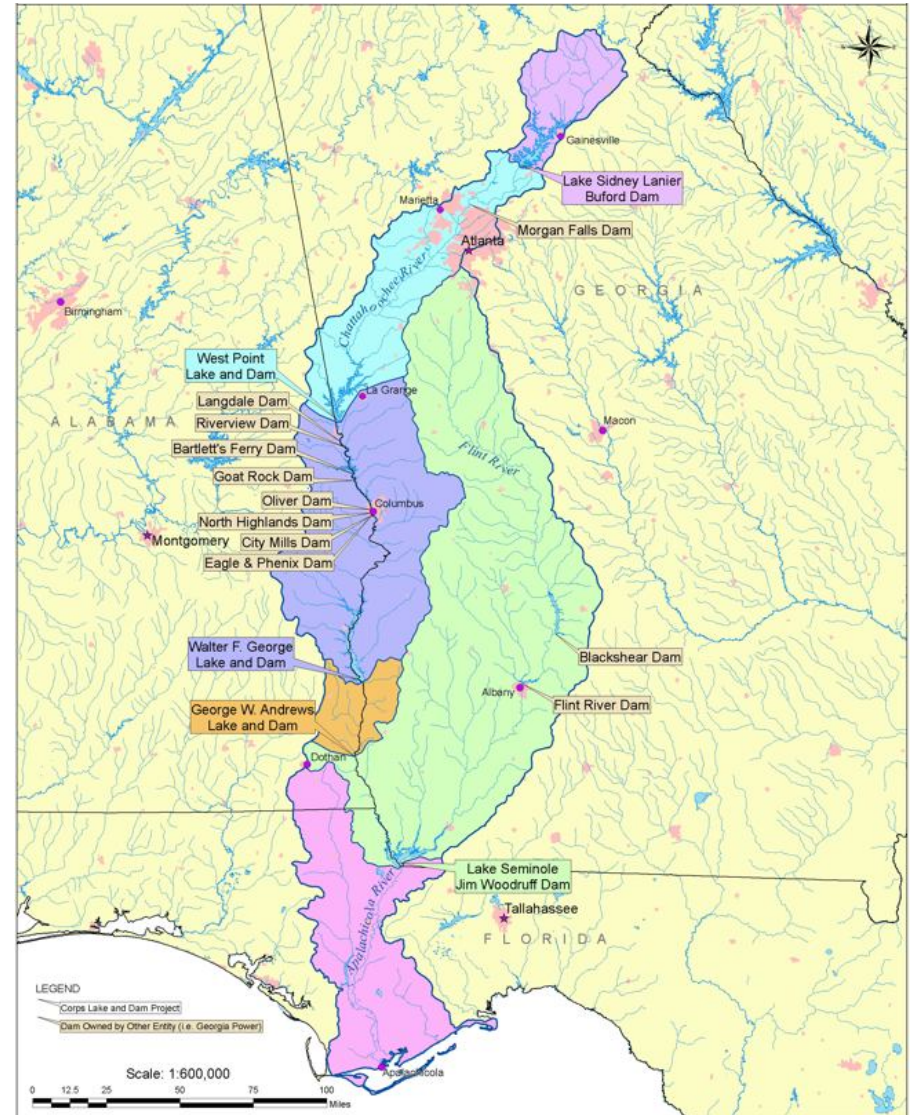


Apalachicola-Chattahoochee-Flint (ACF) River Basin DEWS

Puneet Srivastava

Director, Water Resources Center

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AUBURN UNIVERSITY

ALABAMA AGRICULTURAL
EXPERIMENT STATION

WATER RESOURCES CENTER



Apalachicola-Chattahoochee-Flint (ACF) River Basin DEWS

- Engaging Preparedness Community
 - ACF Stakeholders
 - Tri-State Row Crop Group
 - Florida Water Climate Alliance
- ACF River Basin Drought Assessment Webinars
- Social science research to assess awareness, perception, use, and barriers and opportunities for using climate information by water managers
- DEWS related research

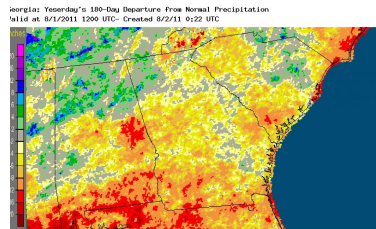


Apalachicola-Chattahoochee-Flint (ACF) River Basin DEWS

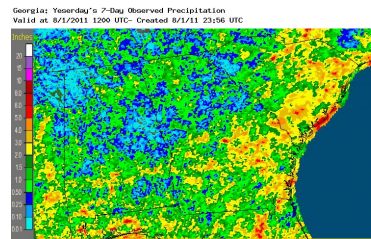
ACF River Basin Drought Assessment Webinars

- Monthly webinars (weekly to bi-weekly during drought) conducted by SECC (now by Auburn) continuously since 2011
- Presenters
 - State climatologists from all three states
 - USGS South Atlantic Climate Science Center
 - Southeast River Forecast Center
 - Army Corps of Engineers
 - Apalachicola National Estuarine Research Reserve

