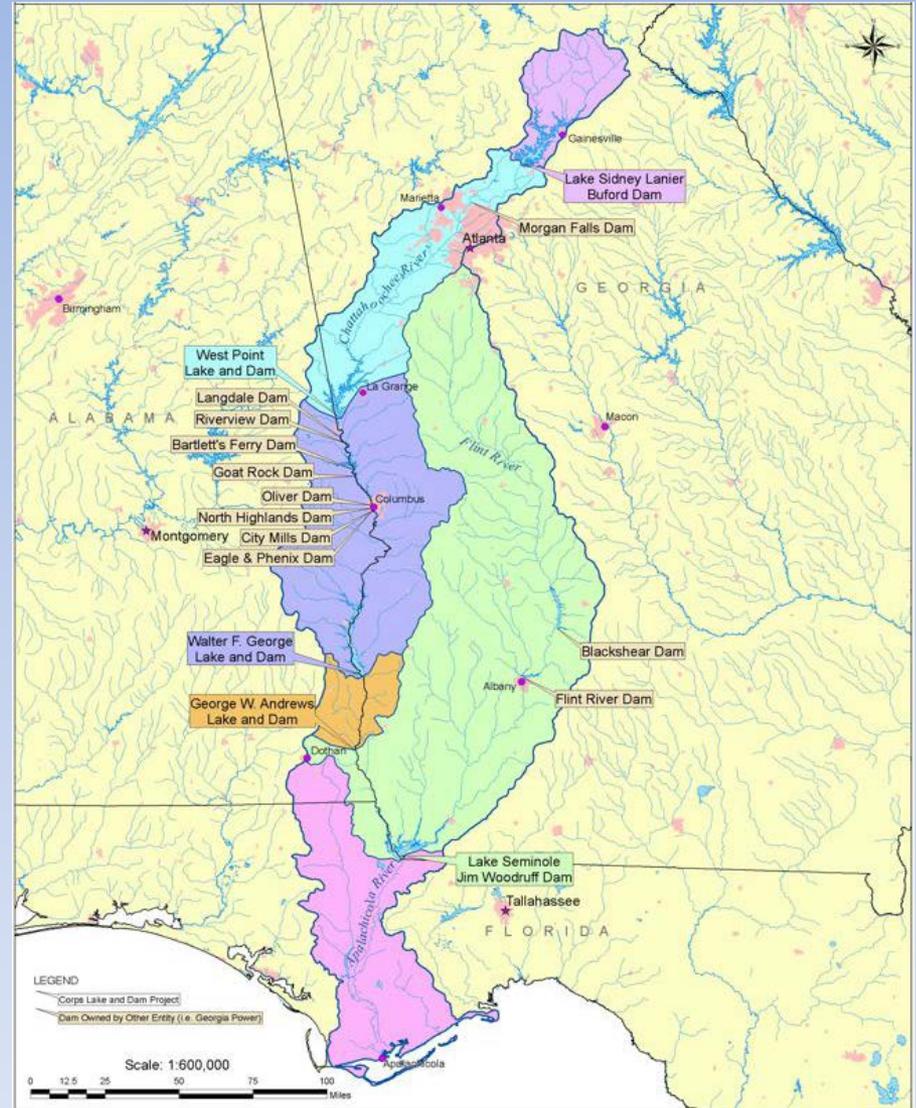
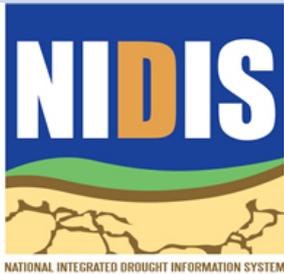


# National Integrated Drought Information System

## Southeast US Pilot for Apalachicola-Flint-Chattahoochee River Basin

22 January 2013



# Outline

Welcome – Keith Ingram, Southeast Climate Consortium, UF

Current drought status and how we got here – Pam Knox, University of Georgia

Tropical storms – Keith Ingram, SECC

Streamflows and groundwater – Tony Gotvald, USGS

Reservoir status and projections – Robert Allen, US ACE

Seasonal forecasts and outlooks – Pam Knox, UGA

Streamflow forecasts – Todd Hamill, SE River Forecast Center, NOAA

Summary and Discussion – Keith Ingram, SECC

# Current drought status from Drought Monitor

## U.S. Drought Monitor

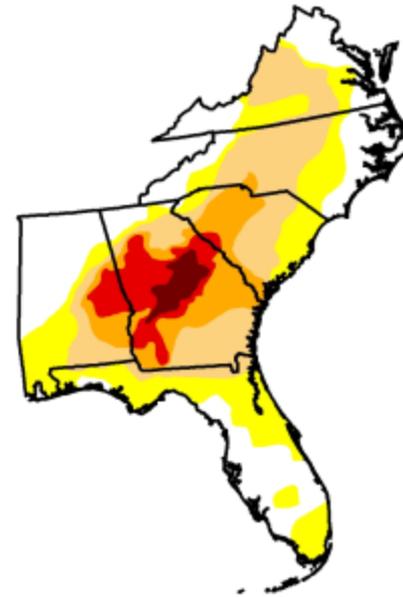
January 15, 2013

Valid 7 a.m. EST

### Southeast

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	30.04	69.96	44.98	19.89	8.98	2.18
Last Week (01/08/2013 map)	28.57	71.43	44.97	20.40	9.51	2.10
3 Months Ago (10/16/2012 map)	65.22	34.78	14.74	10.20	5.87	2.03
Start of Calendar Year (01/01/2013 map)	29.15	70.85	45.65	20.64	9.58	2.10
Start of Water Year (09/25/2012 map)	66.49	33.51	17.18	11.50	8.53	3.52
One Year Ago (01/10/2012 map)	29.06	70.94	49.45	29.88	19.21	0.00



Intensity:

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

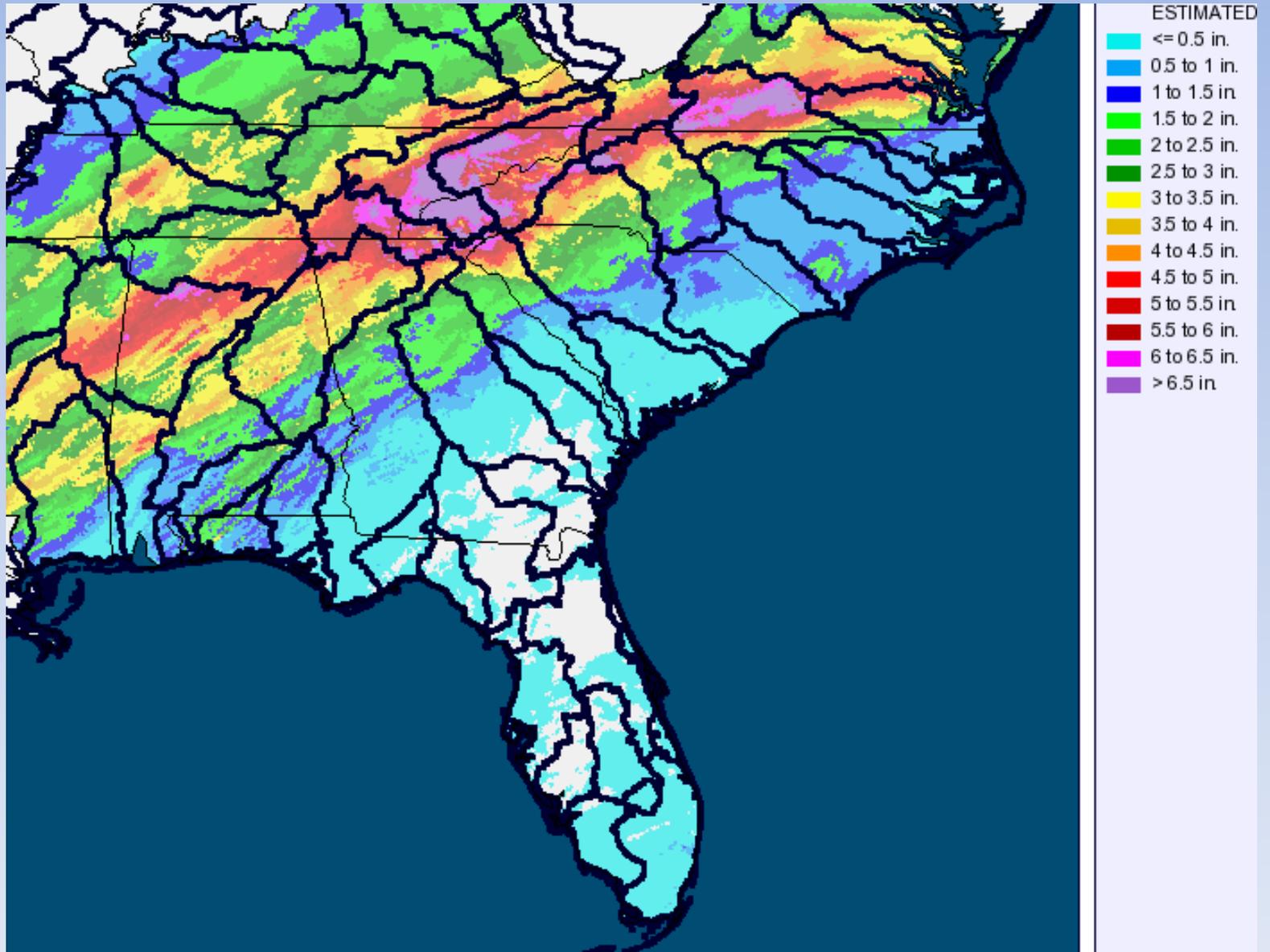
The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.

<http://droughtmonitor.unl.edu>



Released Thursday, January 17, 2013  
David Simeral, Western Regional Climate Center

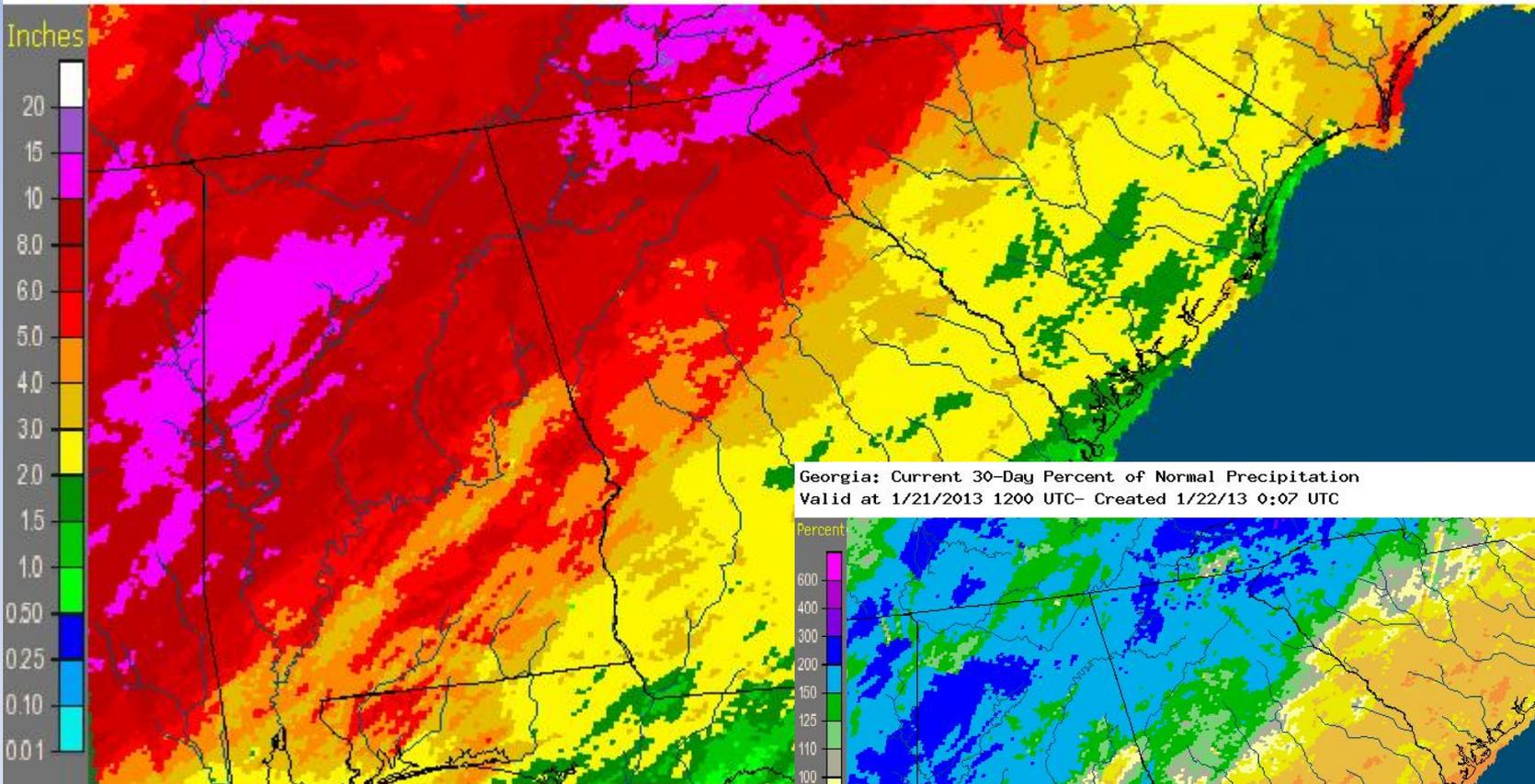
# 7-Day Precipitation Totals



# 30-Day Rainfall Totals

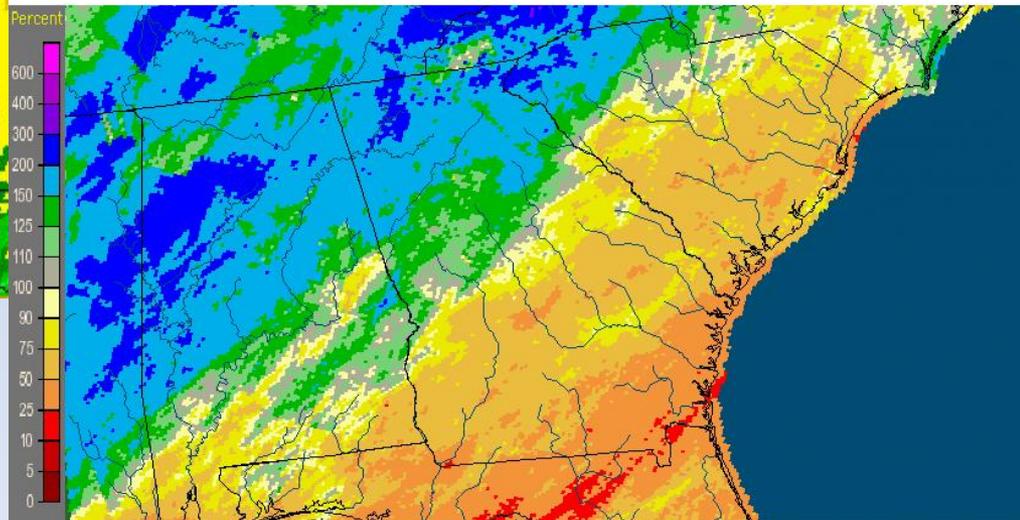
Georgia: Current 30-Day Observed Precipitation

