

ALABAMA OFFICE OF WATER RESOURCES (OWR)

ARE WE THERE YET? A STATE PERSPECTIVE ON DROUGHT PLANNING AND RESPONSE

U.S. DROUGHT MONITOR FORUM
APRIL 16, 2013

Tom Littlepage

tom.littlepage@adeca.alabama.gov

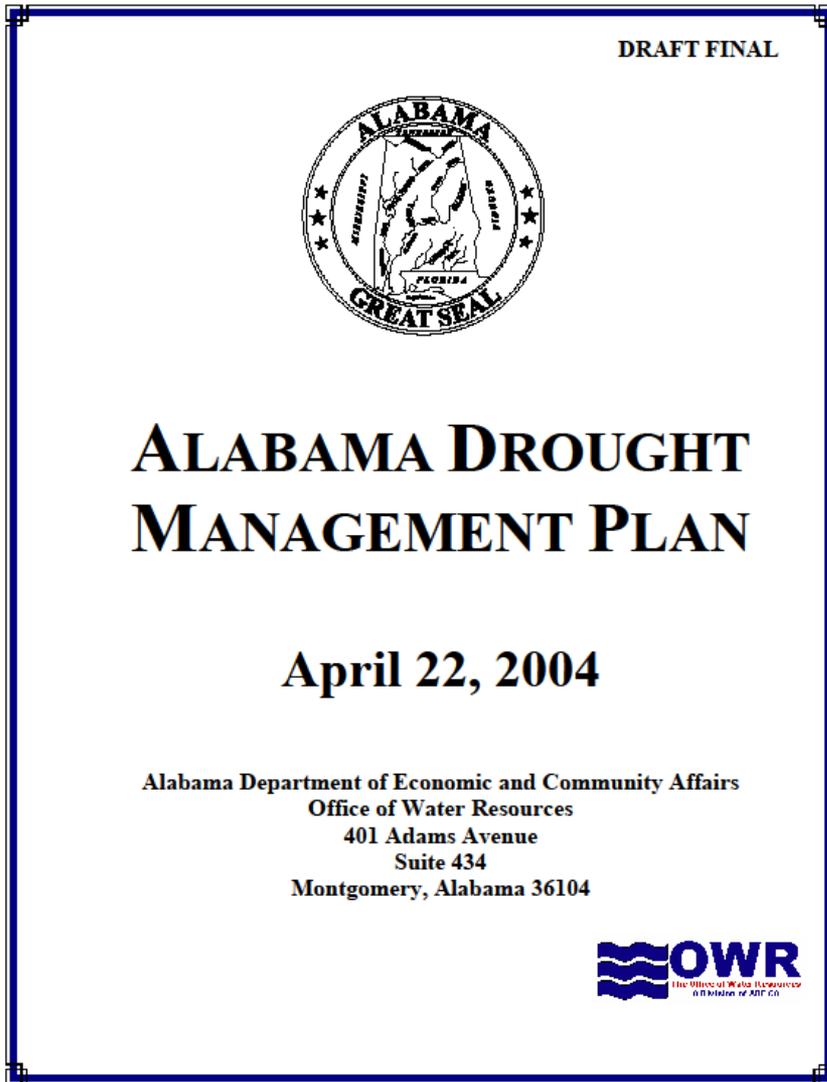
(334) 242-5697



BACKGROUND ON PLANNING

- ✘ Initial Executive Order on drought planning (EO# 70) issued by the Governor on May 2002
 - + Established organization and process
 - ✘ Alabama Drought Assessment & Planning Team (ADAPT)
 - ✘ Monitoring & Assessment Group (MAG)
 - ✘ Drought Impact Group (DIG)
- ✘ Alabama Drought Plan – Released 2004