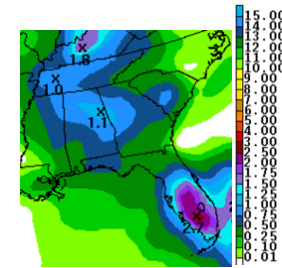
Apalachicola-Chattahoochee-Flint (ACF) River Basin DEWS



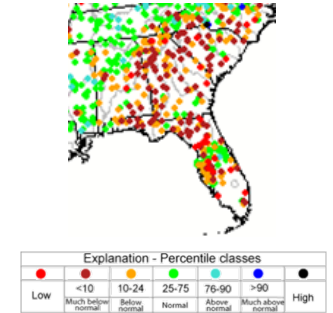
(a) 180-day cumulative rainfall deficit (yellow and red colors show deficit)



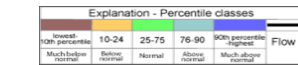
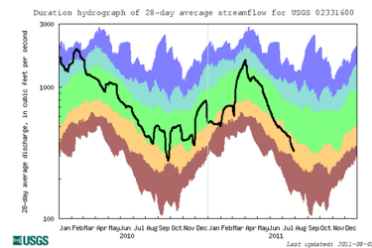
(b) 7-day cumulative rainfall totals



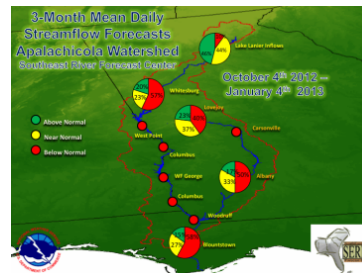
(c) 5-day precipitation forecast



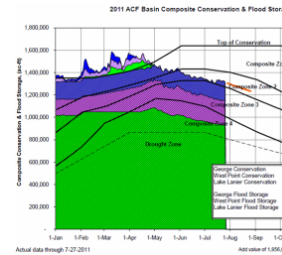
(d) Real-time streamflows compared to historical average



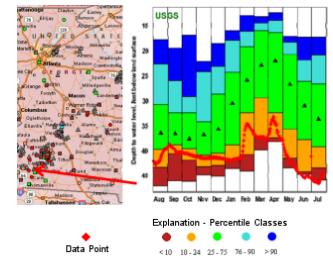
(e) Lake inflows (black line) with percentile classes (colored areas)



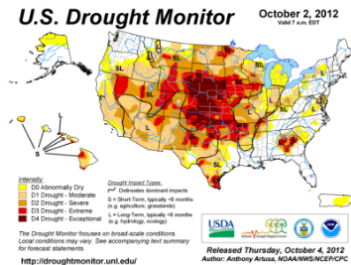
(f) 3-month streamflow forecast (red dots represent below normal streamflows)



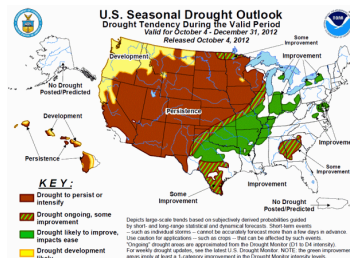
(g) ACF River Basin composite conservation and flood storage (of all major reservoirs)



(h) ACF River Basin groundwater status depicted by one representative groundwater well in southwest Georgia



(i) U.S. drought monitor



(j) U.S. seasonal drought outlook



Apalachicola-Chattahoochee-Flint (ACF) River Basin DEWS

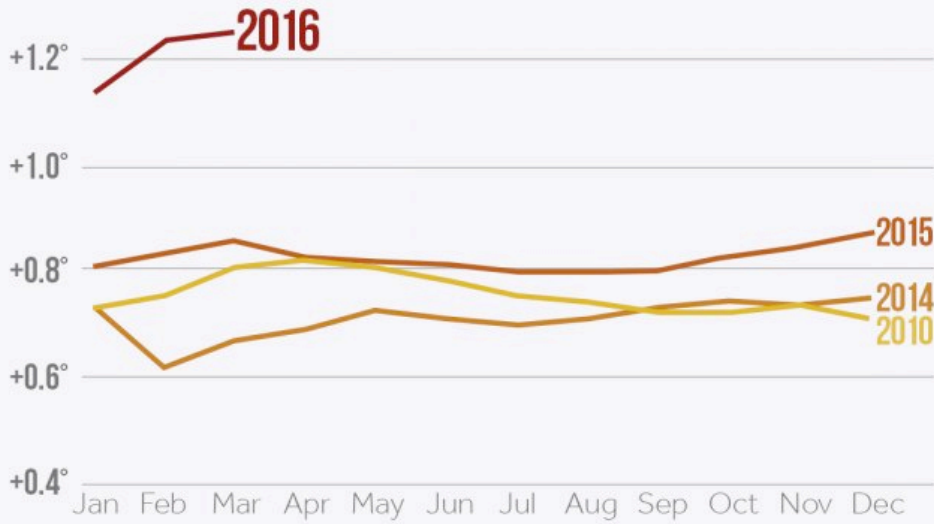
Unique features

- State climatologists from all three states engaged
- More than just drought assessment webinars
- Driver for the State of Alabama to develop its state drought plan
- Covers a larger area
- Educates participants on a variety of climate concepts
- Conduct research to improve the drought indicators used for the webinars

