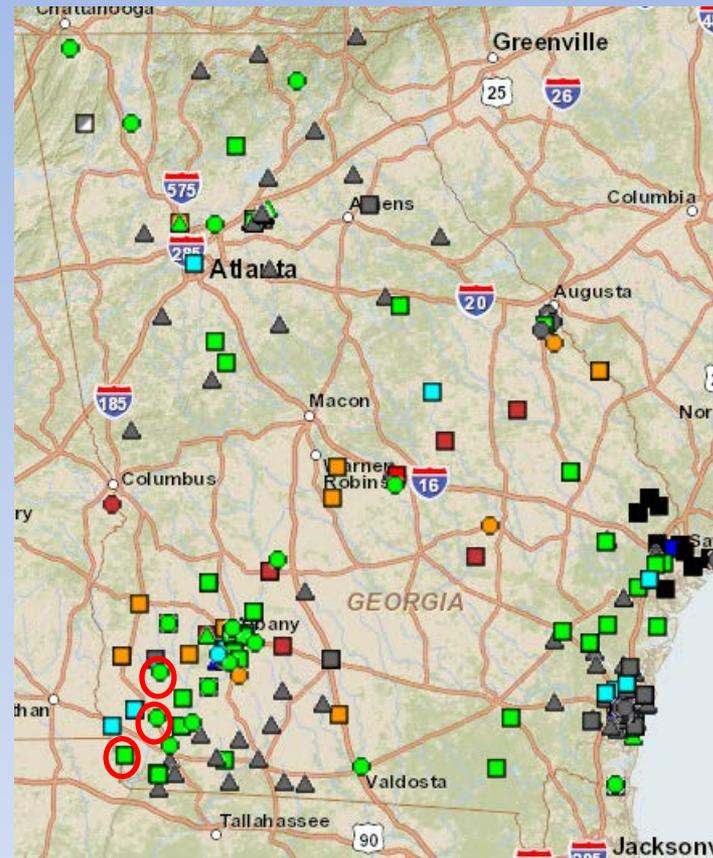
<http://waterwatch.usgs.gov>

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