Valid at 1/21/2013 1200 UTC- Created 1/22/13 0:02 UTC



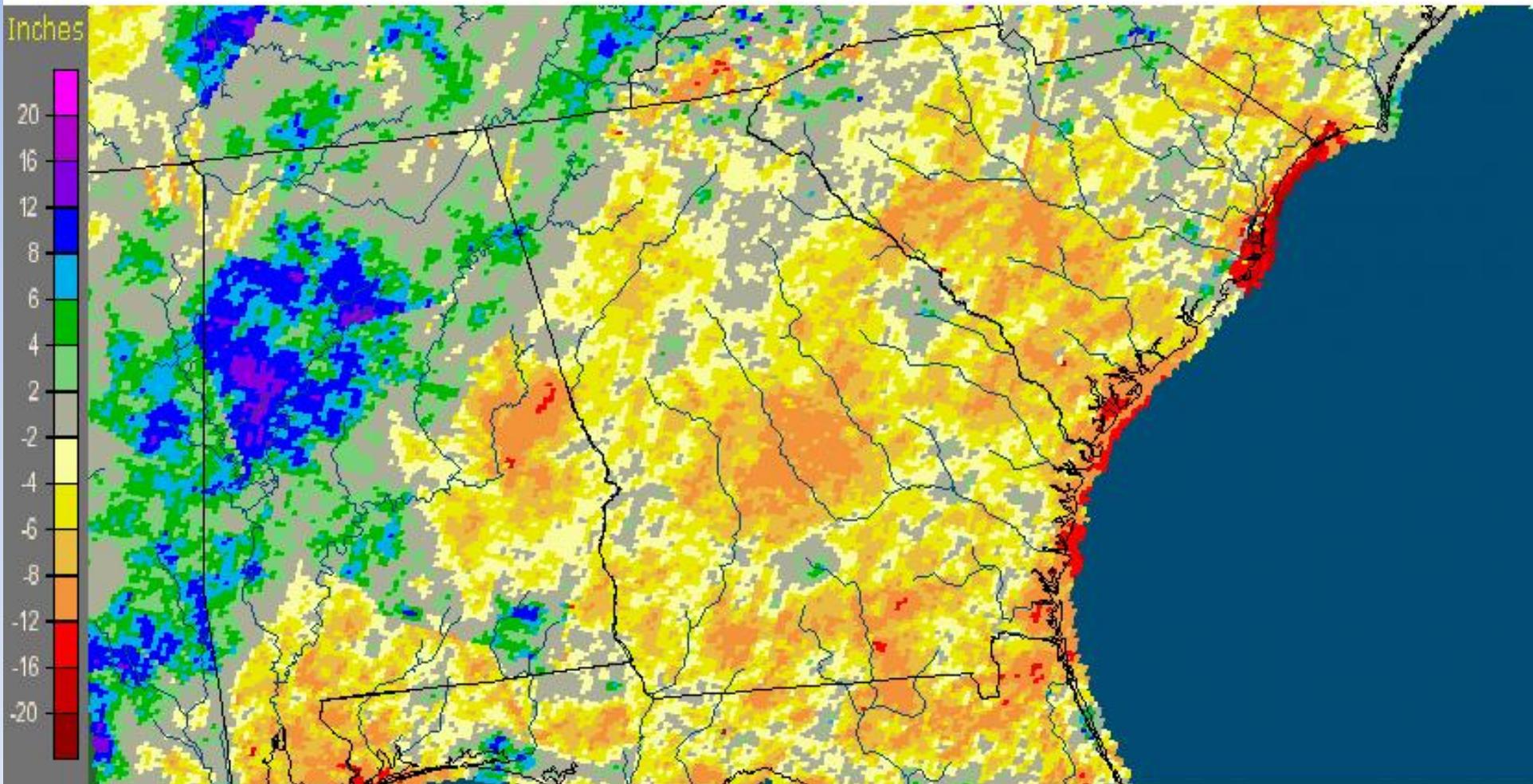
Georgia: Current 30-Day Percent of Normal Precipitation

Valid at 1/21/2013 1200 UTC- Created 1/22/13 0:07 UTC



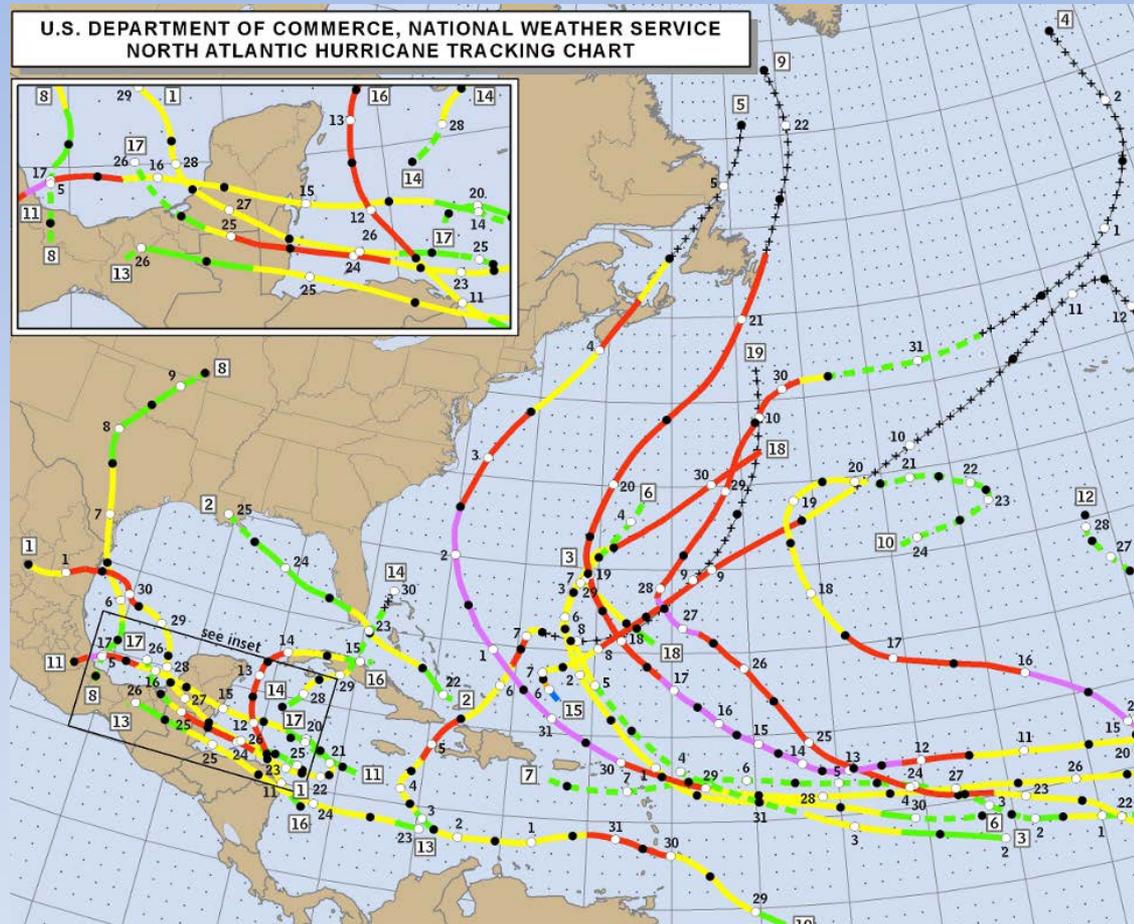
# 180-day Rainfall Deficits

Georgia: Current 180-Day Departure from Normal Precipitation  
Valid at 1/21/2013 1200 UTC- Created 1/22/13 0:19 UTC



# Tropical Storms of 2010

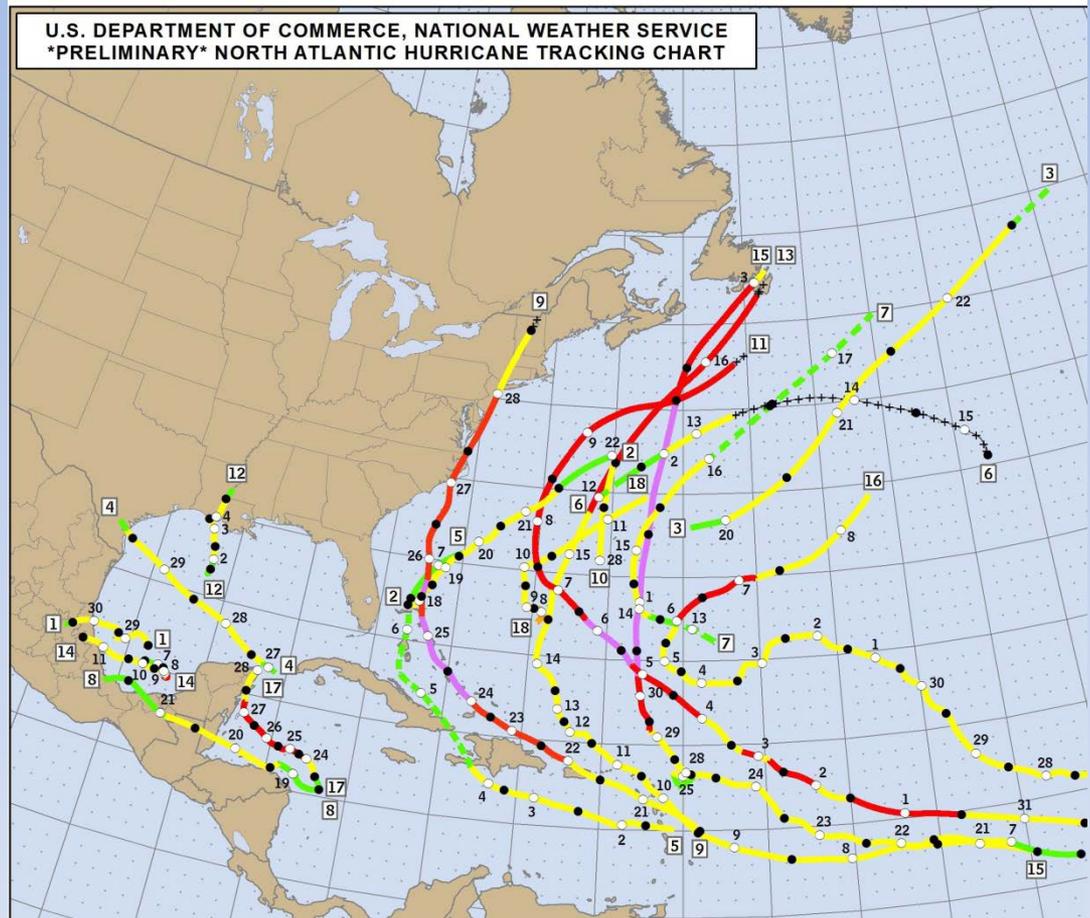
- Tropical storms bring welcome rain, but also risk of flood and wind damage
- Tropical storms are very important for recharging the hydrological systems of the Southeast
- The Southeast received very little rain from tropical storms in 2010, with none falling in the ACF



[http://www.tropicalweather.net/picts/2010\\_tracks.jpg](http://www.tropicalweather.net/picts/2010_tracks.jpg)

# Tropical Storms of 2011

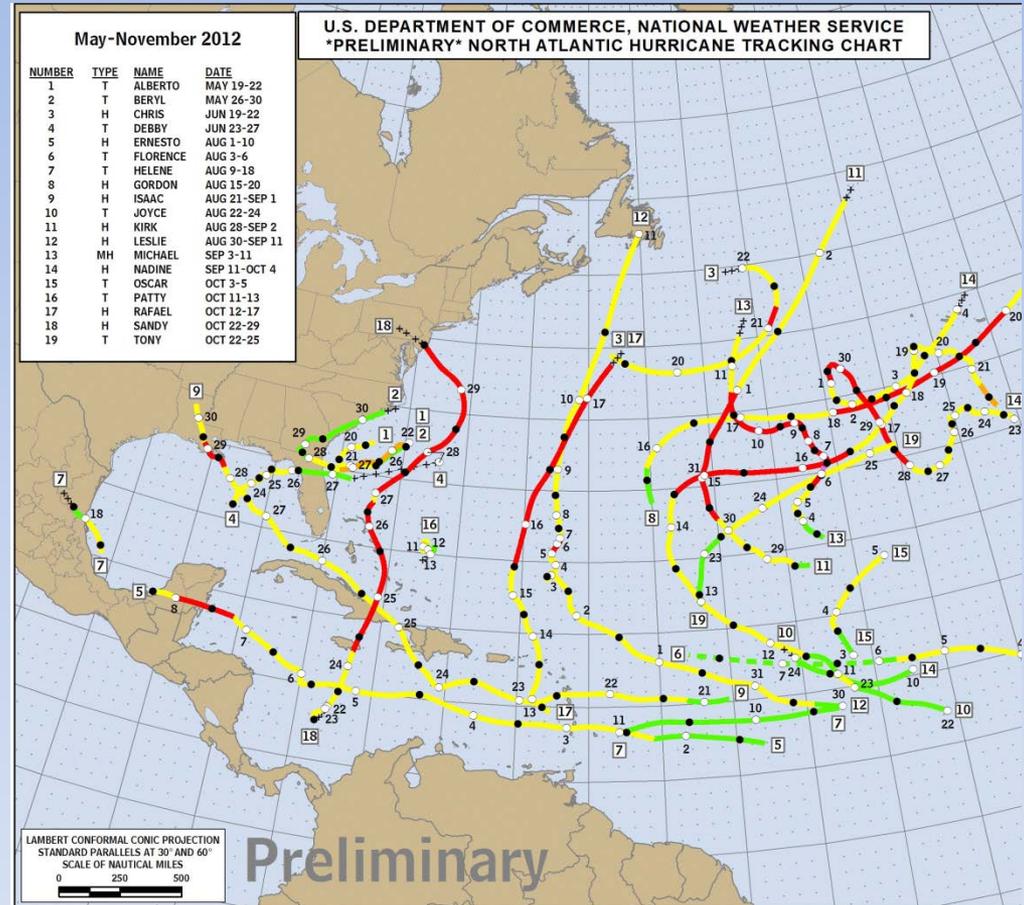
- Though there were 18 named storms in 2011, only three made landfall in the USA and none brought rain to the ACF



[http://www.tropicalweather.net/picts/2011\\_tracks.jpg](http://www.tropicalweather.net/picts/2011_tracks.jpg)

# Tropical Storms of 2012

Tropical storms Beryl and Debbie brought some rain to the ACF, but only the southern part of the basin