Apalachicola-Chattahoochee-Flint (ACF) River Basin DEWS

2016 Blowing Records Away

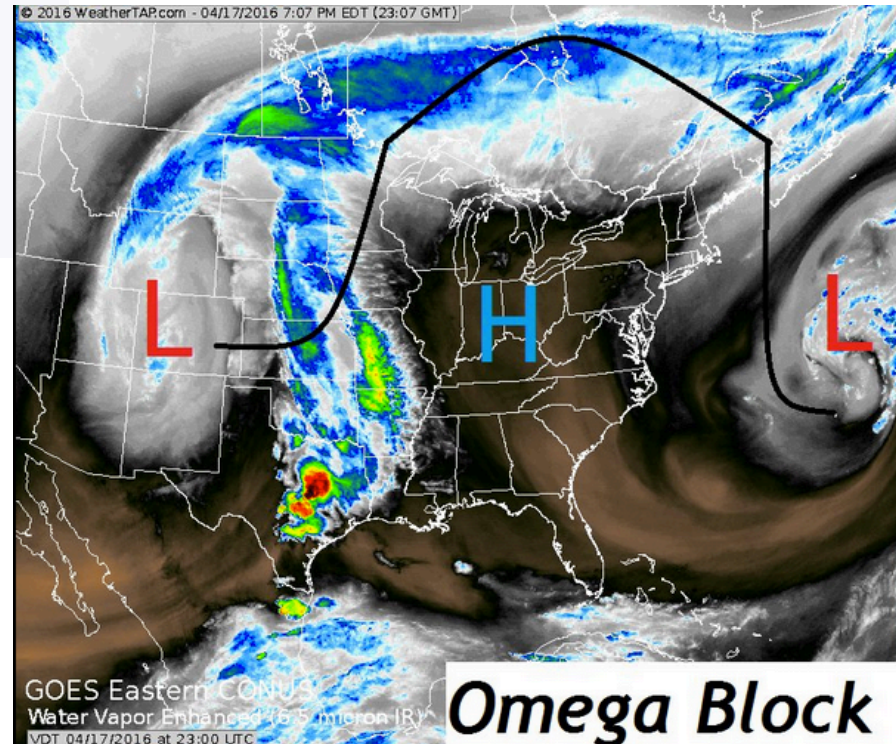
Year-to-date average global temperature anomalies (°C)