Groundwater Conditions



Previous brief

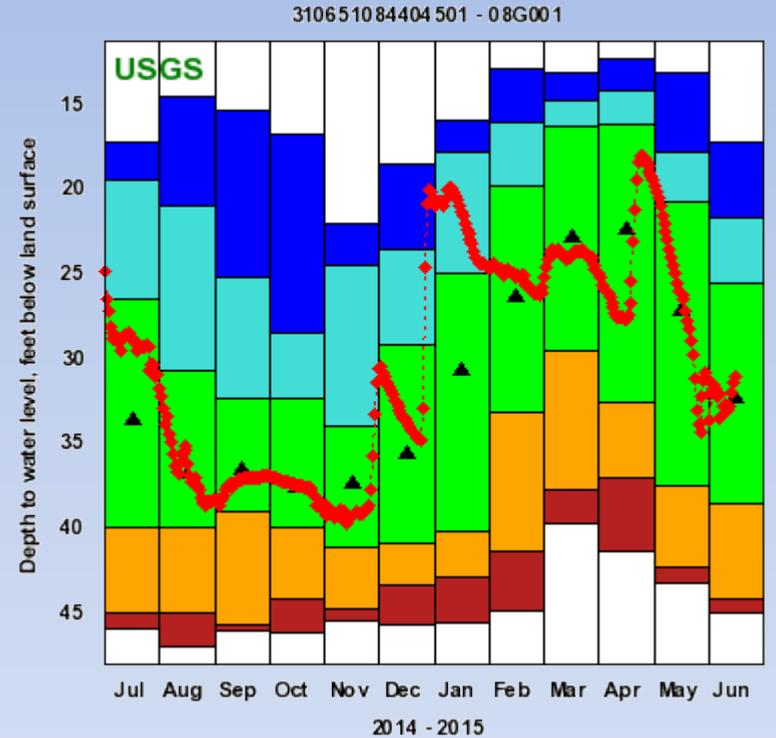
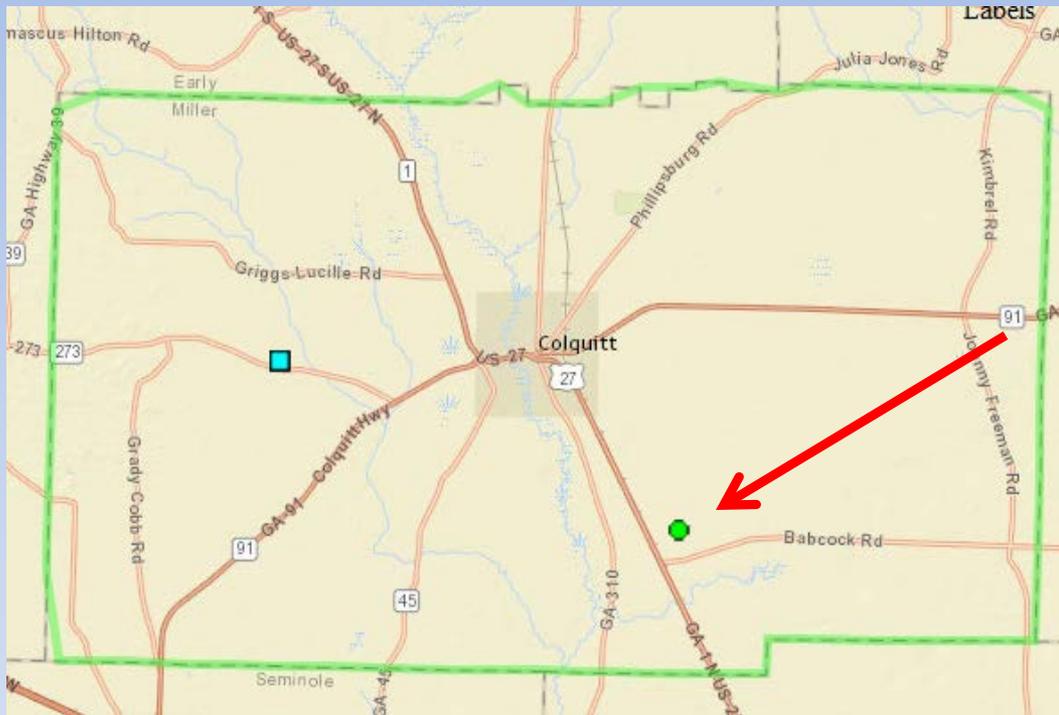


