Synthesizing Diverse Stakeholder Needs for a Drought Early Warning Information System in the Apalachicola-Chattahoochee-Flint River Basin

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We’ve got the tools to assess current conditions and to provide short-term and seasonal forecasts…but how do we communicate potential problems associated with drought? How do agencies and citizens work together to mitigate the negative impacts of drought?
NIDIS Drought Early Warning – First Step: Understand the River Basin Basics

• **Understand the physical system**
  - What goes in (inflows from smaller tributaries, precipitation, snow melt, groundwater)
  - Regulation (dam and reservoir systems)
  - What comes out (water rights and permits)
  - Surface water and ground water interactions

• **Understand the vulnerabilities**
  - Municipal water supplies
  - Industry
  - Hydropower
  - Agriculture
  - Ecosystem

• **Identify stakeholders**
  - Decision Makers
  - Leaders in vulnerable sectors
NIDIS Drought Early Warning – Second Step: Assess Basin DEWS Needs - Stakeholder Meetings

• **What are the strengths and weaknesses in current drought monitoring and communications?**
  - Gaps in hydrometeorological measurements
  - Communication across political boundaries
  - Competing needs among sectors
  - Information dissemination
    - Timeliness
    - Accuracy
  - Access to hydrometeorological data
  - Assessment of drought indices
  - Conduct Knowledge Assessments

• **Relationship building**
  - Understanding other sectors’ drought issues
  - Building trust among stakeholders
  - Understanding other sectors’ constraints in actions they can take
NIDIS Drought Early Warning – Third Step: Establish the Blueprint for a DEWS – Stakeholder Meetings

• What do the stakeholders want?
• What can we do that will benefit most, if not all, stakeholders?
• What can we do that builds upon current resources and activities?
• What additional resources are needed for a successful DEWS?
NIDIS Drought Early Warning – Fourth Step: Start the DEWS Activities

• Form committees or identify individuals to carry out the work
• Refine activities as lessons are learned
• Evaluation

NIDIS Drought Early Warning – Final Step: Continuation of the DEWS Beyond the Pilot

• Continued evaluation: What worked, what didn’t work, and why?
• Determine a “home” for each successful activity and the necessary long-term funding needed
• Continue to refine activities as lessons are learned
• Transferability to nearby basins or regions?
ACF River Basin Basics

- 5 Corps-operated dams
- 11 Dams owned and operated by power companies
- Buford Dam constructed for
  - Flood control, hydropower, navigation
- At least 20 years of litigation regarding allocation of water in the basin
  - Multi-District Litigation
  - July 2009 Magnuson Ruling
    - The Corps of Engineers should have obtained congressional approval before allowing Atlanta to withdraw water from Lake Lanier for the Metro Atlanta water supply
    - The parties have 3 years from this ruling to obtain Congressional approval to reallocate the water or agree to some other resolution
    - In the absence of a resolution, Buford Dam operations will revert to the baseline operations of the mid-70s
  - July 2010 Magnuson dismissed Florida’s argument to use the Endangered Species Act to dictate water flow into the Apalachicola
ACF Basin Stakeholders

ACF Stakeholders, Inc.
Alabama Department of Environmental Management
Alabama Office of Water Resources
Apalachicola National Estuarine Research Reserve
Apalachicola Riverkeeper
Auburn University
Centers for Disease Control and Prevention/National Center for Environmental Health
City of Apalachicola, FL
City of Clarkesville, GA
Environmental Protection Agency
Flint River Water Policy Center
Florida Department of Agriculture and Consumer Services
Florida Department of Environmental Protection
Florida Fish and Wildlife Conservation Commission
Florida Sea Grant Extension/Franklin County
Florida State University
Georgia Environmental Protection Division
Georgia Tribe of Eastern Cherokee
Golder Associates
Gwinnett County, GA
Habersham County (GA) Water Authority
Joseph W. Jones Ecological Research Center
LaGrange, GA
MeadWestvaco Corporation
Middle Chattahoochee Water Coalition
Muscogee Nation of Florida
National Drought Mitigation Center, University of Nebraska
NOAA/Climate Prediction Center
NOAA/Climate Program Office
NOAA/Coastal Service Center
NOAA/Earth System Research Lab
NOAA/National Climatic Data Center
NOAA/NIDIS Program Office
NOAA/NWS Southern Region Climate Services
NOAA/NWS/Birmingham WFO
NOAA/NWS/Service Hydrologist
NOAA/NWS/Southeast River Forecast Center