Source: NASA GISS

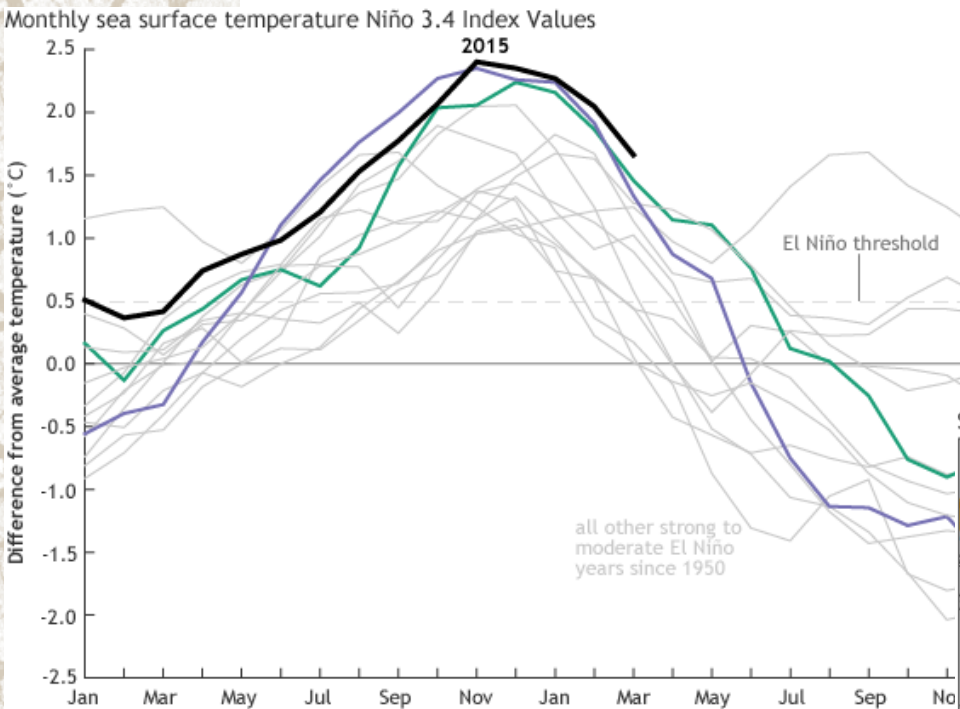
CLIMATE CENTRAL

Houston Flooding



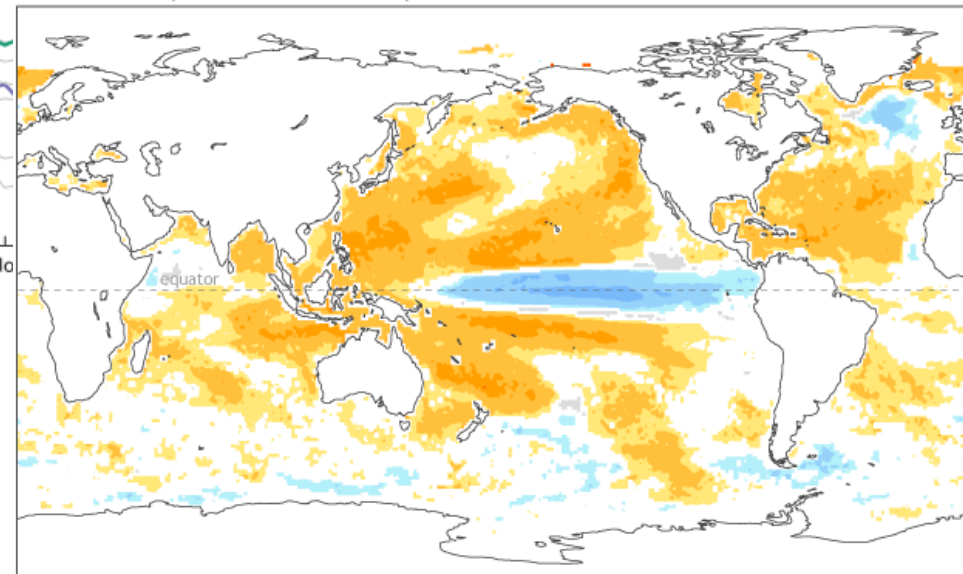
Apalachicola-Chattahoochee-Flint (ACF) River Basin DEWS

El Nino on the decline

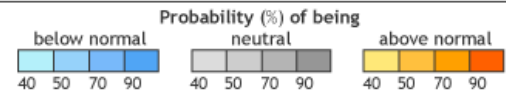


La Nina on the Way?

Sea surface temperature forecast for Sep–Nov 2016



Issued April 2016

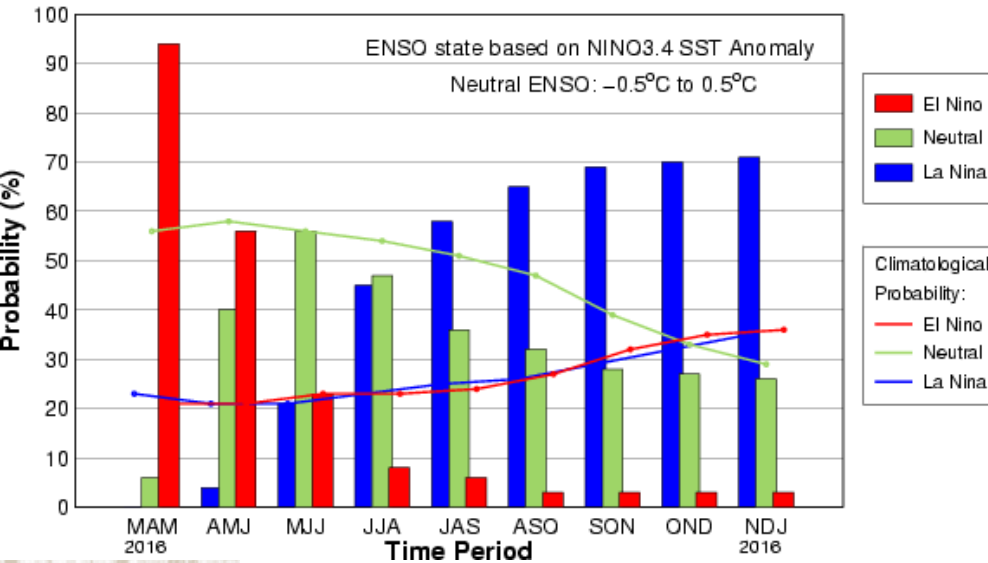


NOAA Climate.gov
Data: CPC

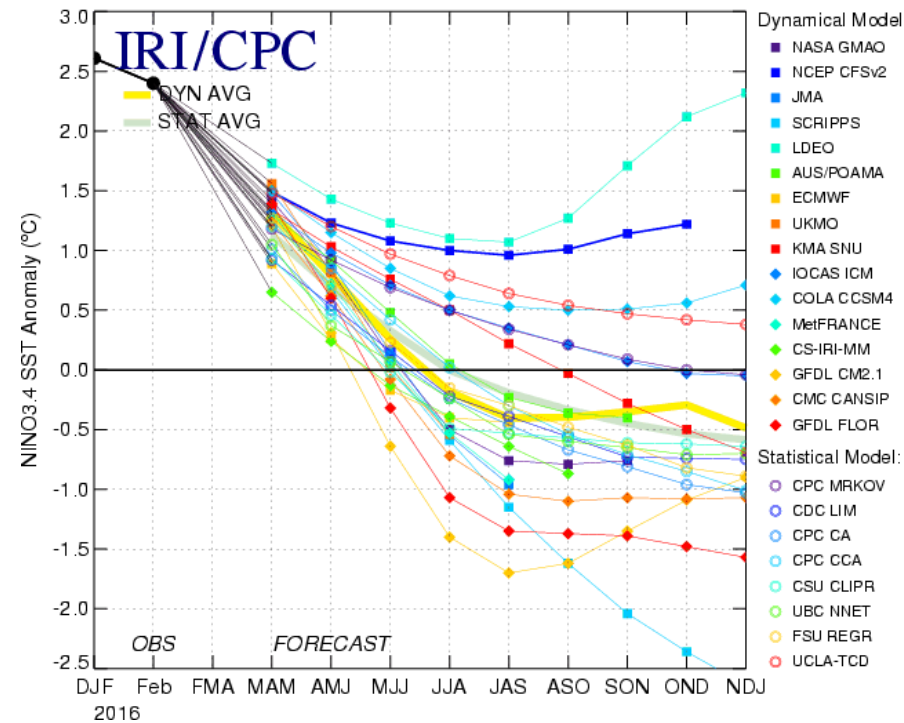
Apalachicola-Chattahoochee-Flint (ACF) River Basin DEWS