Current brief

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

<http://groundwaterwatch.usgs.gov>

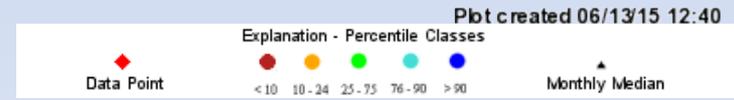
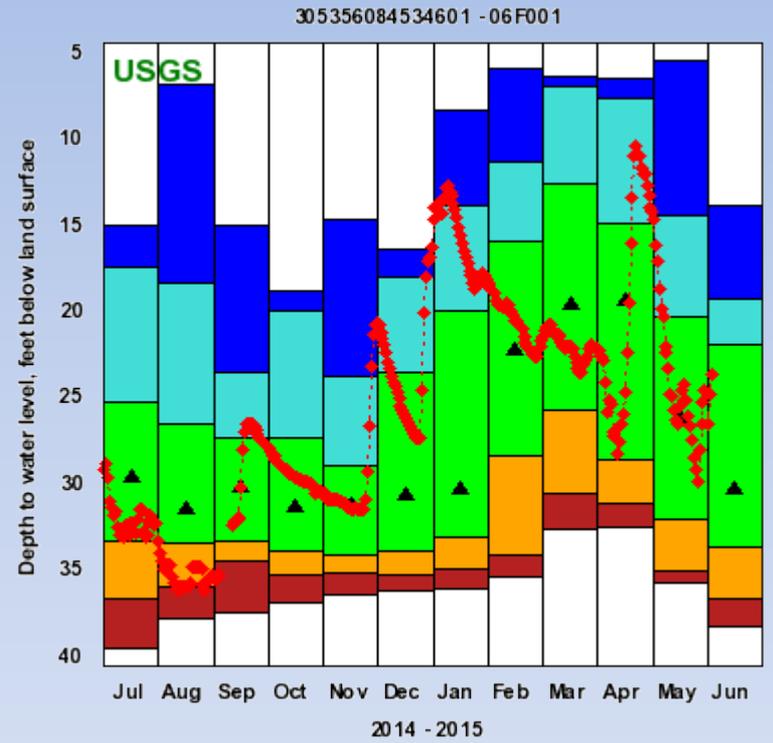
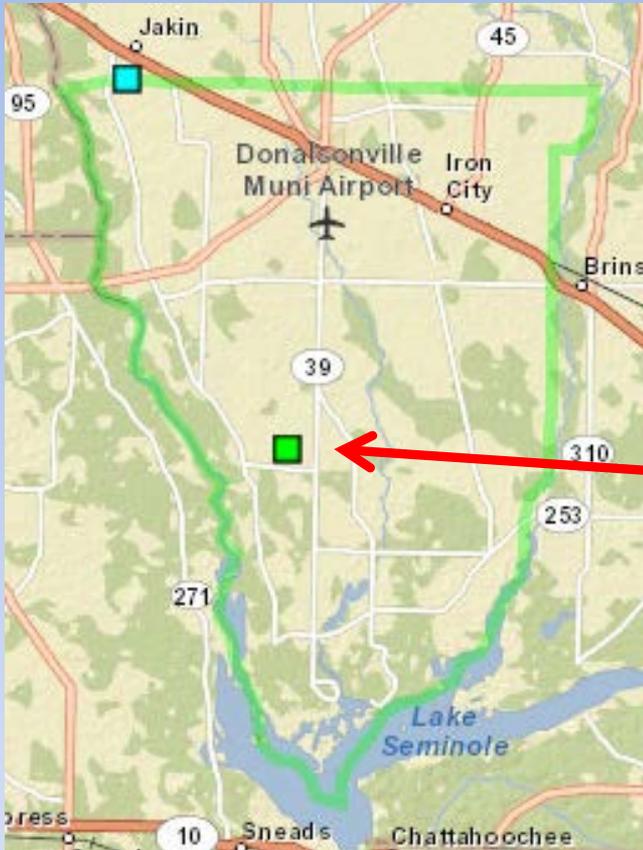
Groundwater Status – Miller County 08G001



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

(Upper Floridan Aquifer)