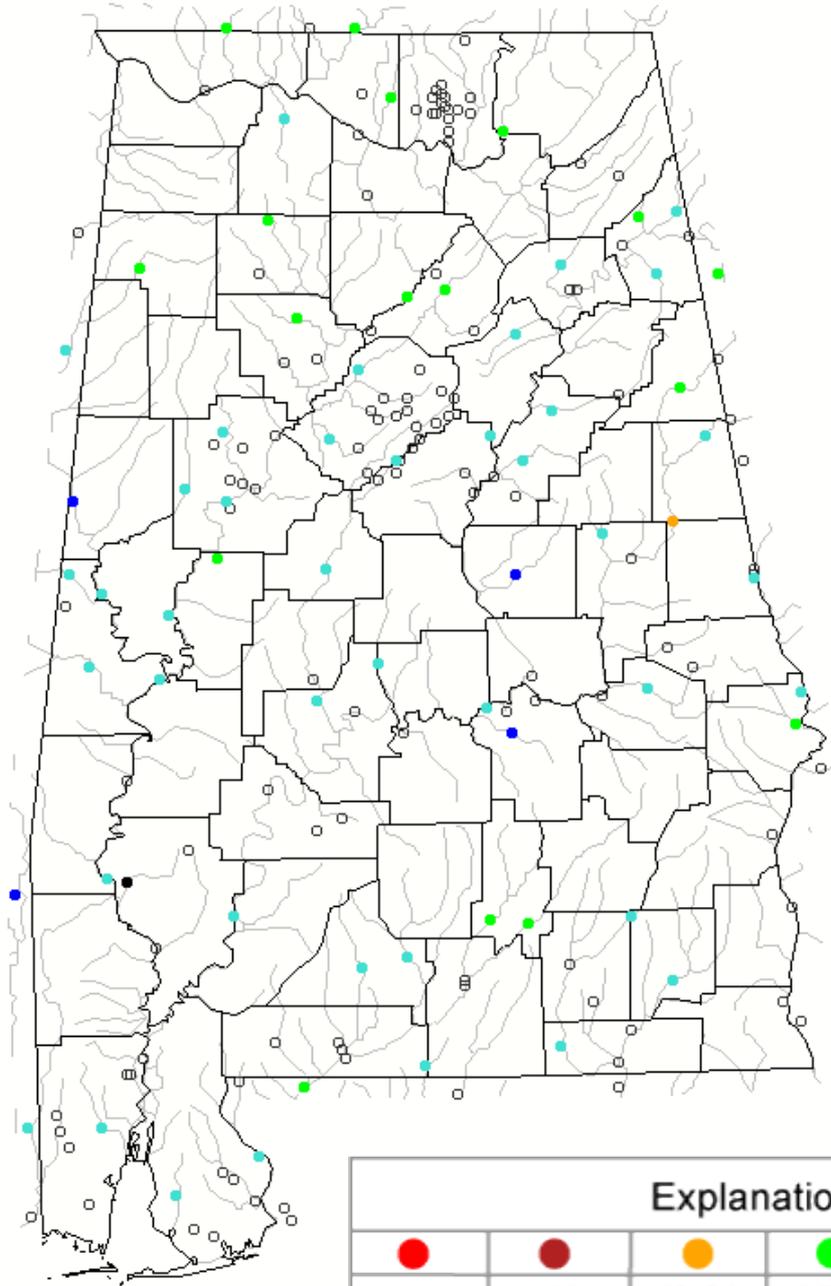
ALABAMA DROUGHT PLAN



- ✘ First Alabama statewide drought plan
- ✘ Established 4 drought levels:
 - + Advisory
 - + Watch
 - + Warning
 - + Emergency
- ✘ Focus on communication and coordination with water managers and users

DROUGHT INDICATORS

- ✘ Precipitation
- ✘ Soil Moisture
 - + Lawn & Garden
 - + Crop Moisture
 - + Palmer Drought Severity Index
- ✘ Forestry Fire Conditions
- ✘ Streamflows
- ✘ Groundwater levels
- ✘ Reservoir elevations
- ✘ Impacts in 5 areas
 - + Agriculture
 - + Industrial
 - + Domestic Supply
 - + Recreation
 - + Environment



Map of Alabama Streamflow Gages

Explanation - Percentile classes							
Low	<10 Much below normal	10-24 Below normal	25-75 Normal	76-90 Above normal	>90 Much above normal	High	Not-ranked