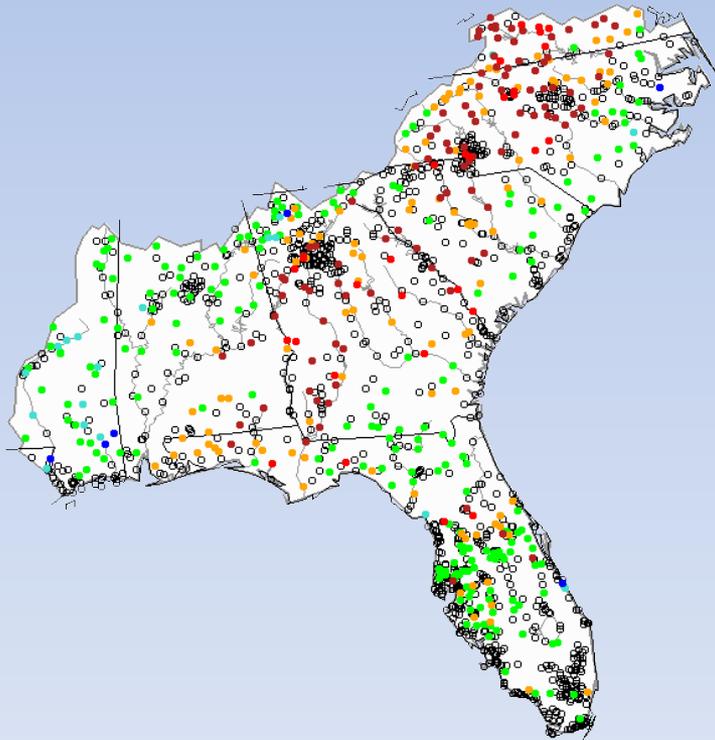


[http://www.tropicalweather.net/picts/2012\\_tracks.jpg](http://www.tropicalweather.net/picts/2012_tracks.jpg)

# Realtime stream flow compared with historical monthly averages

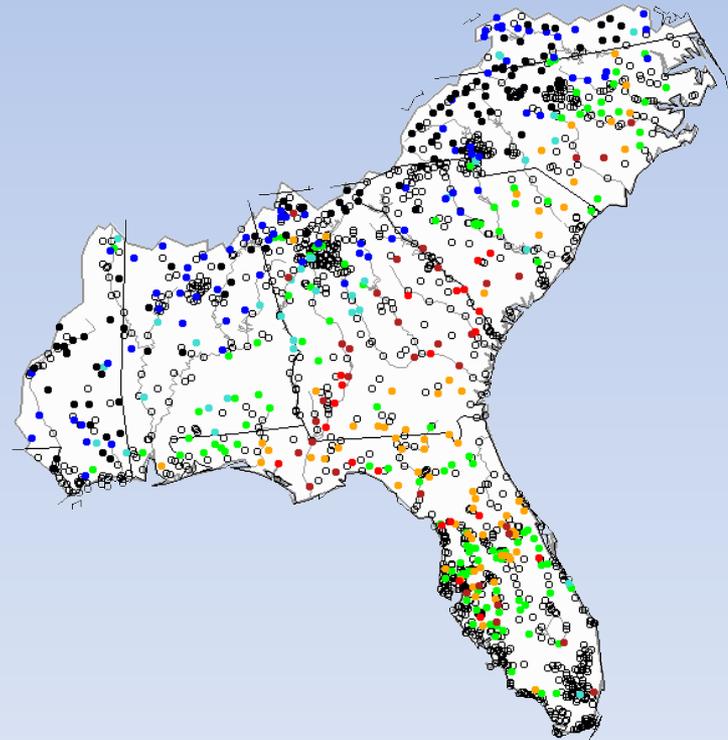
## Previous Brief:

Monday, January 07, 2013 06:30ET



## Current:

Friday, January 18, 2013 07:30ET



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>

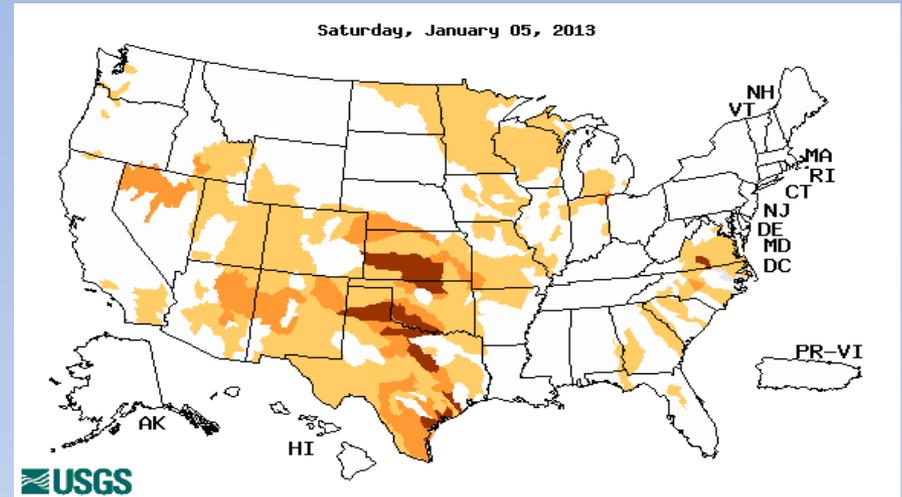
# Below Normal 7-day Average Streamflows

Previous brief:

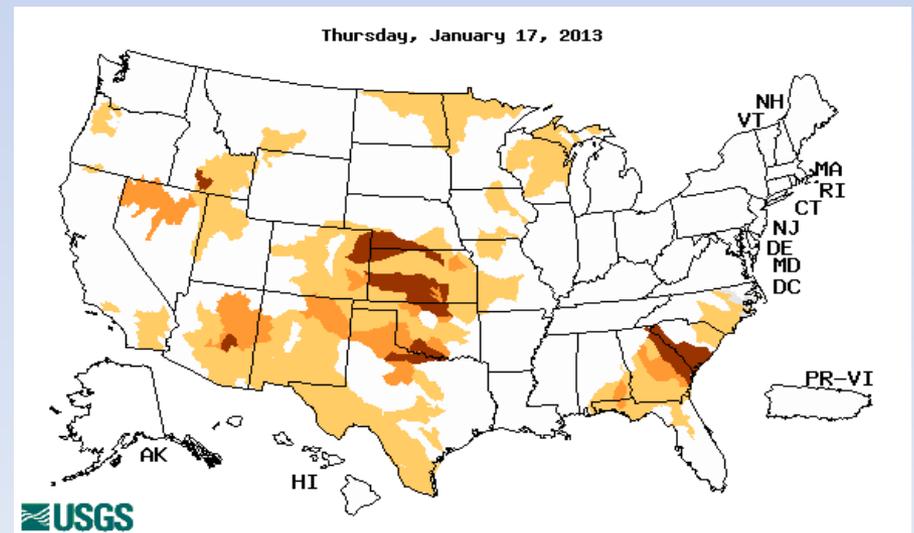
Below normal 7-day average streamflow as compared with historical streamflow for day shown

Current:

<http://waterwatch.usgs.gov>



Explanation - Percentile classes				
Low	$\leq 5$	6-9	10-24	Sufficiently above normal hydrologic regime
Extreme hydrologic drought	Severe hydrologic drought	Moderate hydrologic drought	Below normal	



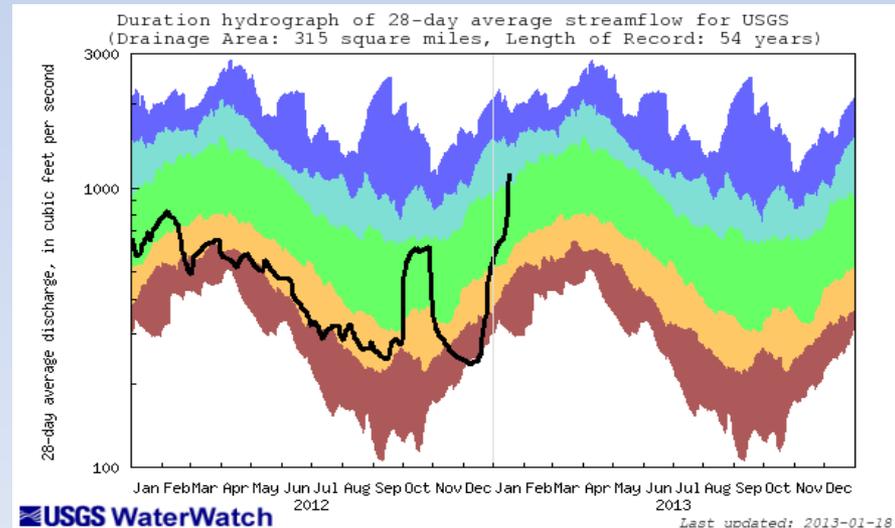
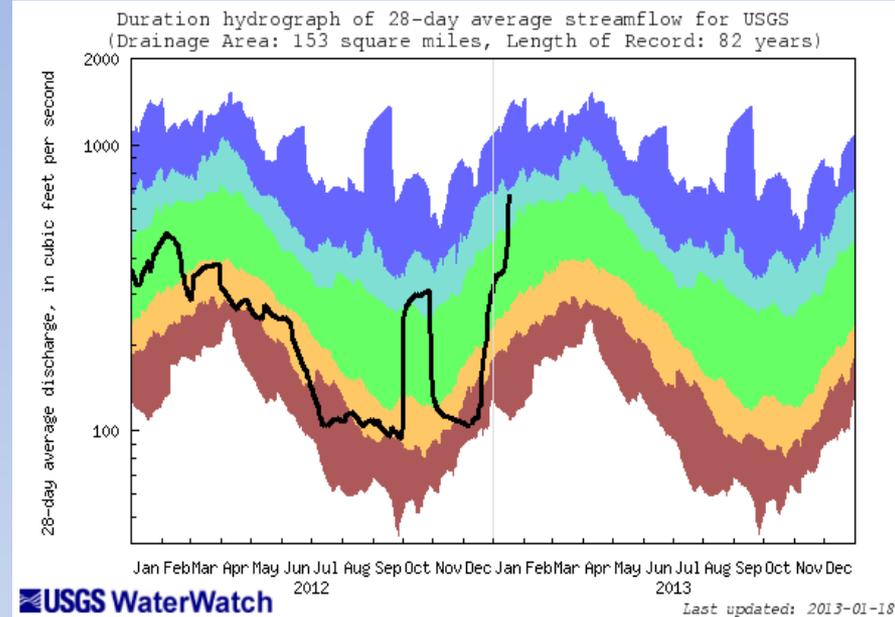
# Lake Lanier Inflows

Chestatee near  
Dahlonega  
(02333500)

<http://waterwatch.usgs.gov>

Chattahoochee near  
Cornelia (02331600)

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



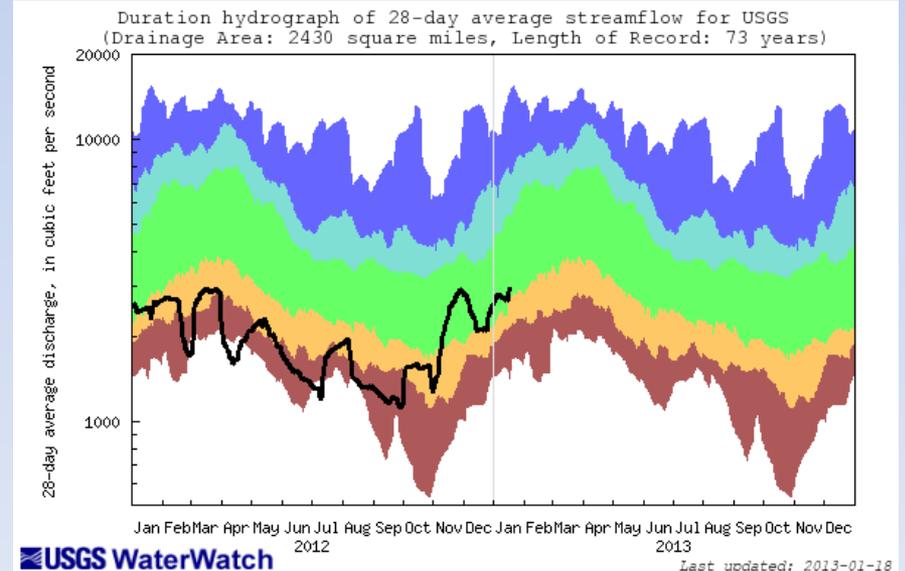
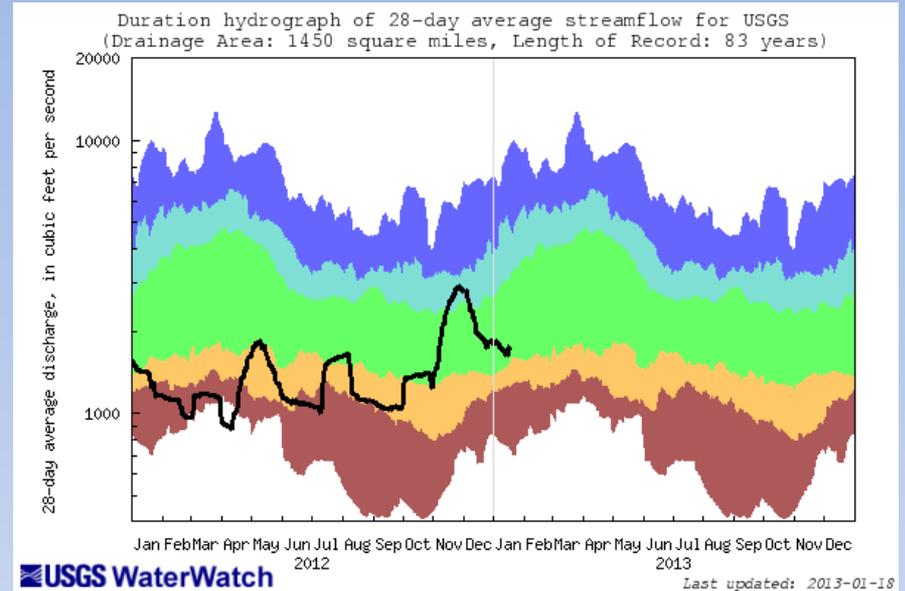
# Current Streamflows

Chattahoochee at  
Atlanta (02336000)

<http://waterwatch.usgs.gov>

Chattahoochee near  
Whitesburg  
(02338000)

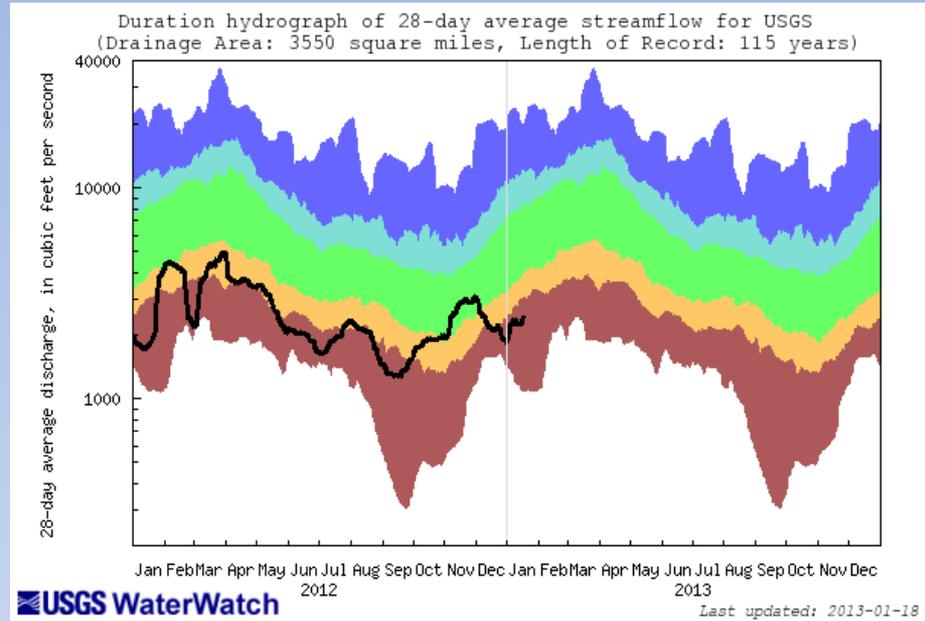
Explanation - Percentile classes					Flow
lowest-10th percentile	10-24	25-75	76-90	90th percentile-highest	
Much below normal	Below normal	Normal	Above normal	Much above normal	