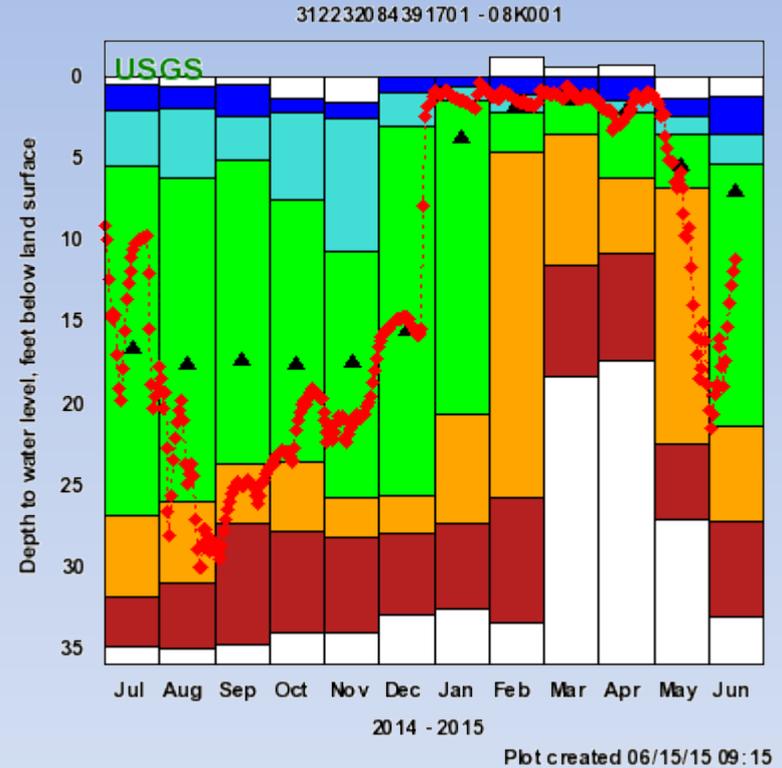
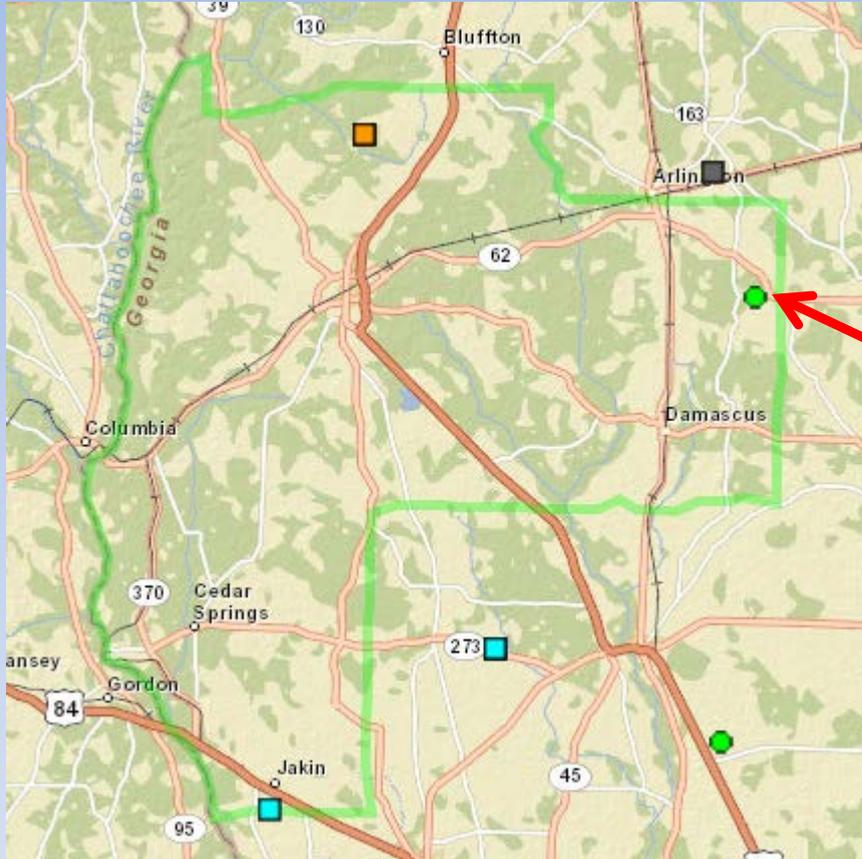
Groundwater Status – Seminole County 06F001



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

(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	Not Ranked	Real-Time	Continuous	Periodic Measurements
	Much Below Normal	Below Normal	Normal	Above Normal	Much Above Normal					

Explanation - Percentile Classes					
◆	●	●	●	●	●
Data Point	< 10	10 - 24	25 - 75	76 - 90	> 90
					▲ Monthly Median