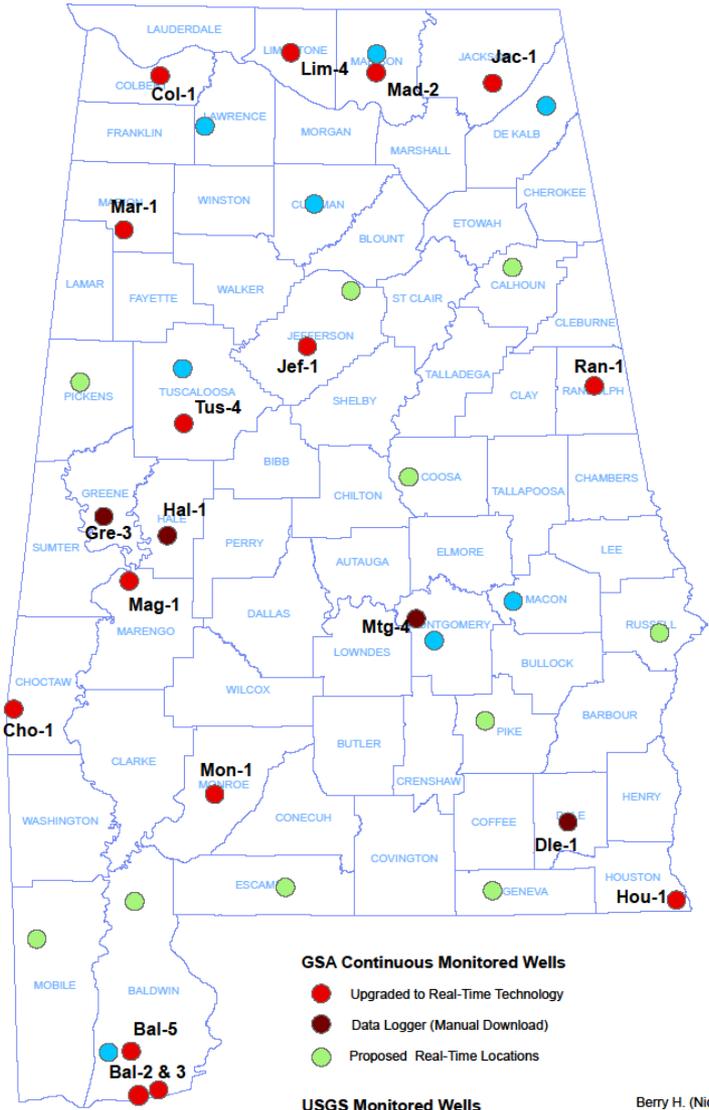
Map of Alabama Reservoirs



RESERVOIR SYSTEM COORDINATION

- ✘ TVA System
- ✘ COE System
 - + ACF Basin
 - + ACT Basin
 - + Tenn-Tom
 - + Warrior-Tom
- ✘ Alabama Power Reservoirs
 - + Coosa System
 - + Tallapoosa System
 - + Warrior River

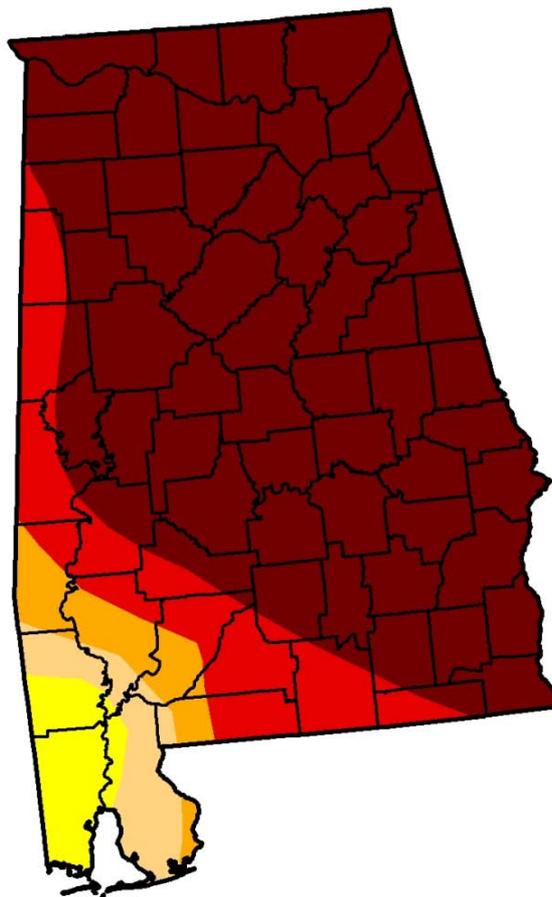
Map of Alabama Groundwater Monitoring Sites