# Current Streamflows

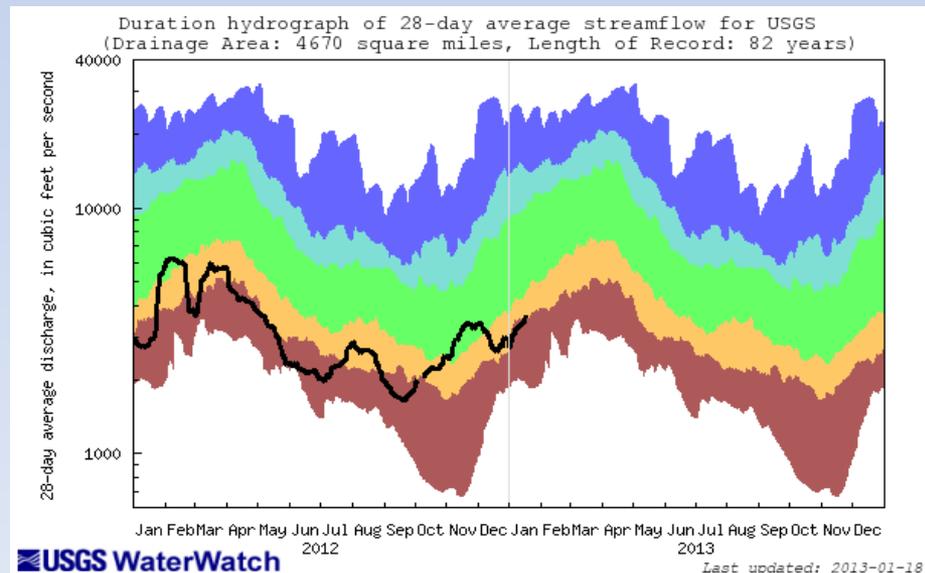
## Chattahoochee at West Point (02339500)

<http://waterwatch.usgs.gov>



## Chattahoochee near Columbus (02341505)

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



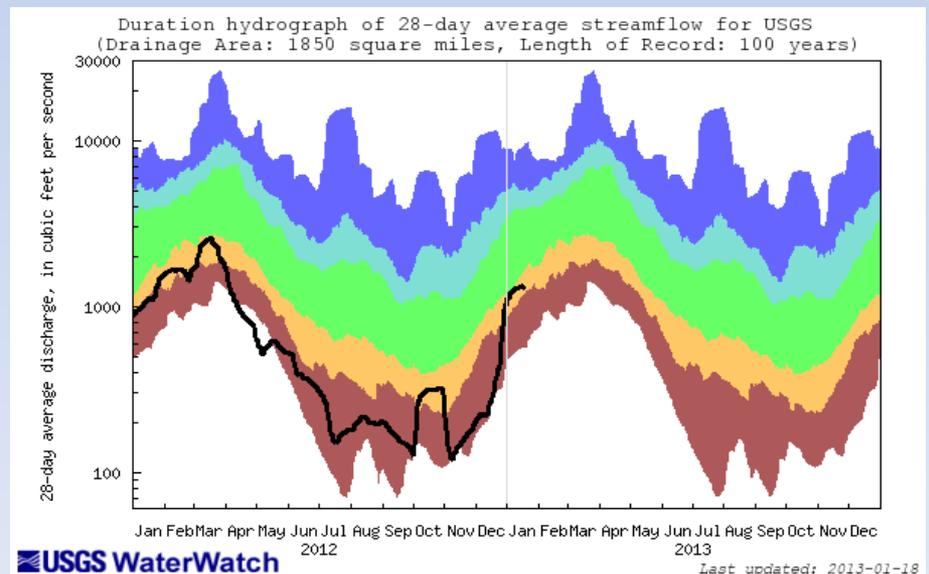
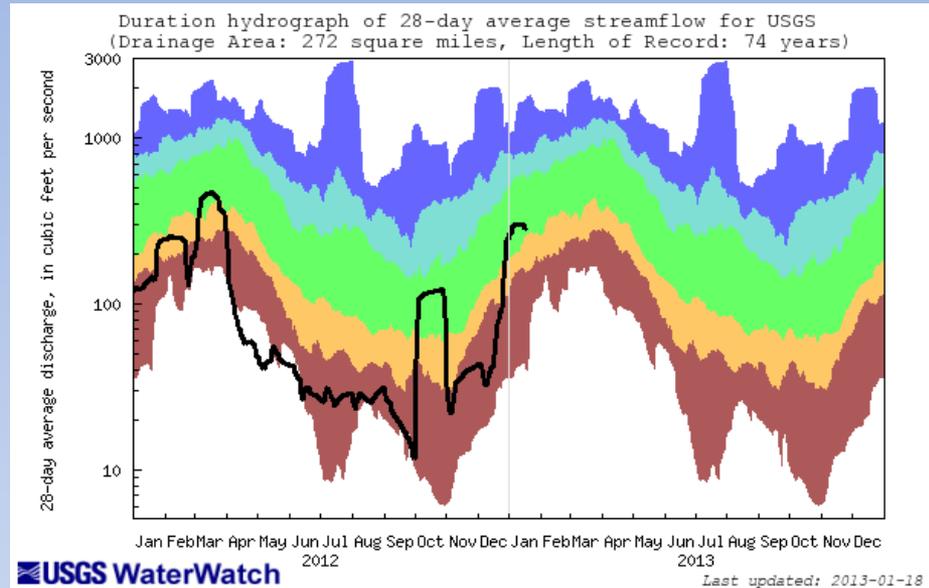
# Current Streamflows

Flint River near Griffin  
(02344500)

<http://waterwatch.usgs.gov>

Flint River near  
Carsonville  
(02347500)

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



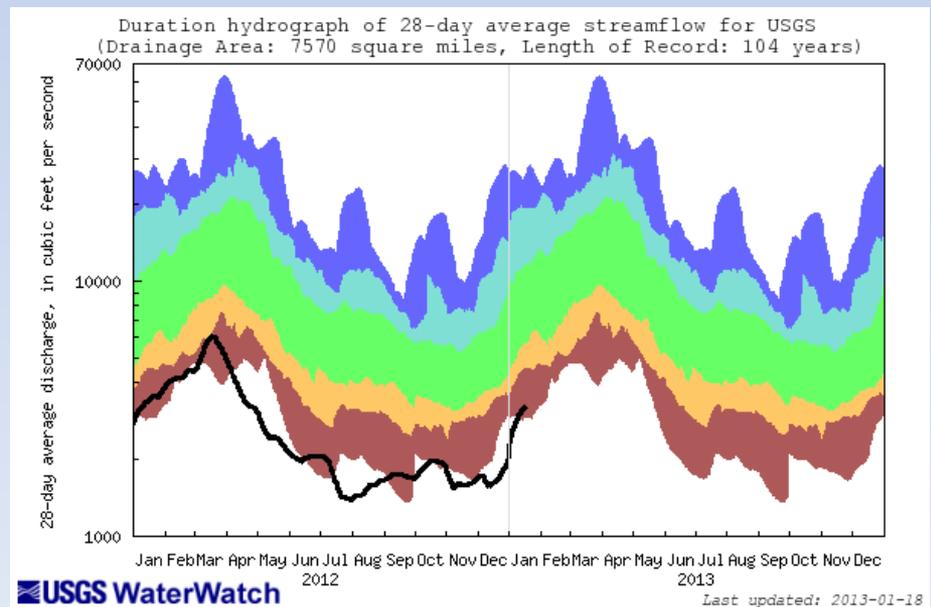
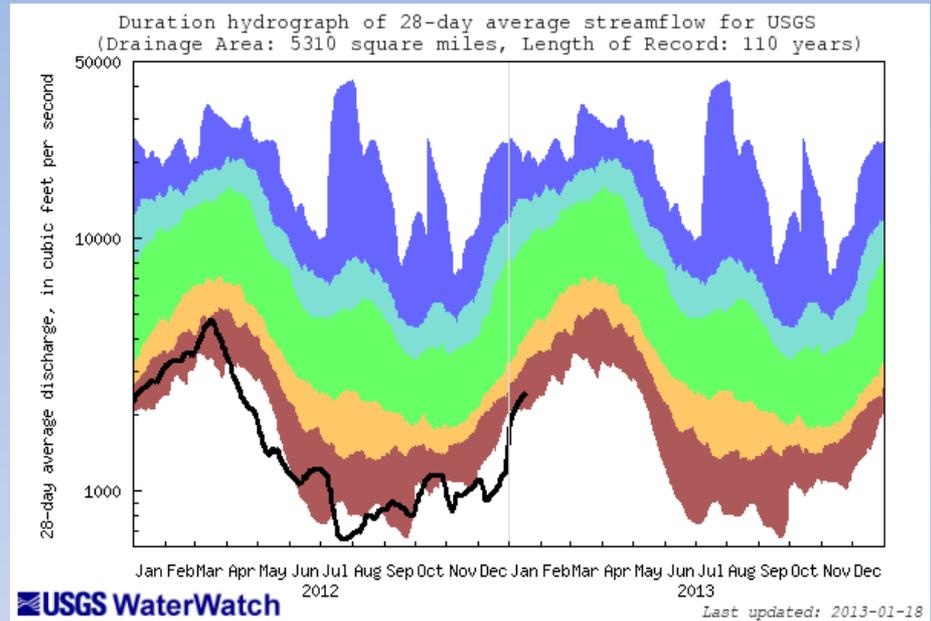
# Current Streamflows

Flint River at Albany  
(02352500)

<http://waterwatch.usgs.gov>

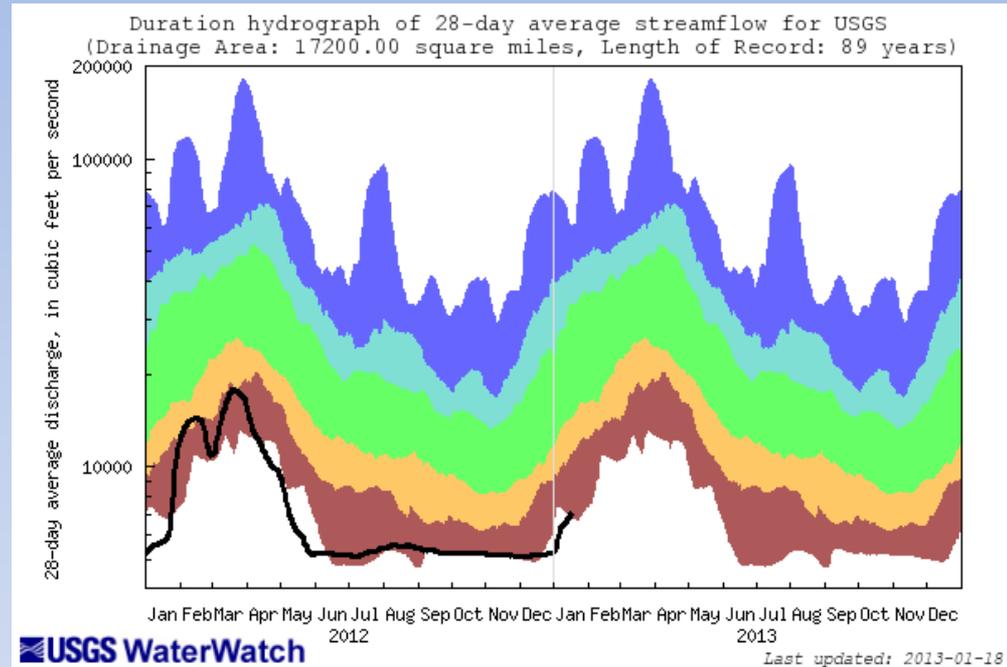
Flint at Bainbridge  
(02356000)

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



# Streamflows

Apalachicola at  
Chattahoochee  
(02358000)

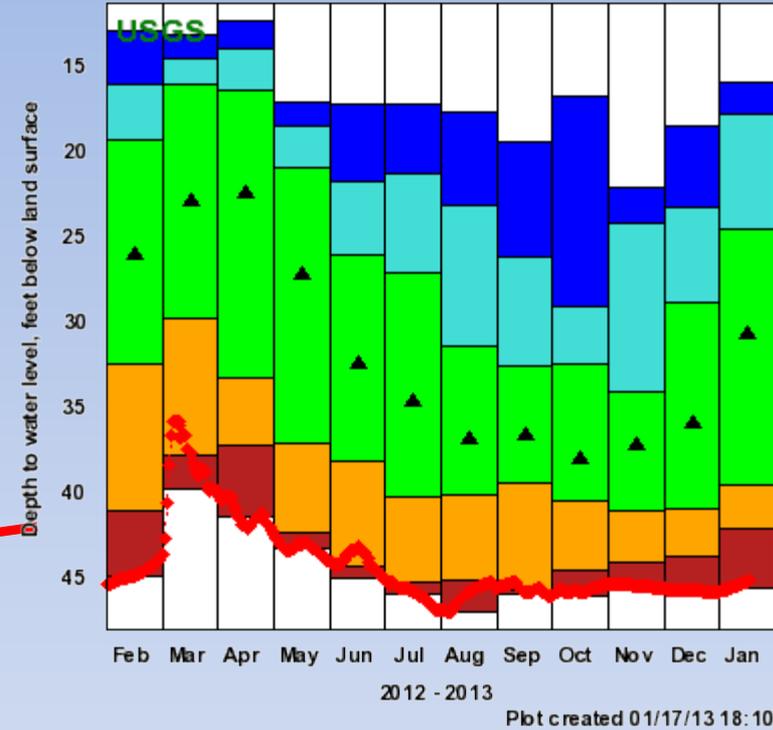
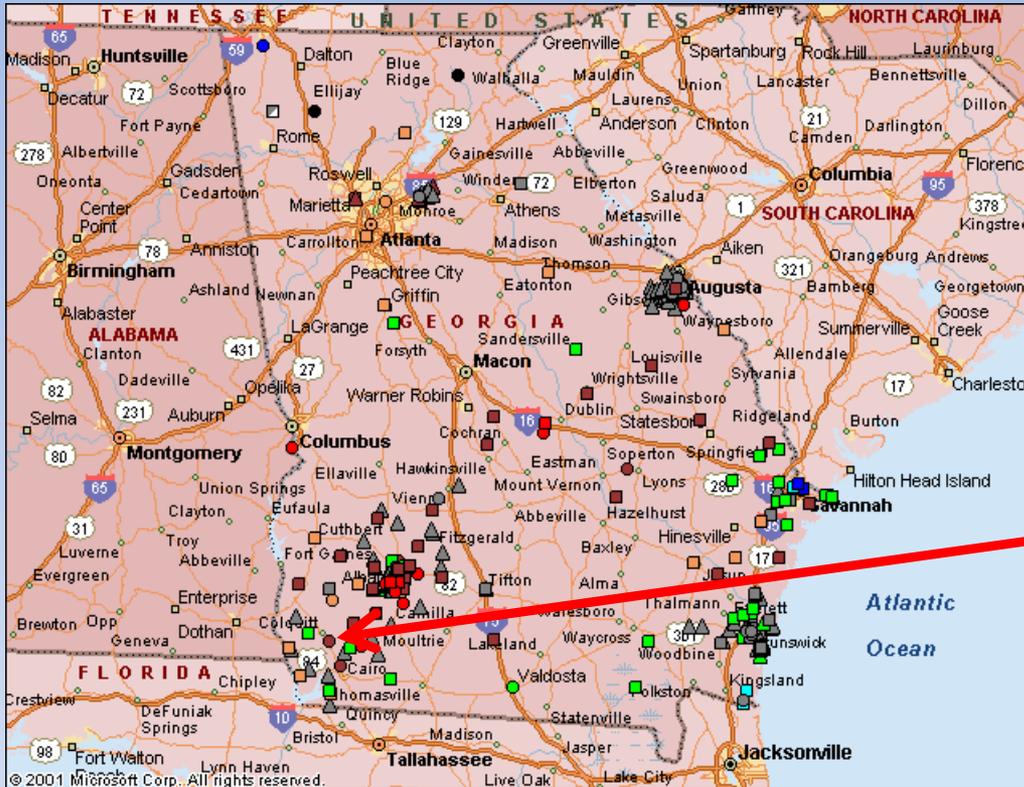