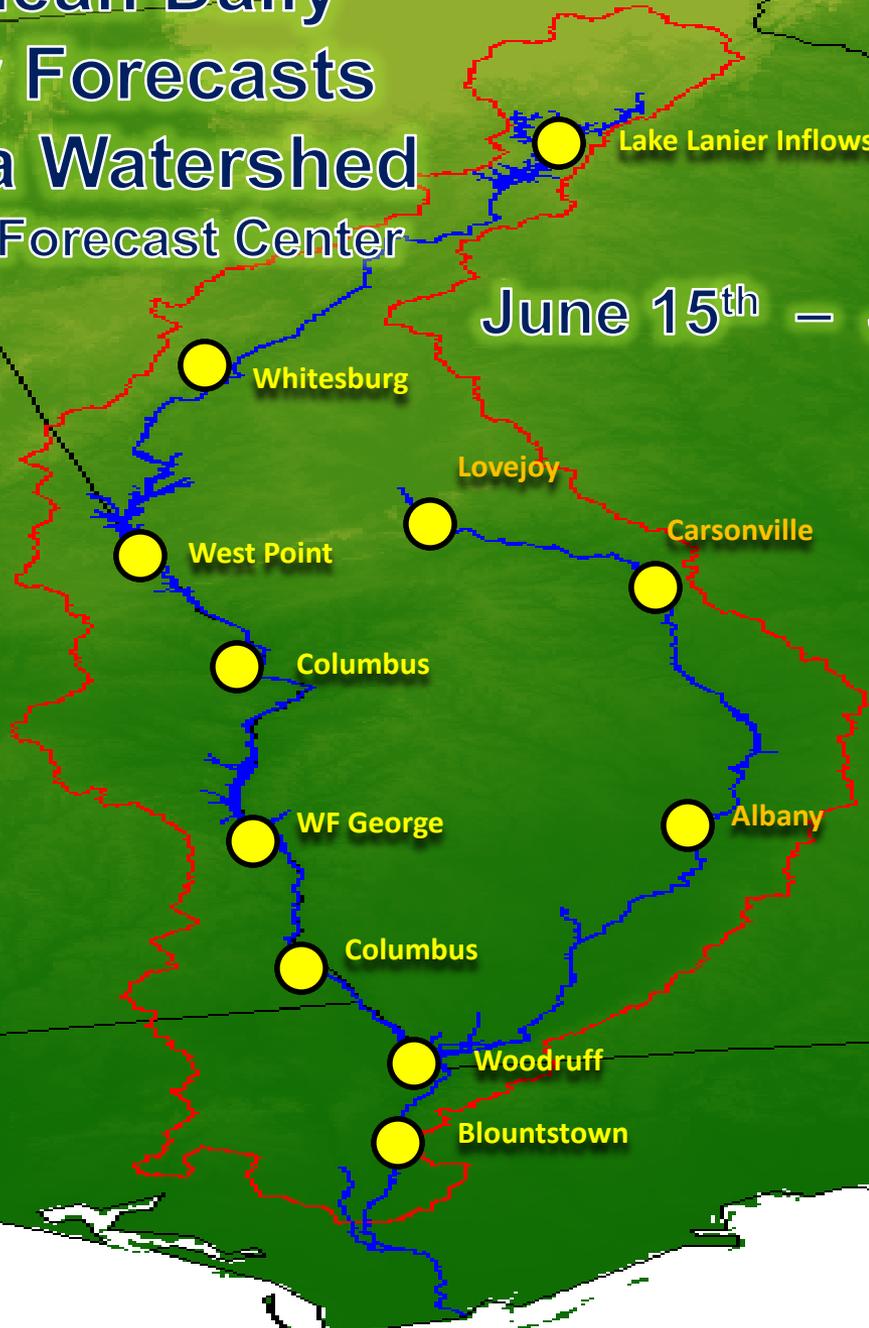
(Upper Floridan Aquifer)