Berry H. (Nick) Tew, Jr.
State Geologist

ALABAMA DROUGHT PLANNING REGIONS

ALABAMA DROUGHT MONITOR – AUGUST 21, 2007



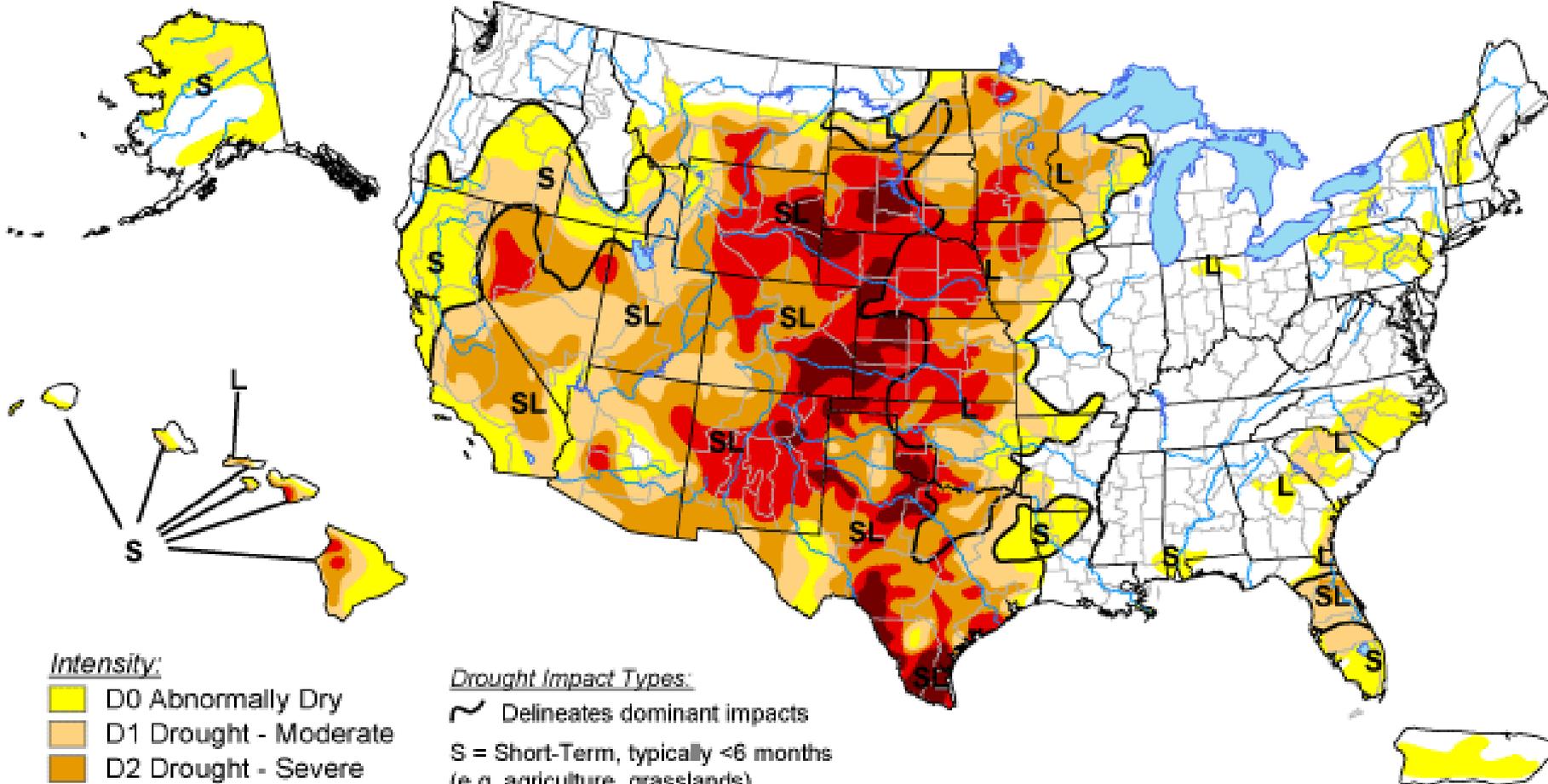
Week	Nothing	D0-D4	D1-D4	D2-D4	D3-D4	D4
August 21, 2007	0.00	100.00	95.95	91.73	87.45	74.3

BACKGROUND (CON'T)

- ✘ 2007 drought was first time to exercise Alabama Drought Plan in actual drought
 - + Coordination and communication worked very well
 - ✘ Especially with regard to reservoir systems
 - + Developed process for Alabama input to national drought monitor map (US Drought Monitor)
 - + Lessons learned included:
 - ✘ Importance of monitoring conditions and impacts
 - ✘ Adjustments to drought regions
 - ✘ Adjustments to drought indicators
 - ✘ Need for local and timely impact information

U.S. Drought Monitor

April 9, 2013
Valid 7 a.m. EDT



Intensity:

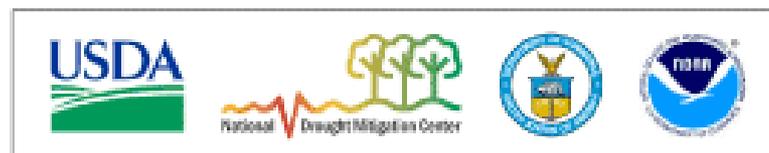
- D0 Abnormally Dry
- D1 Drought - Moderate
- D2 Drought - Severe
- D3 Drought - Extreme
- D4 Drought - Exceptional

Drought Impact Types:

- Delineates dominant impacts
- S = Short-Term, typically <6 months (e.g. agriculture, grasslands)
- L = Long-Term, typically >6 months (e.g. hydrology, ecology)

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, April 11, 2013
Author: David Miskus, NOAA/NWS/NCEP/CPC

U.S. Drought Monitor

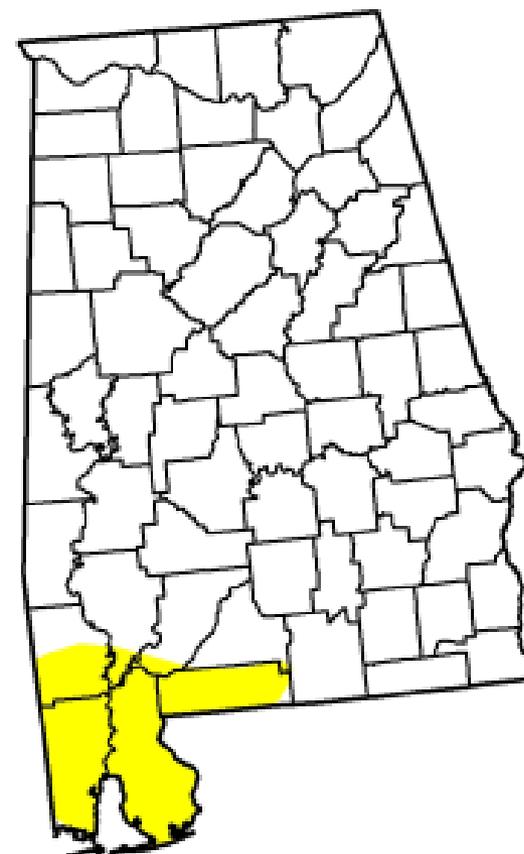
April 9, 2013

Valid 7 a.m. EST

Alabama

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	91.01	8.99	0.00	0.00	0.00	0.00
Last Week (04/02/2013 map)	94.22	5.78	0.00	0.00	0.00	0.00
3 Months Ago (01/08/2013 map)	39.94	60.06	33.67	19.42	9.81	0.00
Start of Calendar Year (01/01/2013 map)	40.07	59.93	33.67	19.47	9.81	0.00
Start of Water Year (09/25/2012 map)	71.58	28.42	19.42	15.36	8.69	0.00
One Year Ago (04/03/2012 map)	57.87	42.13	32.96	24.67	16.85	3.98



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, April 11, 2013

David Miskus, NOAA/NWS/NCEP/Climate Prediction Center

DROUGHT DECLARATIONS



Release Date: February 28, 2013



For Public Dissemination Alabama Drought Declarations

In accordance with the Executive Order 19 and the Alabama Drought Management Plan, the ADECA Office of Water Resources (OWR), based on a review of current and anticipated conditions, has declared the following portions of the State of Alabama to be under the specified drought declaration levels.

Declaration Level

Emergency None
Warning None
Watch None
Advisory None

None All 9 Regions the Alabama Drought Management Plan which includes the counties of: Autauga, Baldwin, Barbour, Bibb, Blount, Bullock, Butler, Calhoun, Chambers, Cherokee, Chilton, Choctaw, Clarke, Clay, Cleburne, Coffee, Colbert, Conecuh, Coosa, Covington, Crenshaw, Cullman, Dale, Dallas, DeKalb, Elmore, Escambia, Etowah, Fayette, Franklin, Geneva, Greene, Hale, Henry, Houston, Jackson, Jefferson, Lamar, Lauderdale, Lawrence, Lee, Limestone, Lowndes, Macon, Madison, Marengo, Marion, Marshall, Mobile, Monroe, Montgomery, Morgan, Perry, Pickens, Pike, Randolph, Russell, Shelby, St.Clair, Sumter, Talladega, Tallapoosa, Tuscaloosa, Walker, Washington, Wilcox, and Winston