ENSO Forecast

Early-Apr CPC/IRI Official Probabilistic ENSO Forecast



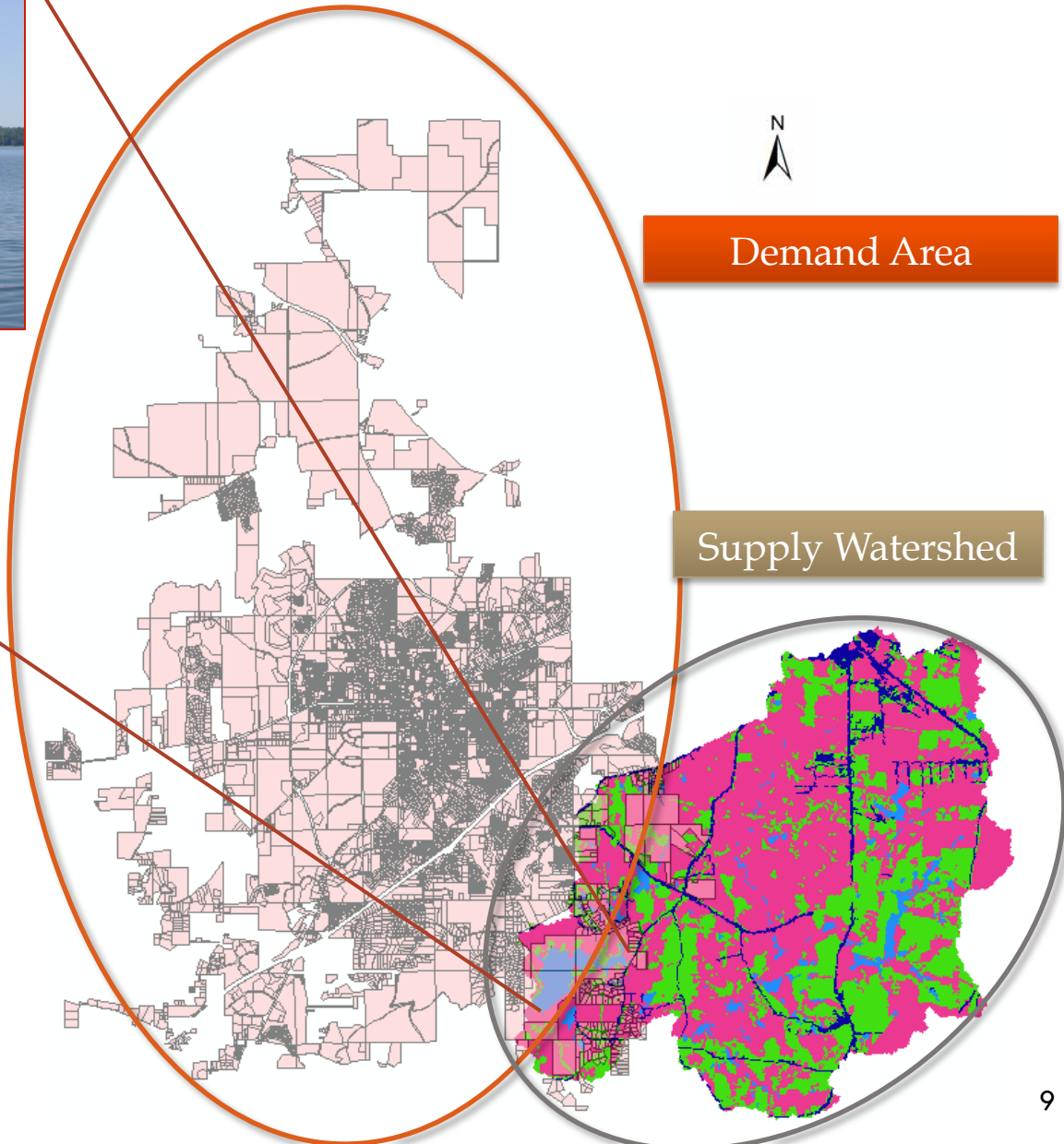
Mid-Mar 2016 Plume of Model ENSO Predictions