Streamflow Forecasts

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

June 15th – July 15th 2015

-  Above Normal
-  Near Normal
-  Below Normal



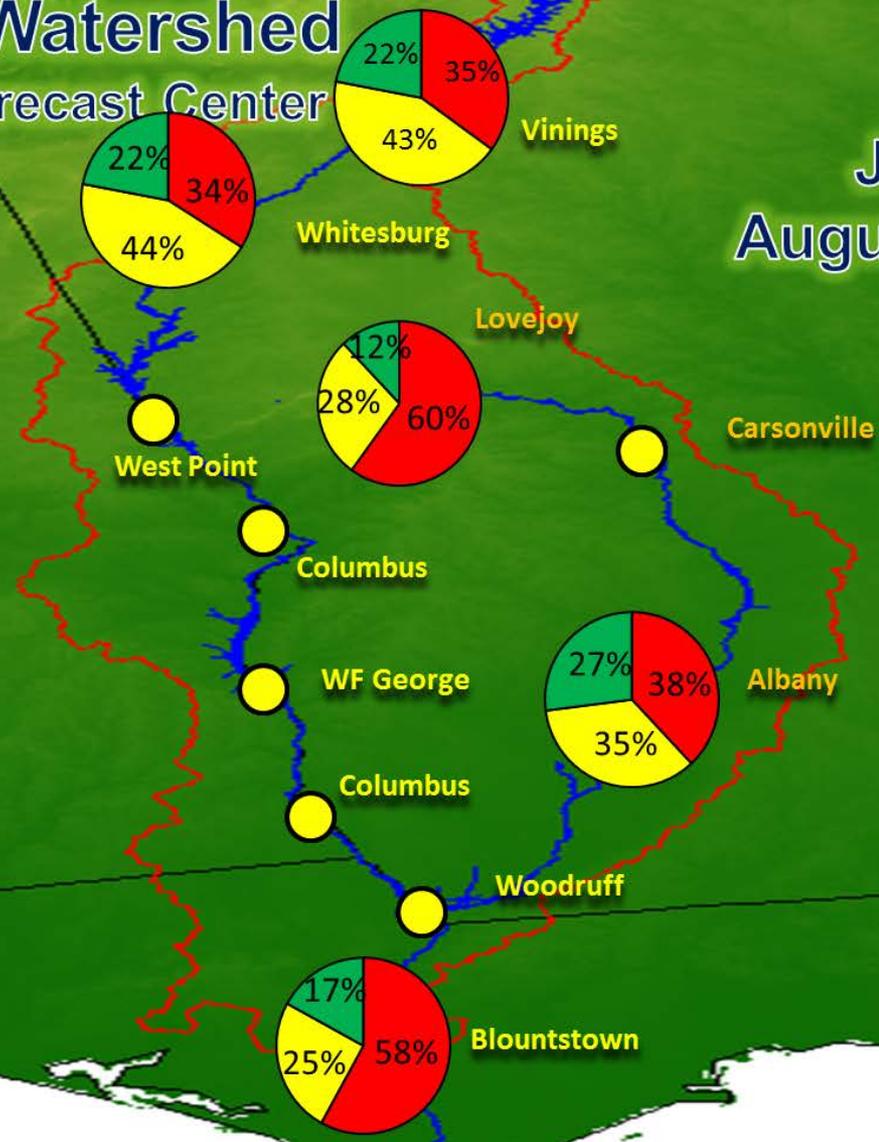
3-Month Mean Daily Streamflow Forecasts

Apalachicola Watershed

Southeast River Forecast Center

June 1st - August 31st 2015

-  Above Normal
-  Near Normal
-  Below Normal



Summary – David Zierden

- Record-setting rainfall in May for the U.S., Texas, Oklahoma, and Colorado.
- Mostly normal rainfall the past 30-90 days for upper and middle ACF, dry in the lower basin.
- Lower ACF designated as Abnormally Dry by the *US Drought Monitor*.
- Tropical Storm Bill to bring more rain and flooding to Texas and Oklahoma, Southeast remains under high pressure ridge.
- Warmer than normal temperature forecasted for next 8-45 days, usually coinciding with dry conditions.
- Heavy May and June rainfall typical for Texas and Oklahoma during strong El Nino's.
- El Nino continues to strengthen, near “Strong” levels.
- CPC Outlooks strongly favor pattern of above normal rainfall for Southern U.S. for the next 1-3 months
- Strong/Early El Nino composites suggest possible dryness late in the summer.

Summary-Paul Ankcorn

- Realtime streamflows are in the normal to below normal range for most of the upper ACF basin and in the normal range for the lower ACF.
- Inflows into Lake Lanier are in the below normal range for the 28-day average flows.
- Streamflows are in the normal range throughout the Flint River basin for the 28-day average flows.
- Groundwater levels are in the normal range in Southwest Georgia.

Summary- Jeff Dobur

- 1 Month Streamflow forecast - Near Normal
- 3 Month Streamflow forecast – Dry May has set probabilities to near to below normal range.
- Pie Charts do not consider recent wet weather or 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

July 21, 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