National Integrated Drought Information System
Drought Early Warning for the Apalachicola-Chattahoochee-Flint River Basin
15 December 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 Ankcorn, USGS

• Streamflow forecasts — Todd Hamill, SERFC

• ACF reservoir conditions — Bailey Crane, United States Army Corps of Engineers

• 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.
Record Florida Heat?

- Warmest spring, 4th warmest summer, and warmest fall on record (1895) in Florida

- Overnight minimum temperatures warmer than afternoon maximum, due to high humidity

- 901 high maximum temperature daily records set in Jan. – Nov., 1,757 high overnight minimums
Year to Date Mean Temperature Rankings
White Christmas?
Rainfall – Last 7 Days
30-Day Rainfall

Totals

Departure from Normal
90-day Rainfall Departures
Probability of 2” Dec. 21-26
Current SST Anomalies
Nino 3.4 Index

- Current weekly value at +2.8 C, down from record value of 3.1 C

- 1997 event peaked similarly, but strong impacts continued through March
Summer Transition to La Nina?

Progression of Five Strongest El Niño Events since 1950

Oceanic Nino Index: 3 month running mean of ERSST.v4 SST anomalies in the Niño 3.4 region (5°N-5°S, 120°W-170°W), based on centered 30-year base periods updated every five years.

- 1965-1966
- 1972-1973
- 1982-1983
- 1987-1988
- 1997-1998
- Avg. 5 Strongest
- 2015-2016
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
Streamflows and Groundwater

Paul Ankcorn
Realtime stream flow compared with historical monthly averages

Previous Brief:  
Monday, November 16, 2015 14:00ET

Current:  
Monday, December 14, 2015 08:30ET

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)

Chattahoochee near Whitesburg (02338000)

http://waterwatch.usgs.gov
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)

Explanations - Percentile classes

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Current Streamflows

Flint River at Albany (02352500)

Flint at Bainbridge (02356000)

http://waterwatch.usgs.gov
Streamflows

Apalachicola at Chattahoochee (02358000)

http://waterwatch.usgs.gov
Streamflows

Apalachicola at Chattahoochee (02358000)

http://waterwatch.usgs.gov
Groundwater Conditions

Previous brief

Current brief

http://groundwaterwatch.usgs.gov
Groundwater Status – Miller County 08G001

(Upper Floridan Aquifer)
Groundwater Status – Dougherty County

11K003

(Upper Floridan Aquifer)
Streamflow Forecasts

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

December 14th 2015 – January 15th 2016

Above Normal
Near Normal
Below Normal
This forecast method does not account for ongoing El Niño.

December 14th 2015 – March 15th 2016

Above Normal
Near Normal
Below Normal
What to expect this Winter and Spring?

El Niño and Southeast Streamflow

Streamflow November - April

- Probability Above
- Probability Normal
- Probability Below

Apalachicola:
- Probability Above: 28%
- Probability Normal: 19%
- Probability Below: 53%

Altamaha:
- Probability Above: 29%
- Probability Normal: 14%
- Probability Below: 57%

Satilla:
- Probability Above: 53%
- Probability Normal: 29%
- Probability Below: 14%
El Niño 2015
Southeast River Flood Threat
December 2015 – April 2016

Above Average River Flooding Possible

Above Average River Flooding Probable

Above Average River Flooding Likely
ACF Reservoir Conditions
W.F. George Action Zones and Actual 2015 Elevations

Actual data thru December

- 2015 Actual Elevation
- Forecast Elevation
- Historical Median Elevation Record
- Elevation Range 1964 - 2014

Top of Conservation

Zone 1
Zone 2
Zone 3
Zone 4
Jim Woodruff Actual & Projected 2015 Elevations

Elevation in FT

Maximum Operating Level

Actual data thru December 15,

- 2015 Actual Elevation
- Forecast Elevation
- Maximum Operating Level
### Average Daily Project Inflows by Month

#### 2015

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<th>BUFORD LOCALS</th>
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#### 2015

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2015 ACF Basin Composite Conservation and Flood Storage, (ac-ft)

Top of Conservation
Composite Zone 1
Composite Zone 2
Composite Zone 3
Composite Zone 4
Drought Zone

George Conservation
West Point Conservation
Lake Lanier Conservation
George Flood Storage
West Point Flood Storage
Lake Lanier Flood Storage

Actual data thru 12-14-2015

Add value of 1,856,000 acre-ft to include inactive storage.
Summary – Bailey Crane

- We are well above the typical amount of storage in the system for this time of year
- All reservoirs are expected to remain near their top of conservation through the winter
- Expect higher than normal releases from all the ACF projects throughout the winter.
Summary - David Zierden

- All portions of ACF basin completely drought-free according to US Drought Monitor.
- Last 2-3 weeks brought a reprieve in the frequent and heavy rainfall.
- Florida is on pace for record warm 2015, Spring and Fall already records.
- El Nino appears to have peaked, following similar cycle with 1997/1998.
- Four out of five strongest El Nino’s have been followed by La Nina development the next summer.
- El Nino composites show much above normal winter rainfall across most of the ACF.
- CPC one-month and winter outlooks favor pattern of above normal rainfall for all the Southern U.S., strongest forecast possible for Florida.
- Drought very unlikely to develop over the next several 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 to above normal range for most of the Flint River basin.
• Groundwater levels are in the above normal range in Southwest Georgia.
Summary – Tod Hamill

• 1 Month Streamflow forecast - Near Normal moving toward above normal in January
• 3 Month Streamflow forecast – ESP method favoring equal chances. 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 Ankcorn, USGS
Todd Hamill, SERFC
Bailey Crane, USACE

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

**January 19, 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

HAPPY HOLIDAYS