Reducing drought risks for small- to mid-size communities



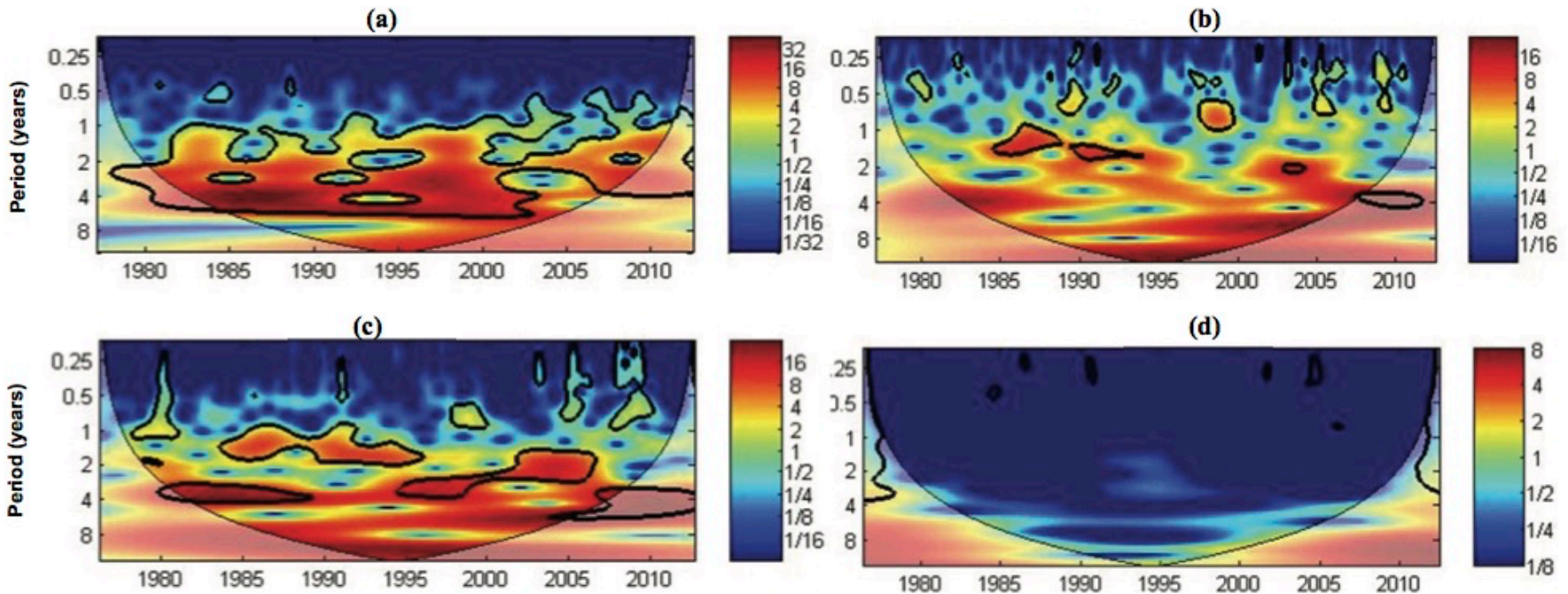
Lake Ogletree



Demand Area

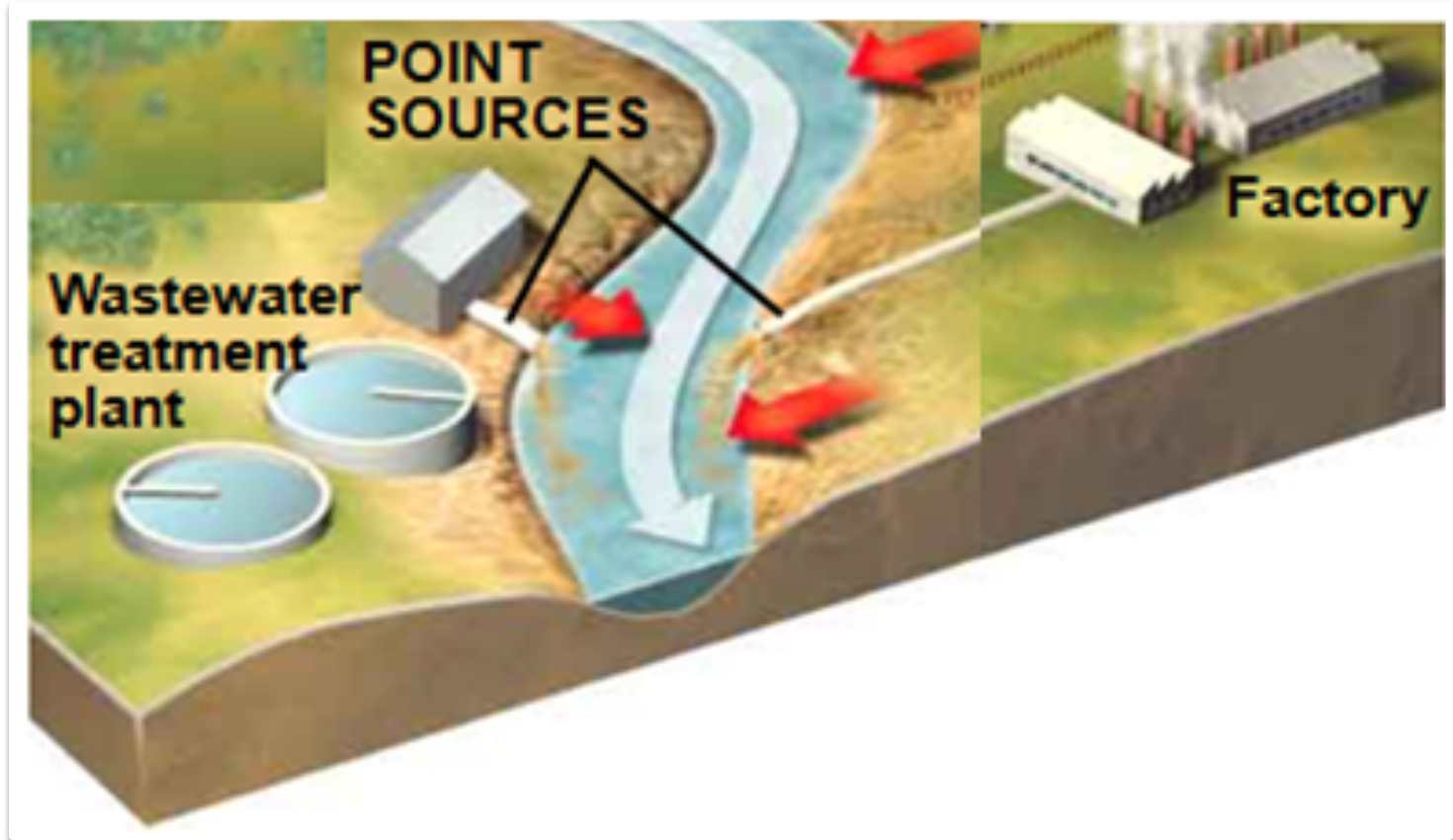
Supply Watershed

Can groundwater levels be used as a drought indicator in the