<http://waterwatch.usgs.gov>

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

# Groundwater Status

310651084404501 - 08G001

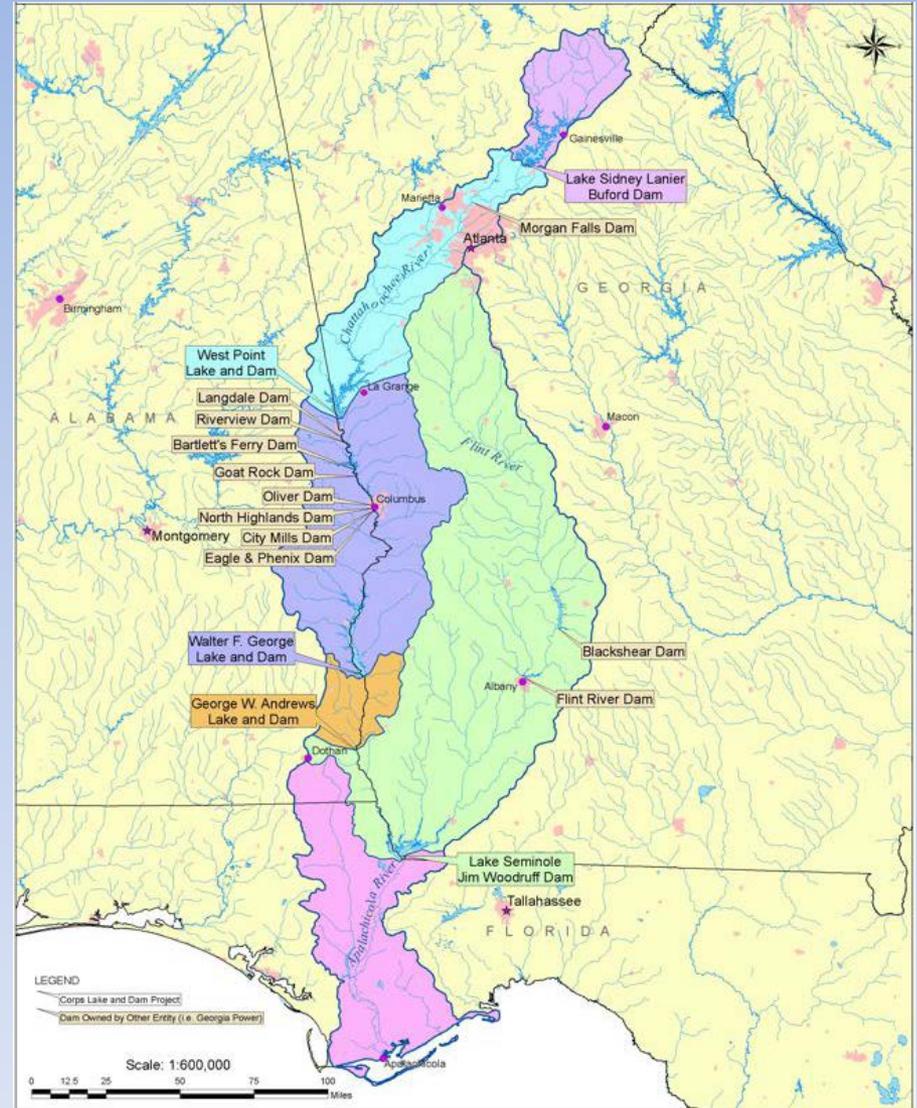
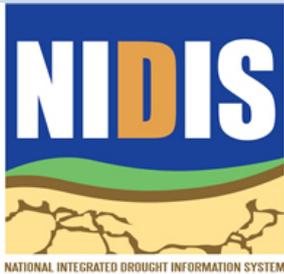


Explanation - Percentile classes (symbol color based on most recent measurement)							Wells		Springs	
● Low	● <10	● 10-24	● 25-75	● 76-90	● >90	● High	○ Real-Time	■	○ Continuous	■
	Much Below Normal	Below Normal	Normal	Above Normal	Much Above Normal		△ Periodic Measurements	■		

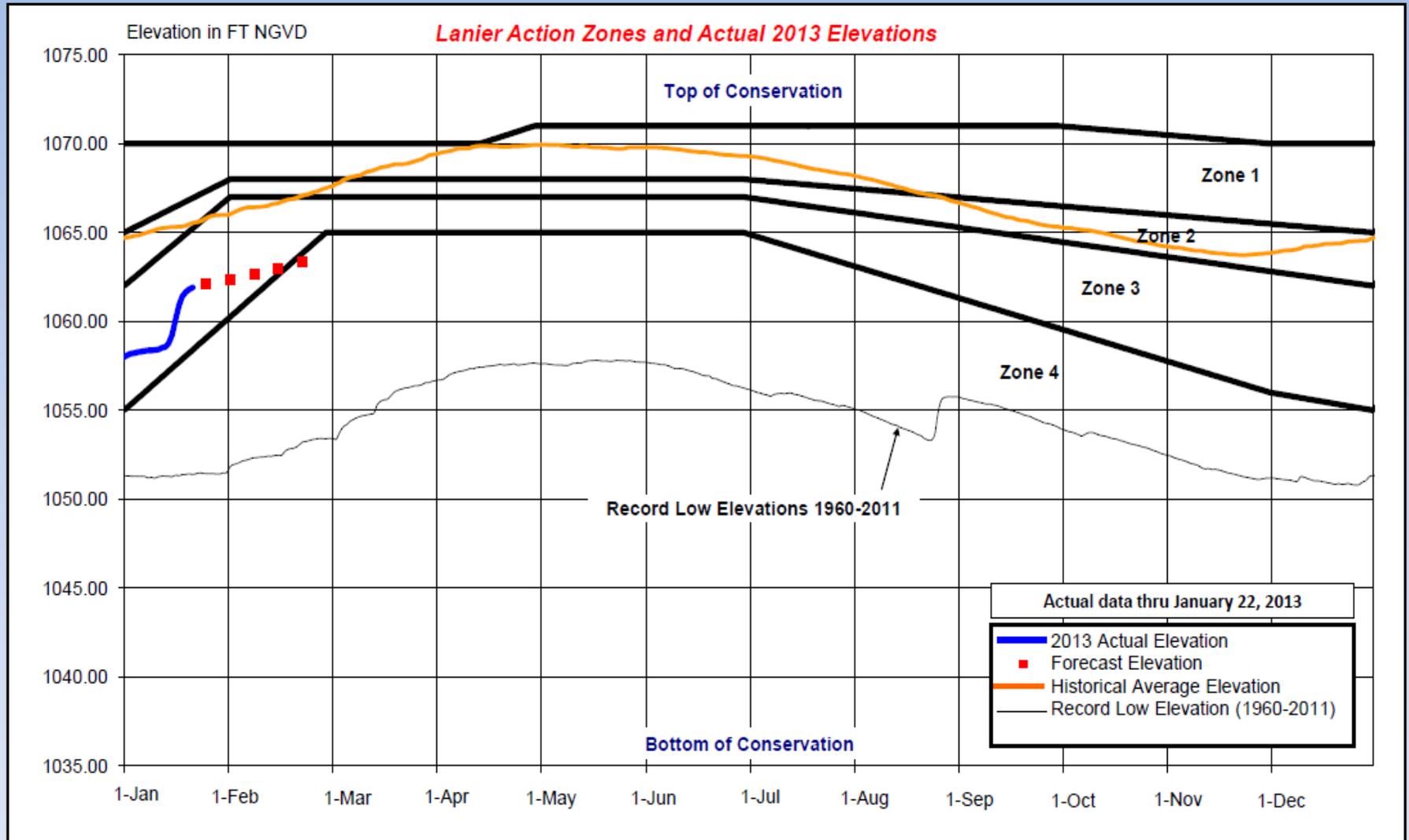
Miller County, GA  
(Upper Floridan Aquifer)