NOAA/NWS/Southern Region Climate Services
NOAA/NWS/WFO Peachtree City, GA
NOAA/NWS/WFO Tallahassee
NOAA/Restoration Center
Northwest Florida Water Management District
Southeast Indigenous Peoples’ Center
Southern Nuclear
University of Florida
University of Georgia, Athens, GA
University of North Carolina
Upper Chattahoochee Riverkeeper
US Army Corps of Engineers - Mobile District
US Fish and Wildlife Service
USGS/Georgia Water Science Center
USGS/Florida Water Science Center
West Point Lake Coalition

Photo courtesy of Joel Lanier (NWS)
Full-basin Scoping Workshop: Lake Blackshear (Dec. 2009)

KEY ISSUES:

- Gaps in understanding
- Gaps in measurements
- Presentation of information
- Education
- Drought Indicators
- Forecasting
GOOD NEWS: There were common concerns among the stakeholders in all parts of the basin that could be addressed by a regional drought early warning information system.
Commonalities among the three sub-basins

1) Education and Communication
2) Forecasting improvements
3) Improved interactions with the Corps
4) Data
5) Consistency in drought planning among the three states
6) ACF Basin webinars and Climate Outlooks
7) Drought Index
8) Resolve discrepancies in our understanding of groundwater
9) Presentation of Information
Establish committees to carry out the DEWS priorities
Climate Outlook Forum – Albany, GA (Nov 2010): Local and national experts presented current conditions, outlooks and anticipated impacts due to La Niña.
DEWS Priorities and Committees
Top Priorities/Committee Leaders

- **Education and Communication**
  - Led by Christopher Martinez, Univ. of Florida

- **ACF Basin webinars and Climate Outlooks**
  - Led by Keith Ingram, Univ. of Florida

- **Data & Presentation of Information**
  - Led by Pam Knox, Univ. of Georgia

ACF Basin web page on [www.drought.gov](http://www.drought.gov)
Education and Communication

• Production of our first fact sheet - “What does the 2010-2011 La Niña mean for the Southeastern US?”
  ▪ Disseminated to stakeholders on 2/4/11

• Coming Soon...
  • ACF Water News
  • Media Training for local reporters
ACF Basin Drought Assessment Webinars

- SECC RISA
- 3 State Climatologists
- USGS
- GA Environmental Protection Division
- NW FL Water Management District
- AL Department of Water Resources
- NWS S. Region
- SERFC
- S. RCSD
- SERCC
- ACF-S
- Habersham County Water Authority
Data

- **Data Committee**
  - Continue building an ACF data inventory
  - Integrate new data inventory into the Drought Portal

- **Presentation of Information**
  - GIS person to be hired through SECC to customize webinar products for the drought assessment webinars
ACF Page on the Drought Portal

- ACF Page
  - In its infancy
  - Open to any suggestions on content or layout
  - Data and forecast sources
  - News stories
  - Meeting information
Lessons Learned and Challenges

- There are numerous successful activities already taking place in the ACF basin: How do we avoid duplication and maximize efforts?
- Things may move slower than anticipated due to time and money constraints…
- …and the group can’t move faster than they are comfortable moving (e.g., joint press release after the SECOF)
- Exchange of information in a setting focused on a shared resource (e.g., water), *can* lead to enhanced understanding among stakeholders with competing needs
- Once a pilot activity is started it may become apparent that a different course of action will lead to better results
- Early adopters really are important
NIDIS-Supported Efforts in the ACF River Basin: Southeast Climate Consortium
Regional Integrated Sciences & Assessments (RISA)

Reducing Drought Risks in the Southeast USA: Quantification of Drought Information Value, Development of Drought Indices, and Communication of Drought Information
Puneet Srivastava (PI), Latif Kalin, Keith Ingram, David Stooksbury, Pam Knox, Jessica Bolson, Muthuvel Chelliah, Richard Marcus, and Matt Dunn

Needs, Uses, Perceptions, and Attitudes towards Weather and Climate Forecast Information by Water Resource Managers in the Southeastern United States
Chris Martinez (PI), Norman Breuer, Jessica Bolson, Jim Jones, David Stooksbury, and Tatiana Borisova