Apalachicola-Chattahoochee-Flint (ACF) River Basin?

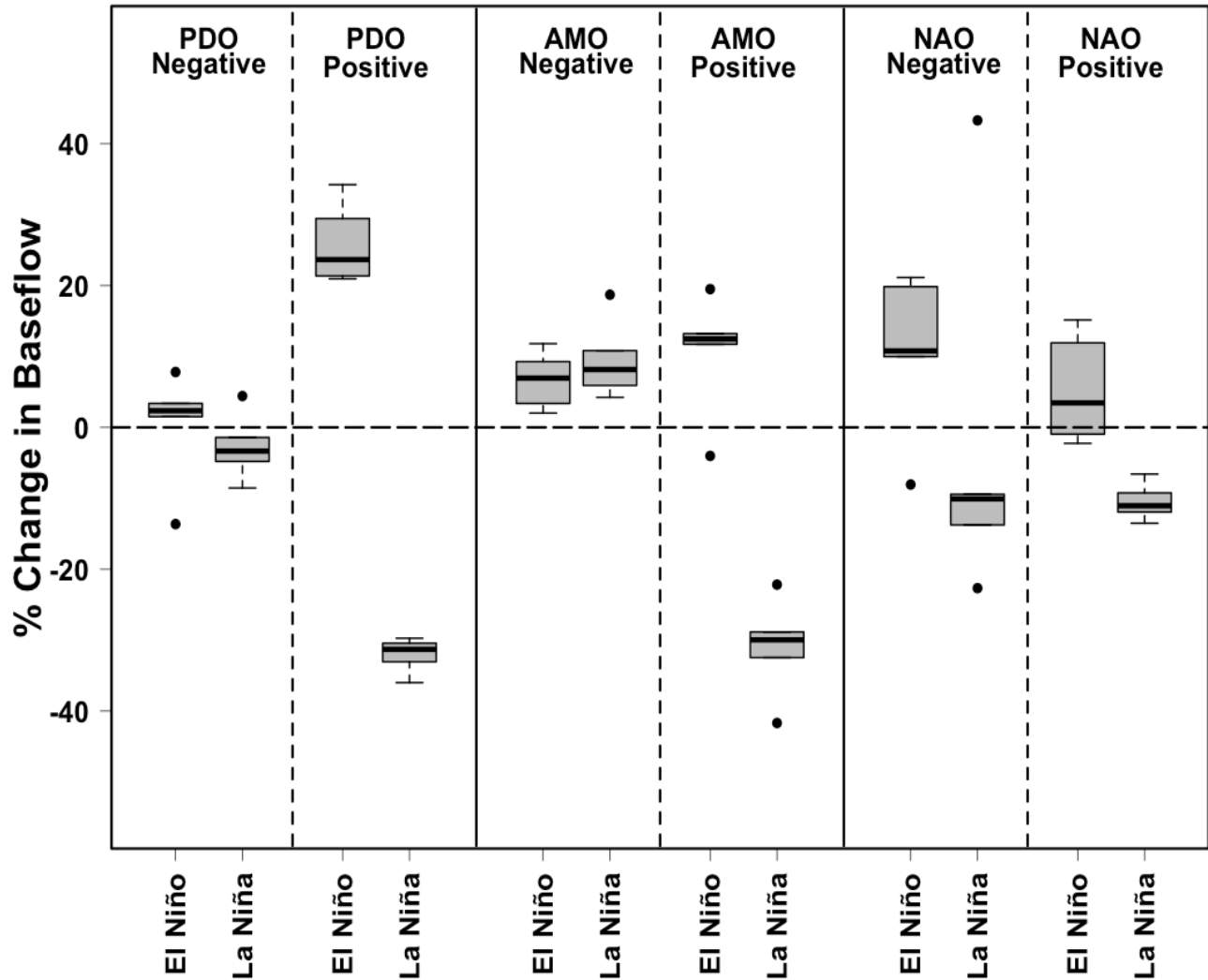


- Shallow and moderately deep well respond to climate variability – can be used as drought indicators
- Recovery times (from droughts) can be more than two years