<http://groundwaterwatch.usgs.gov>

# USACE – ACF Operations

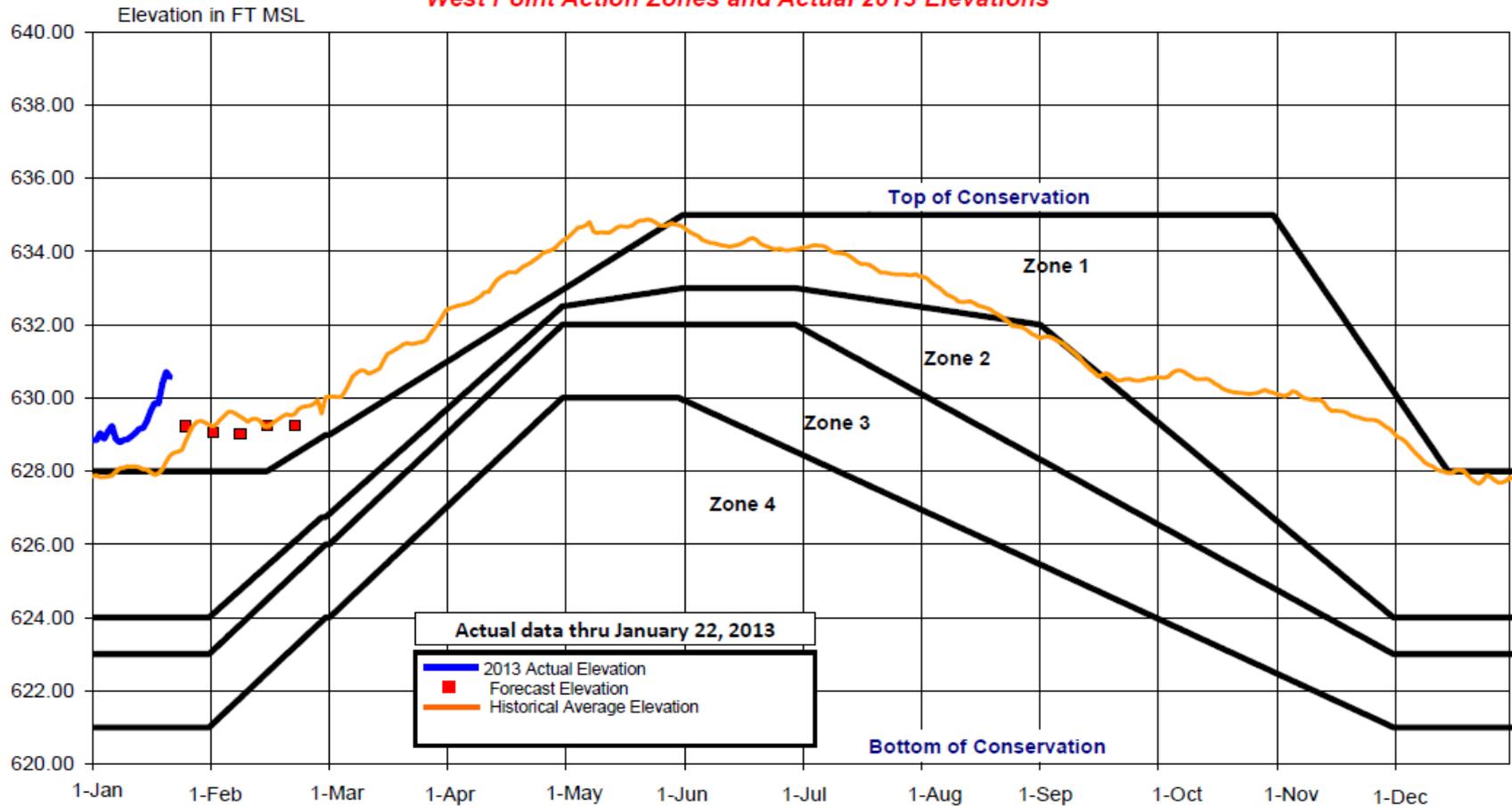


# Lake Lanier



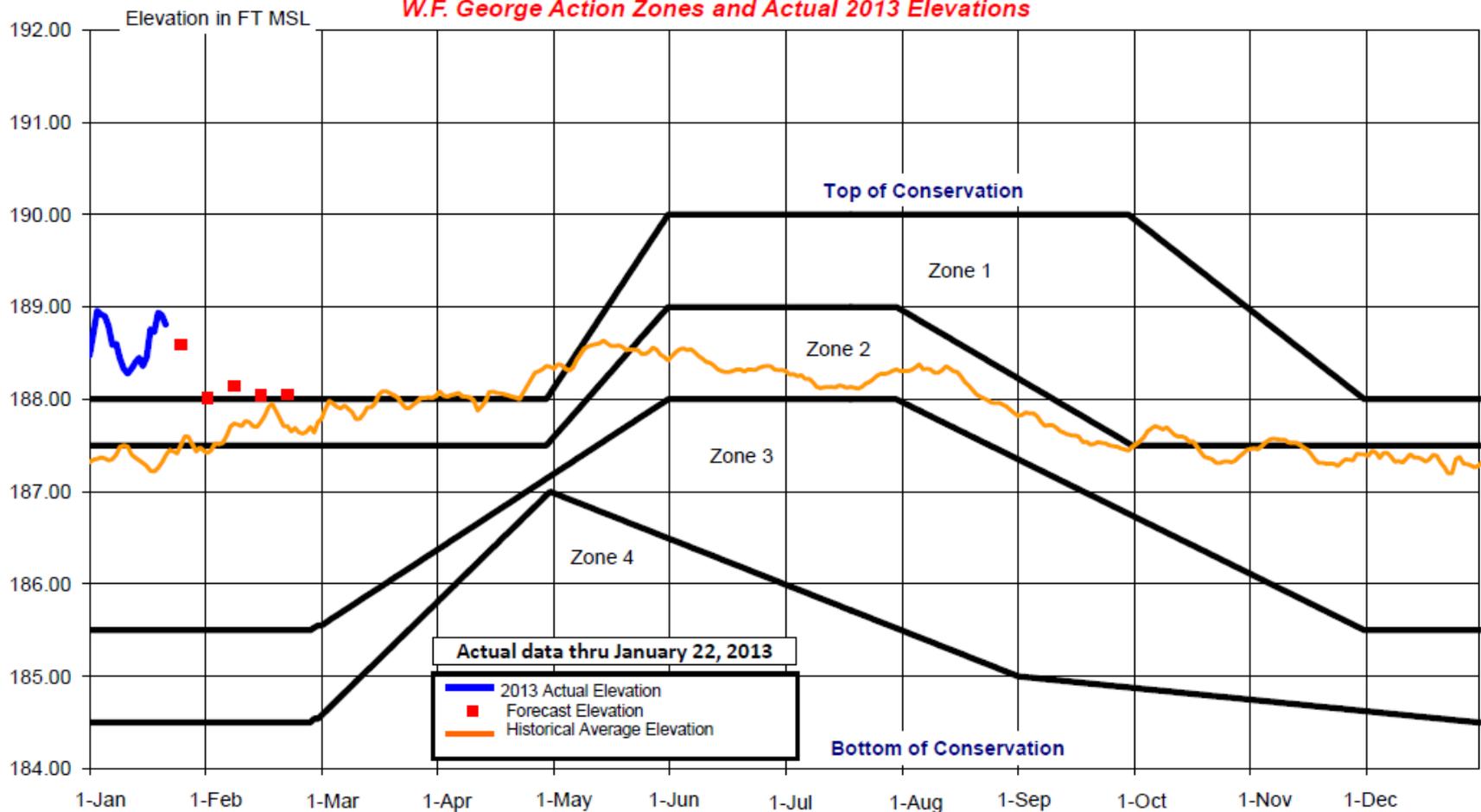
# West Point

**West Point Action Zones and Actual 2013 Elevations**



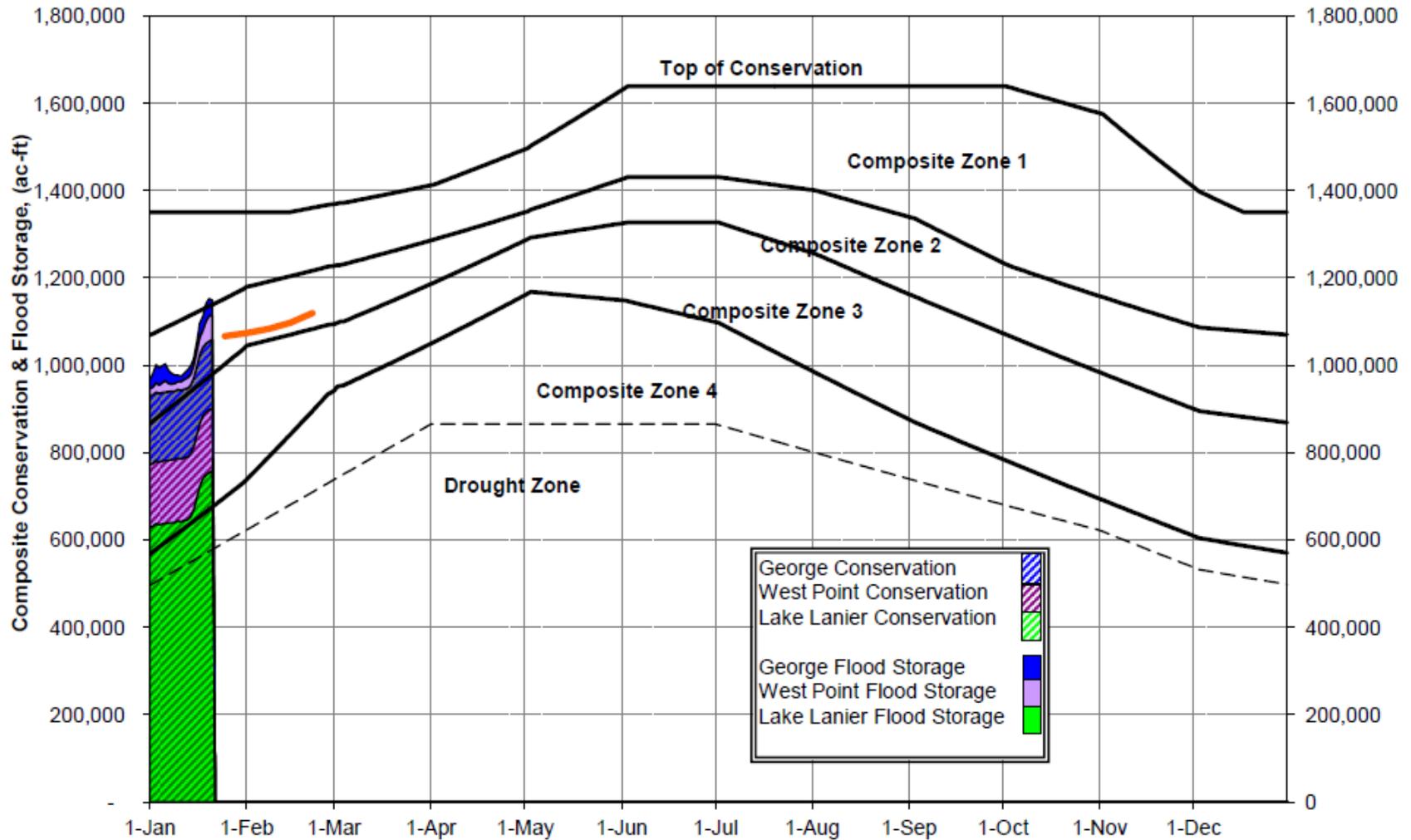
# W.F. George

**W.F. George Action Zones and Actual 2013 Elevations**





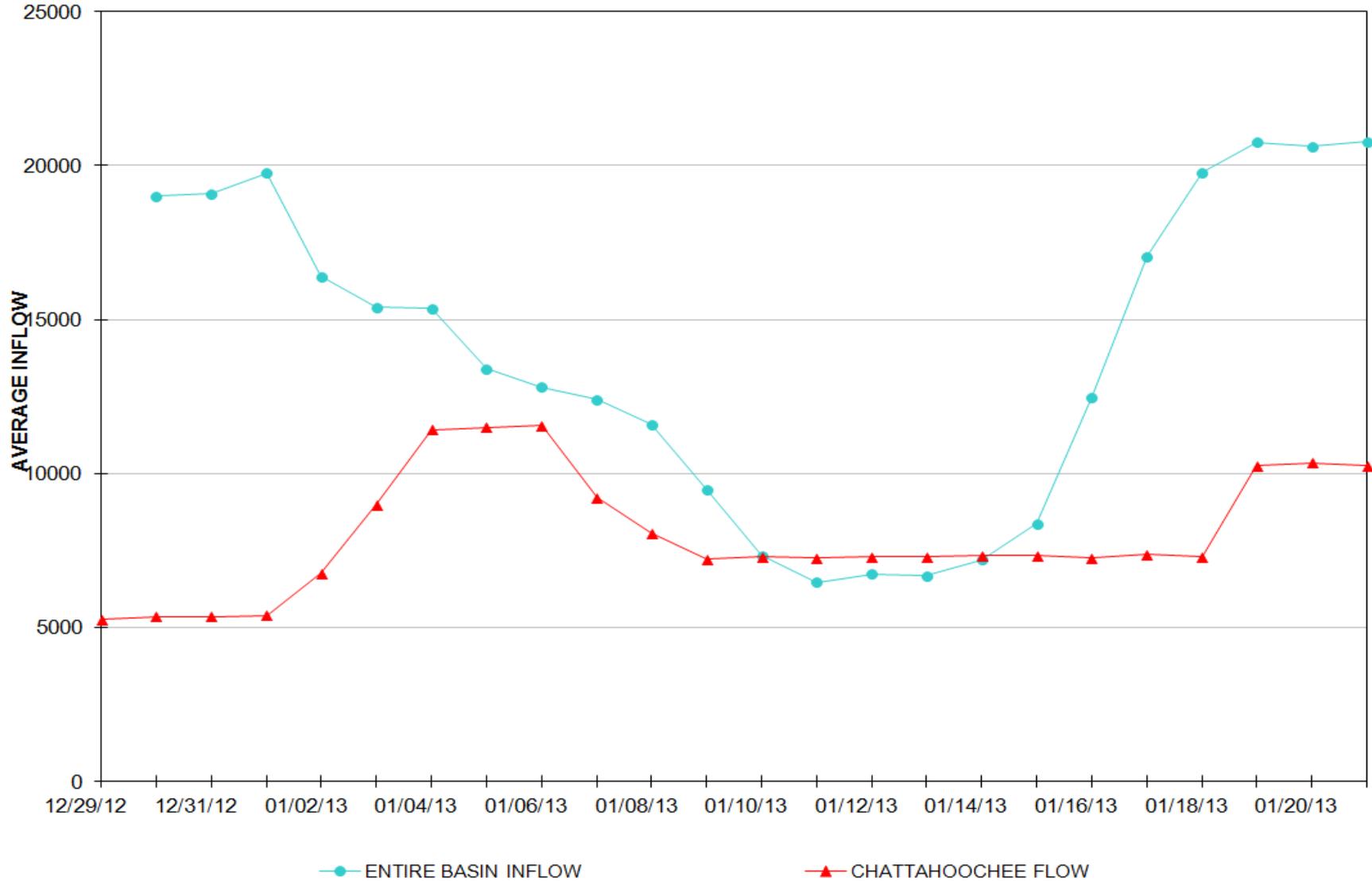
## 2013 ACF Basin Composite Conservation and Flood Storage



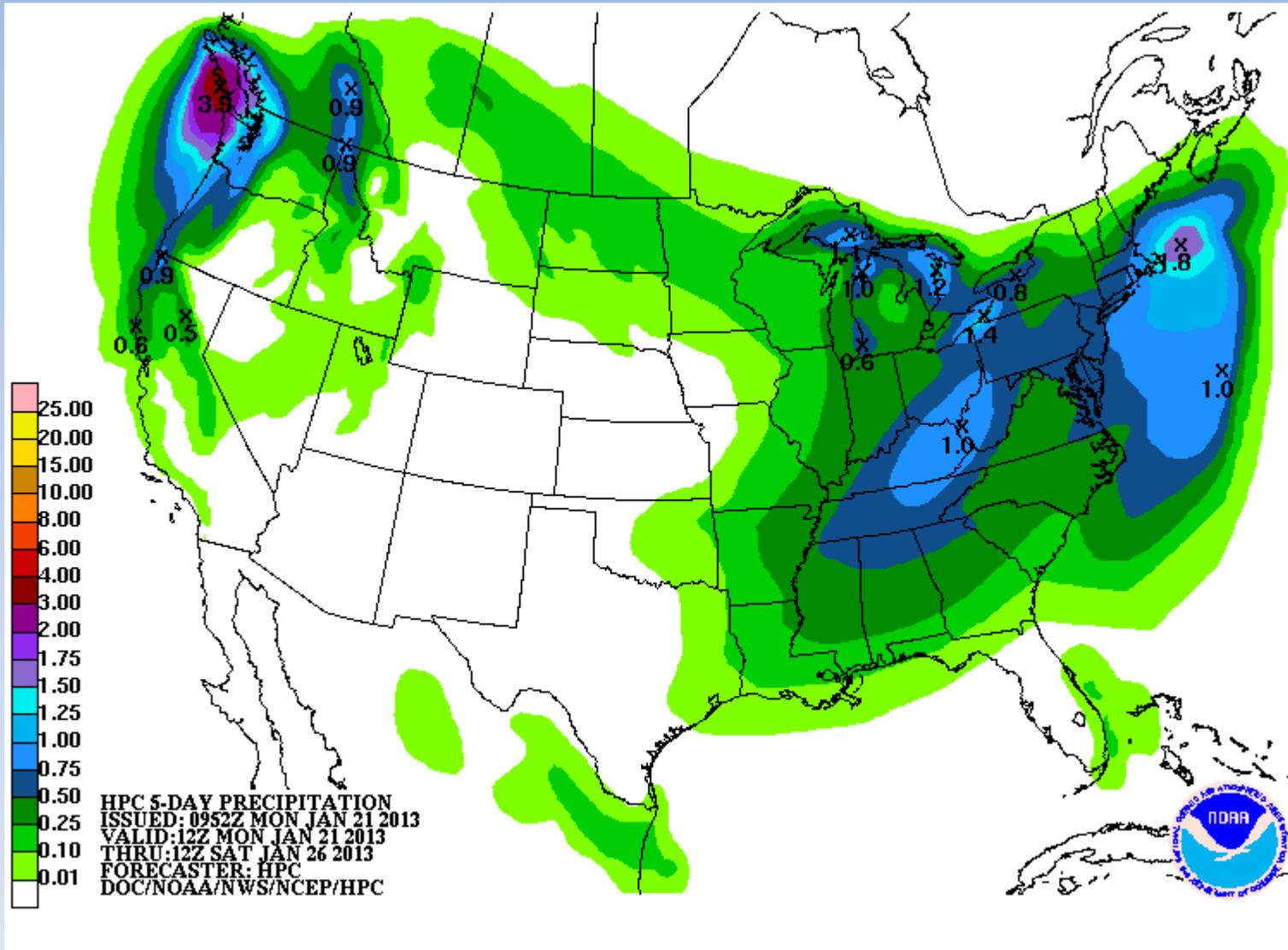
Actual data thru 1-22-2013

Add value of 1,856,000 acre-ft to include inactive storage.