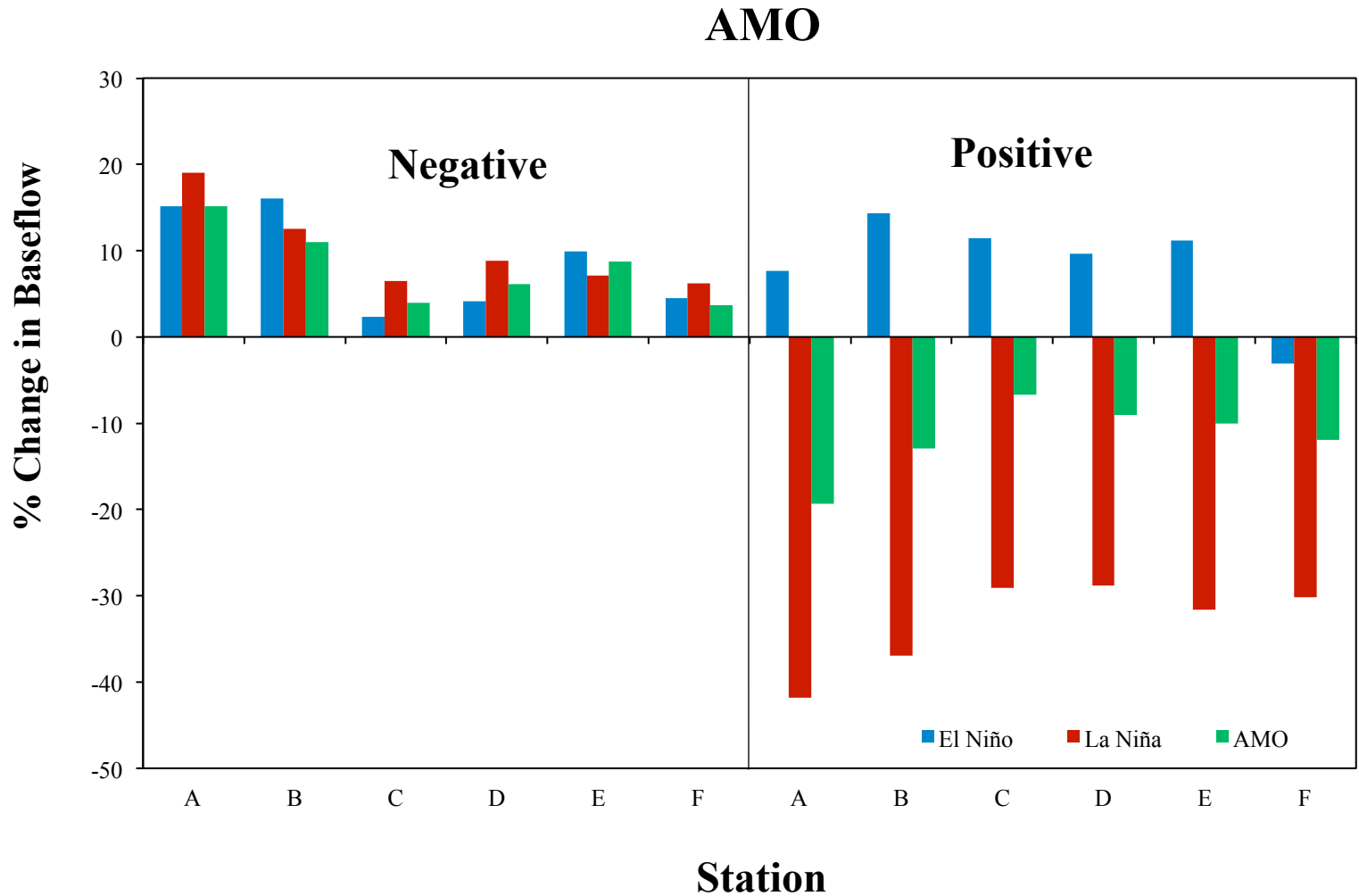
Point Source Discharge Permitting to Manage Water Quality



How other climate variability Phenomena Modulate the Effect of ENSO?



How other climate variability Phenomena Modulate the Effect of ENSO?





Apalachicola-Chattahoochee-Flint (ACF) River Basin DEWS

Planned Activities

- Add more indicators (e.g. soil moisture and coastal) to the suite of indicators
- Engage wider community - state and local governments, regional commissions of counties, state agencies, fisheries management councils, water management districts, extension, master gardeners, NRCS, utilities, and agricultural producers
- Develop educational products for stakeholders
- Continue to refine the content of the webinars for the stakeholders