# 7-DAY MOVING AVERAGE INFLOW VERSUS 1-DAY CHATTAHOOCHEE FLOW

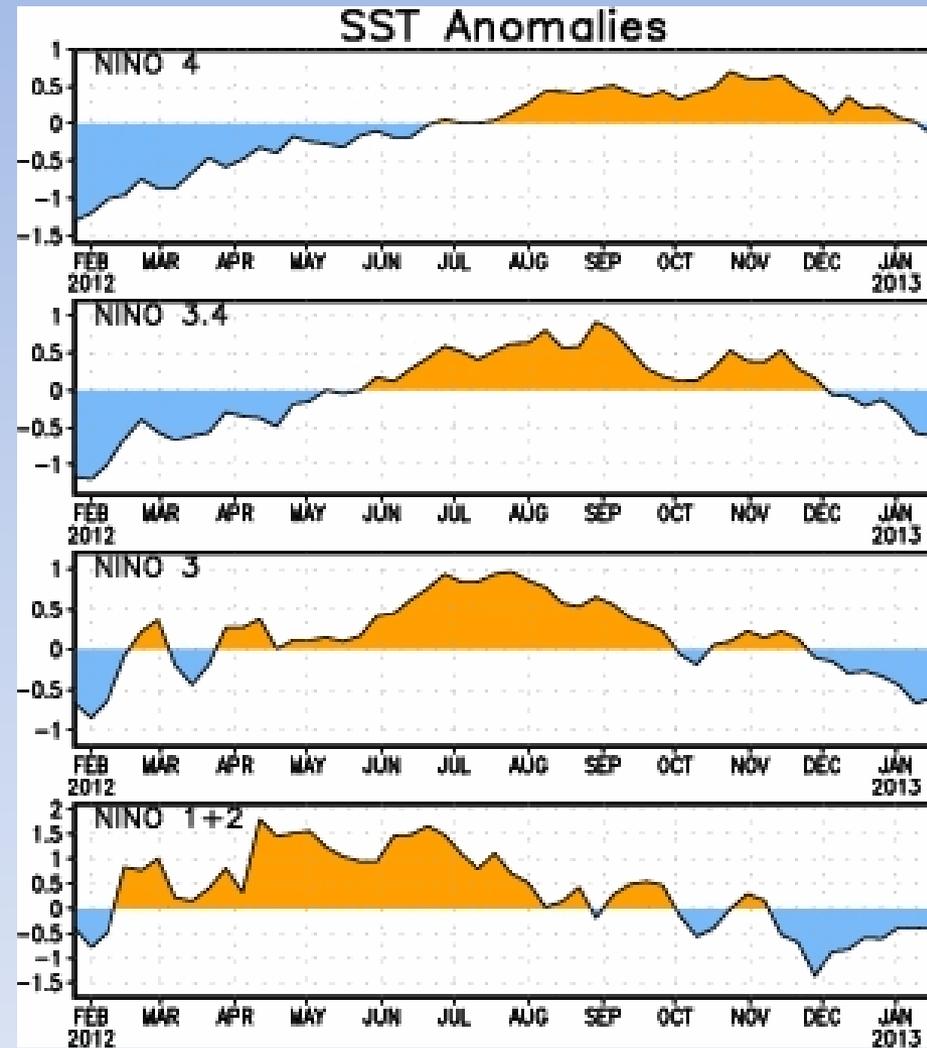
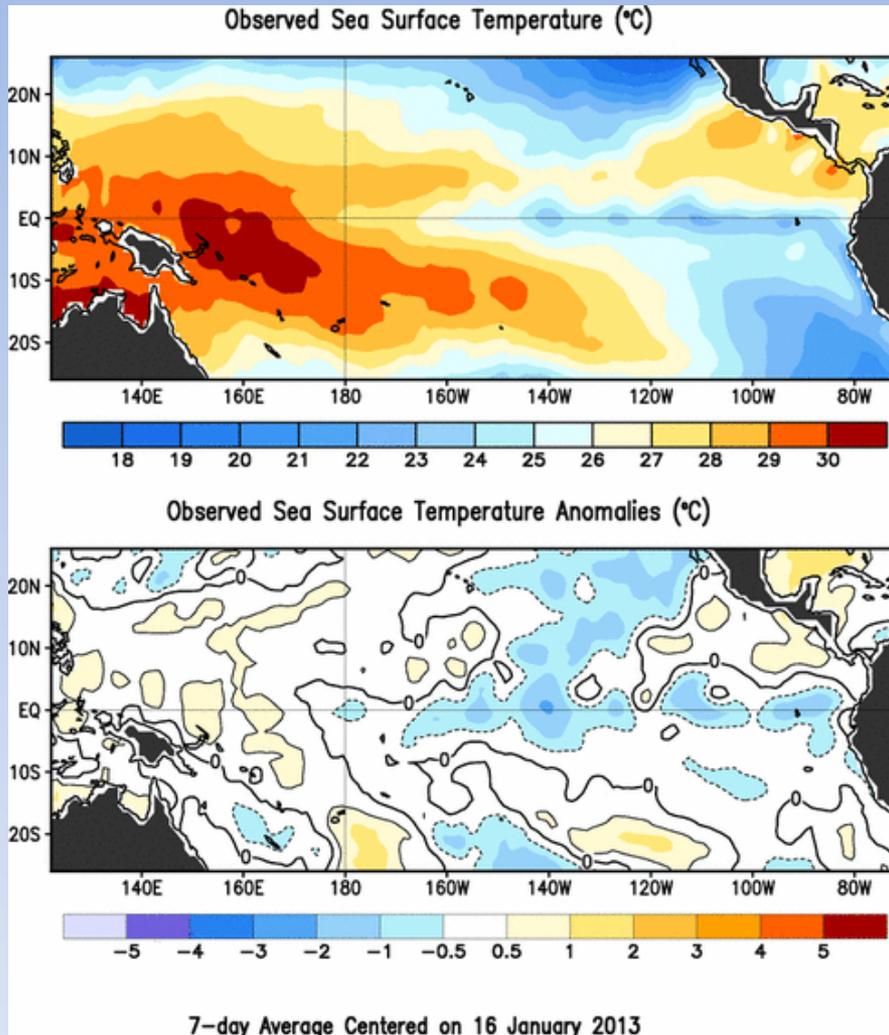


# 5-Day Precipitation Forecast

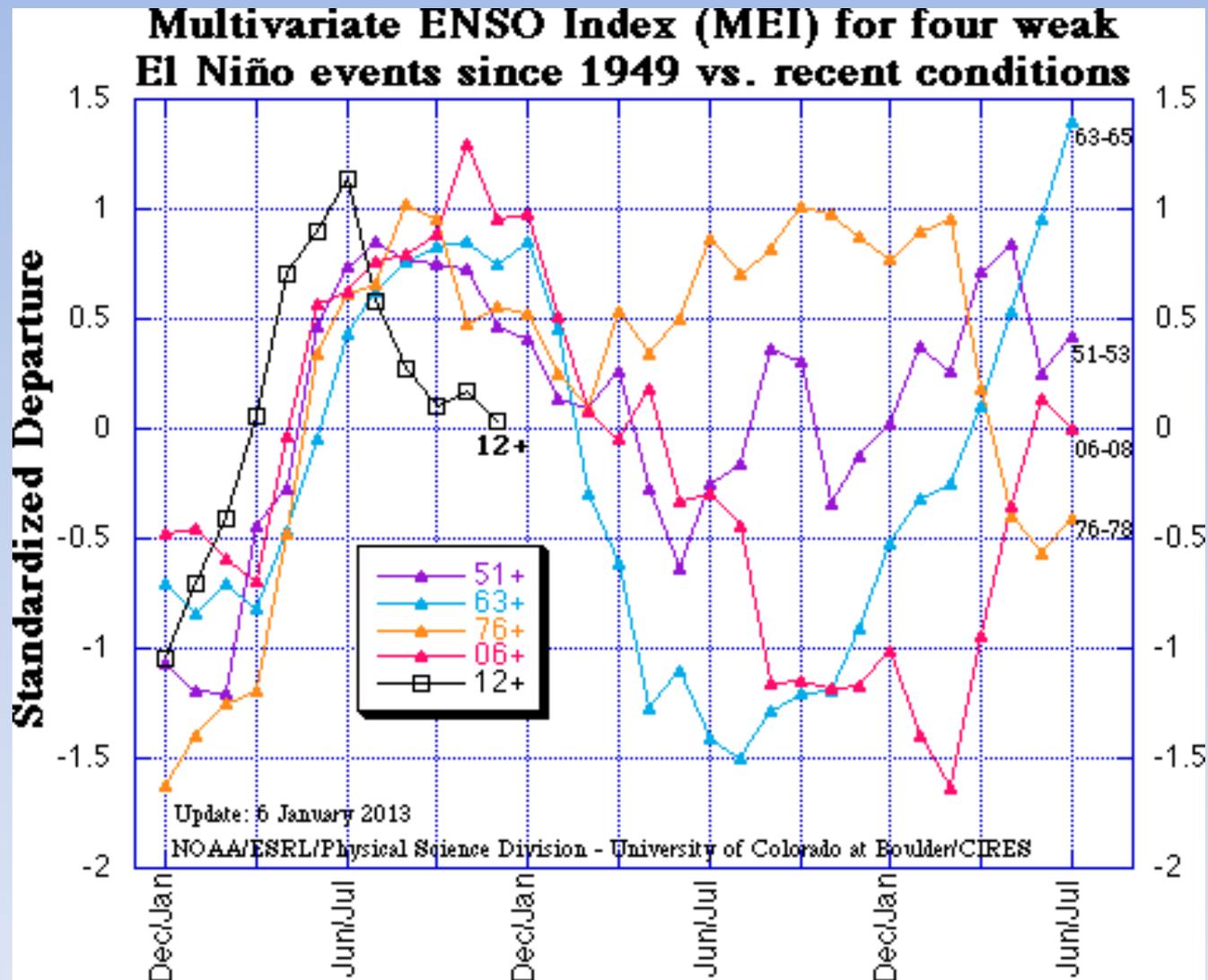


<http://www.hpc.ncep.noaa.gov/qpf/day1-5.shtml>

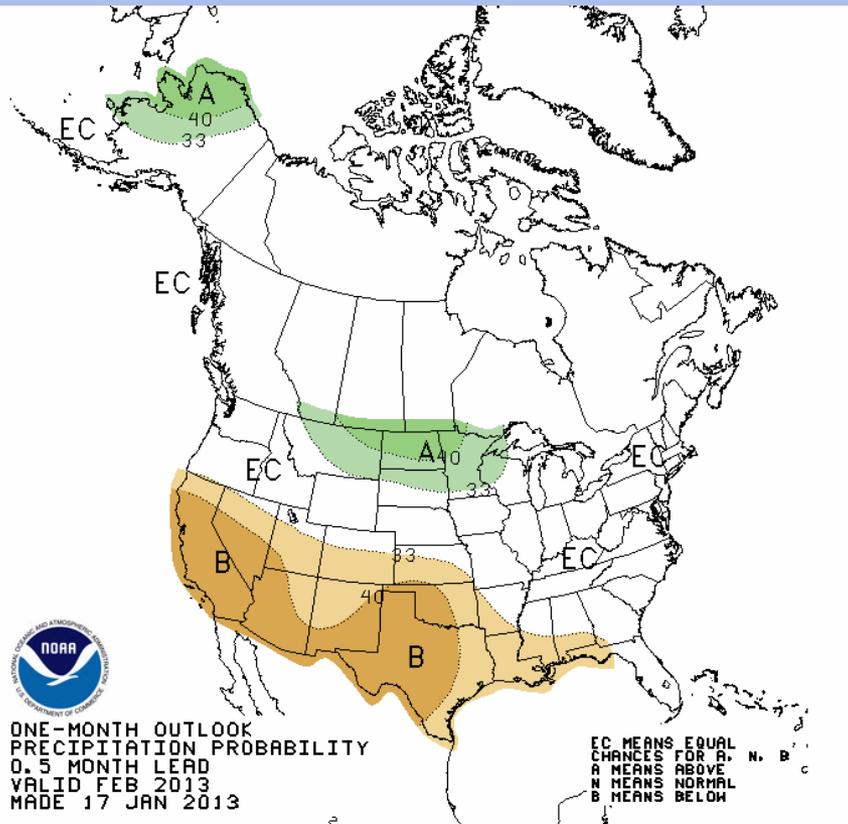
# 7-day average Pacific Ocean SST Anomalies



# Multivariate ENSO Index

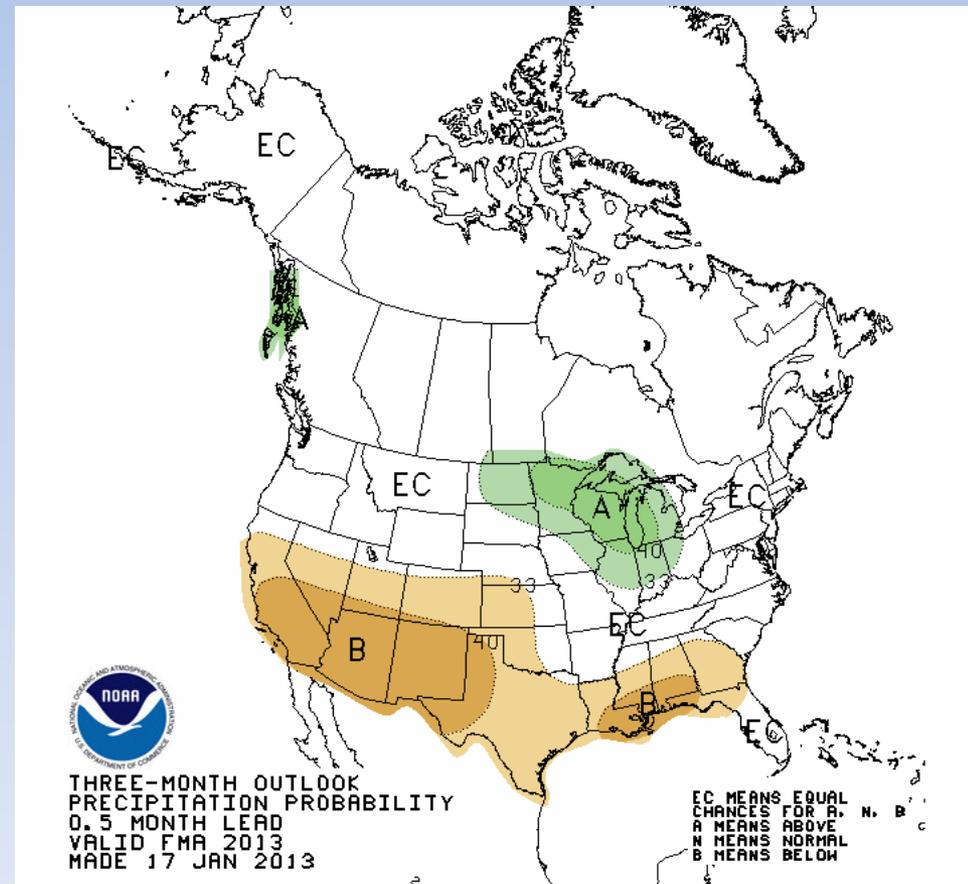


# 1-3 Month Precipitation Outlook



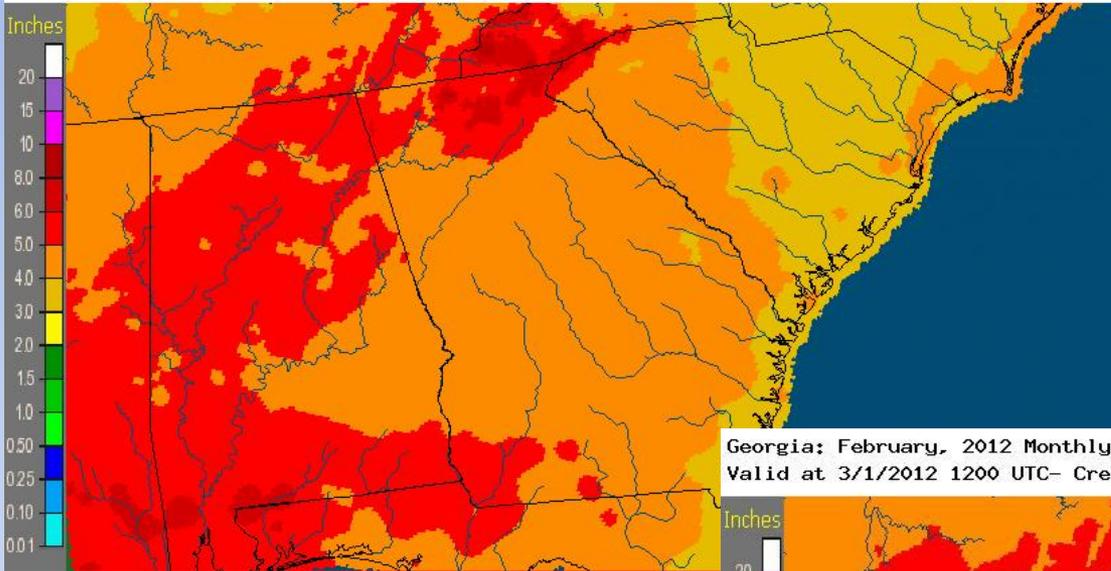
1 Month

3 Month

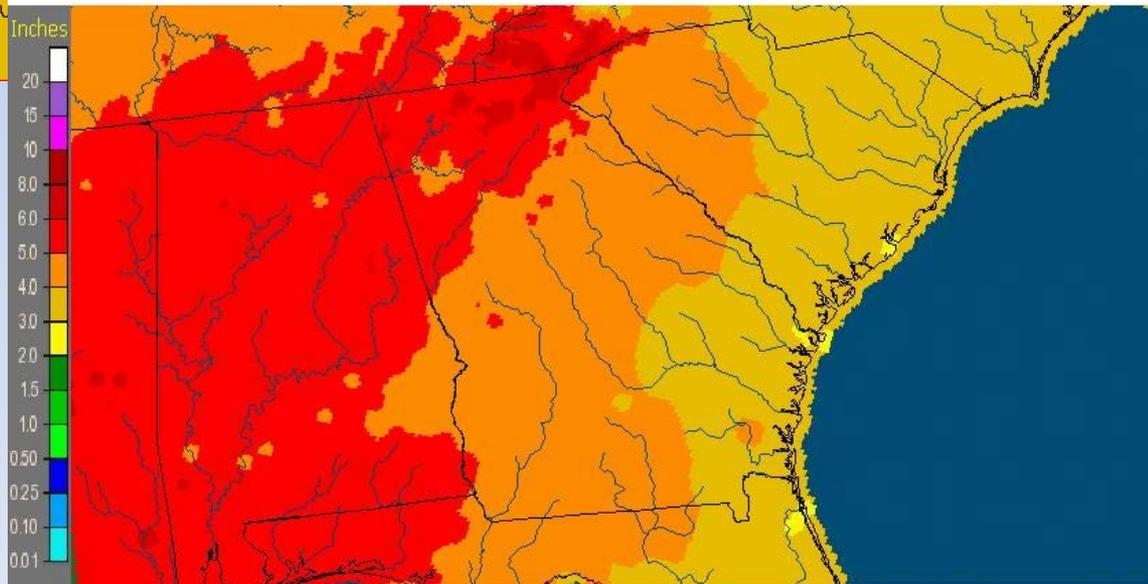


# Fall Rainfall Climatology

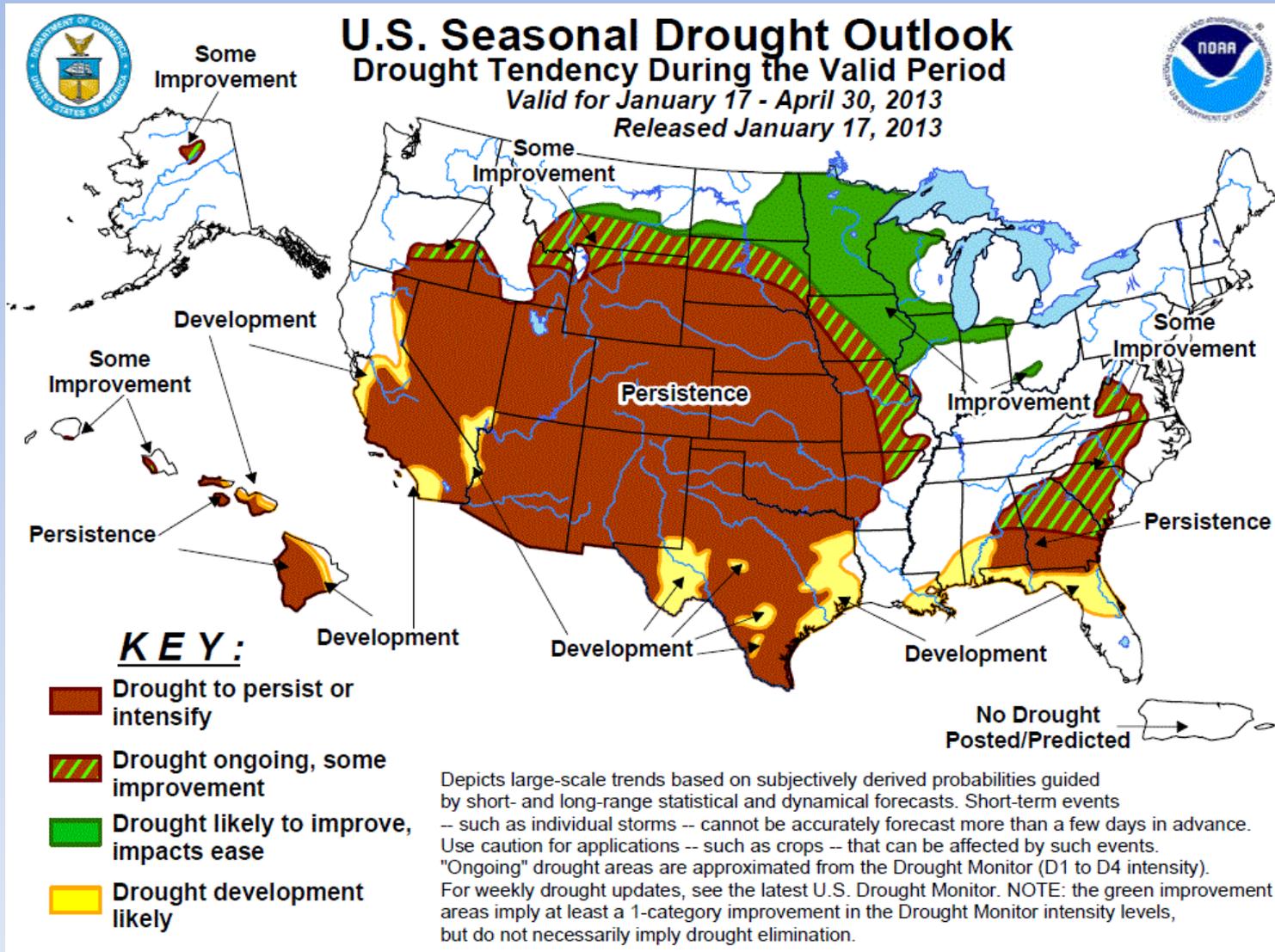
Georgia: January, 2012 Monthly Normal Precipitation  
Valid at 2/1/2012 1200 UTC- Created 10/16/12 2:47 UTC



Georgia: February, 2012 Monthly Normal Precipitation  
Valid at 3/1/2012 1200 UTC- Created 10/16/12 5:08 UTC



# U.S. Drought Outlook

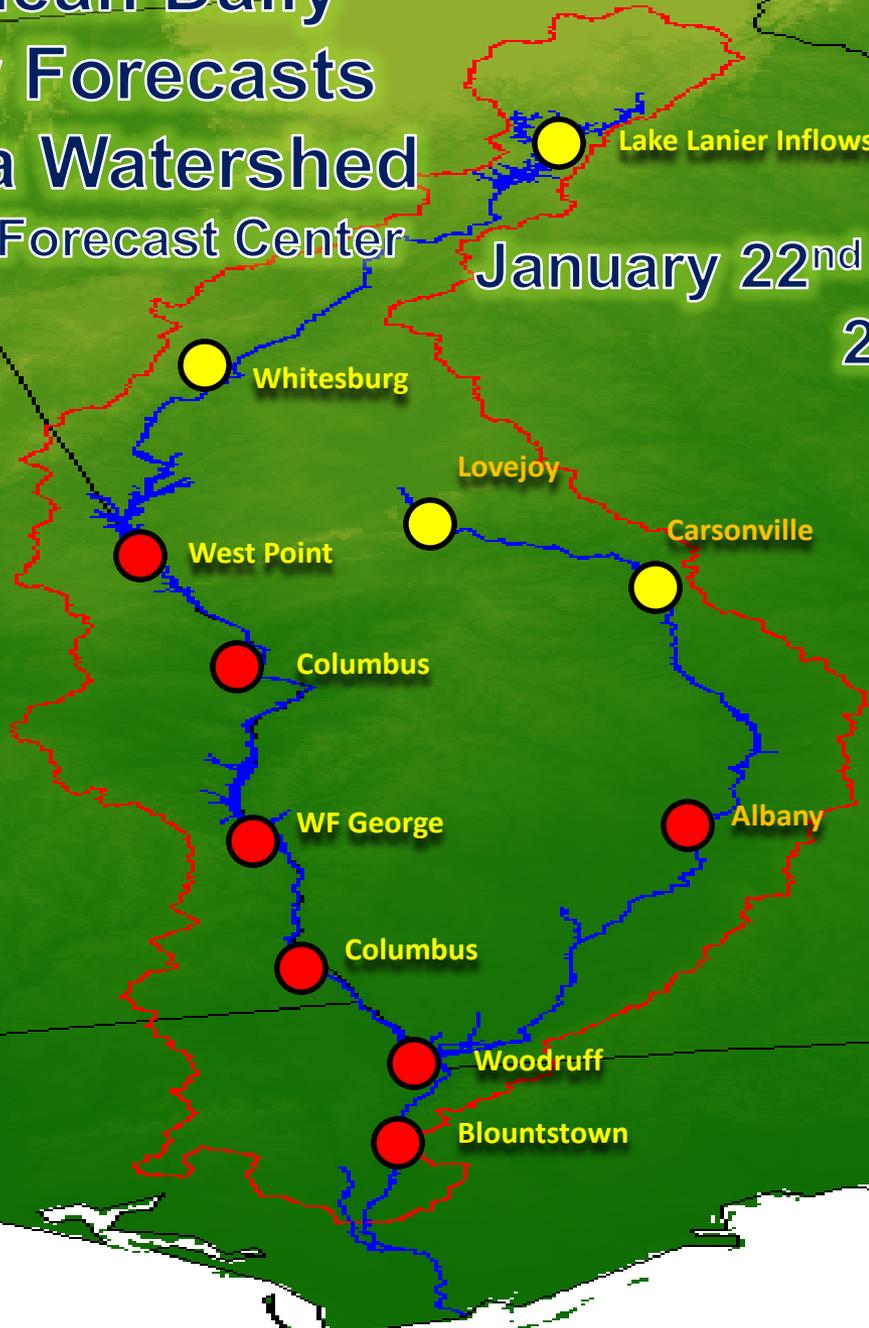


# 1-Month Mean Daily Streamflow Forecasts Apalachicola Watershed

Southeast River Forecast Center

January 22<sup>nd</sup> – February 22<sup>nd</sup>  
2013

-  Above Normal
-  Near Normal
-  Below Normal



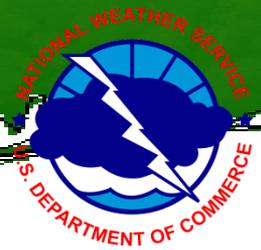
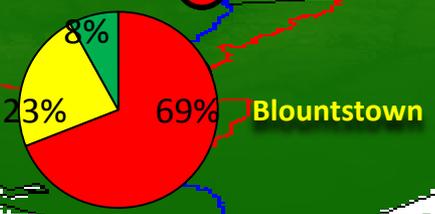
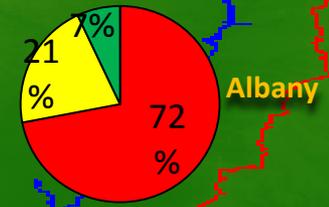
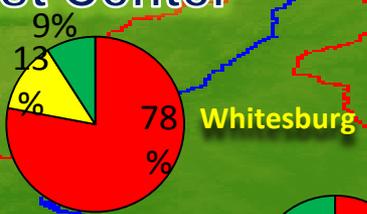
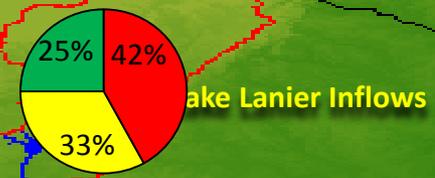
# 3-Month Mean Daily Streamflow Forecasts

## Apalachicola Watershed

Southeast River Forecast Center

January 22<sup>nd</sup> – April 22<sup>nd</sup>  
2013

-  Above Normal
-  Near Normal
-  Below Normal



# Summary

- Drought conditions remain through much of the basin
- From 2 to 5 inches of rain fell in the upper part of the basin past weeks but less than 0.5 inch fell in the lower half of the basin
- 30-day rainfall data show a similar disparity between the upper and lower basin
- There have been no significant tropical events in the basin for the past three years
- Streamflows are near normal or slightly above normal in the upper part of the basin
- Although streamflows have increase in the lower basin, they remain near historic low levels for this time of year as do ground water levels in S Georgia

# Summary

- The level of Lake Lanier remains in conservation zone 3 and is not projected to increase greatly over the next few weeks
- Levels of West Point and WF George are above the top of the conservation so that the composite for the basin has reached conservation zone 1, but is not expected to remain at that level
- The 7-day rainfall forecast calls for 0.75 inches or less, with decreasing amounts of rain forecast from north to south
- ENSO neutral conditions continue, for which we expect 4 to 5 inches of rainfall during each of January and February
- The 1-month precipitation outlook calls for below normal rainfall in the lower basin and the 3-month outlook calls for below normal rainfall throughout

# Summary

- The 1-month streamflow forecasts are for normal flows in the upper Chattahoochee and Flint Rivers, but below normal flows in the South
- For the 3-month streamflow forecast, all locations have the greatest probability for below normal flows

# References

## Speakers

Pam Knox, UGA

Tony Gotvald, USGS

Robert Allen, USACE

Todd Hamill, SERFC

## Moderator

Keith Ingram, SECC

## 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 – 5 February 2013, 1:00 pm EST

Slides from this briefing will be posted at

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

Please send comments and suggestions to:

[ktingram@ufl.edu](mailto:ktingram@ufl.edu)