Legend
No Drought Declaration
Advisory
Watch
Warning
Emergency

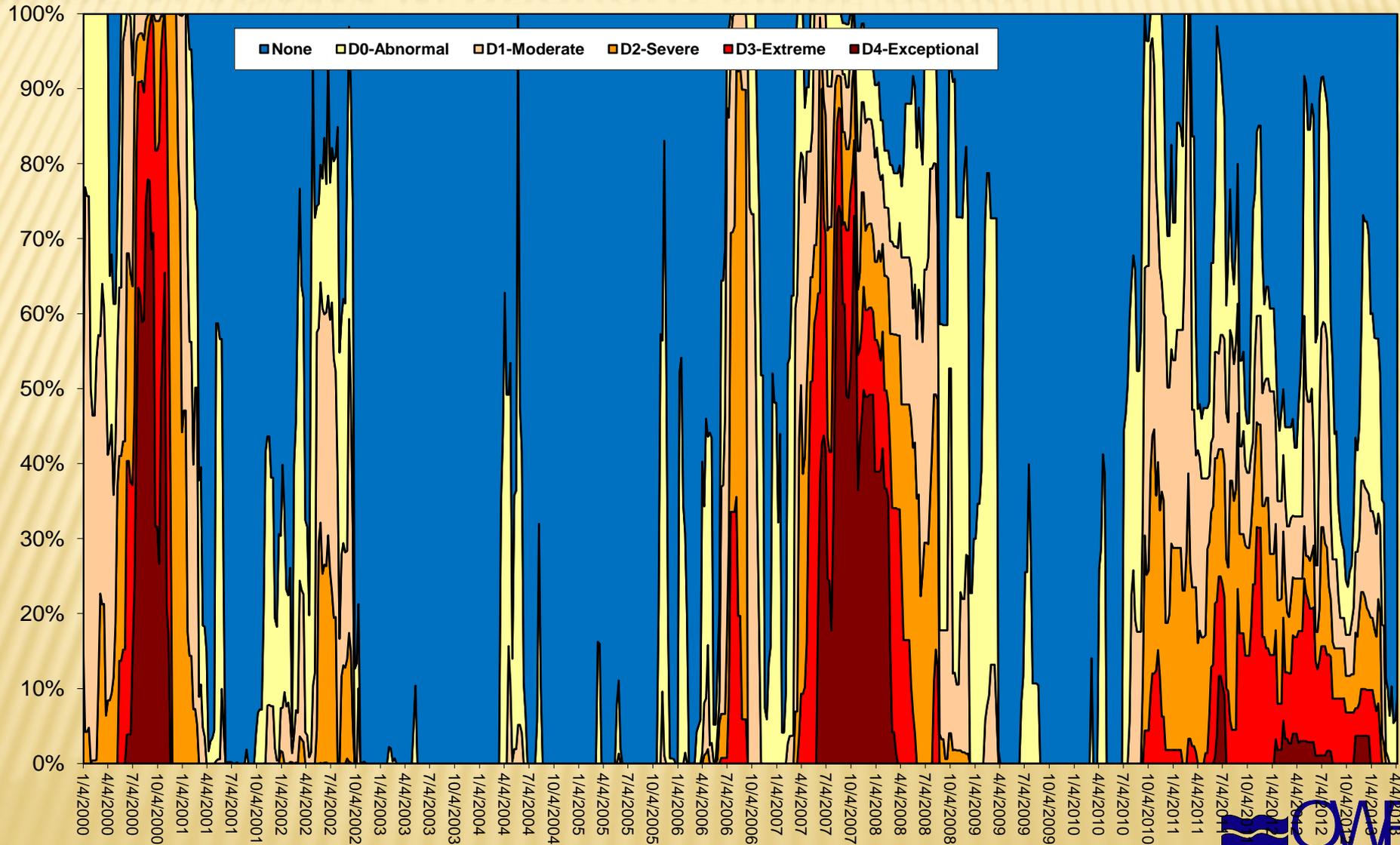
Recent rains have continued to improve conditions in the state. However, public water systems and other non-public and private water users should continue to monitor water conditions and review plans as we head into the drier spring and summer seasons. The OWR will continue to provide updated notifications as needed.

- ✘ OWR periodically revises the Drought Declarations based on current and projected conditions
- ✘ Broad based agency and stakeholder input
- ✘ Latest issued on February 28, 2013

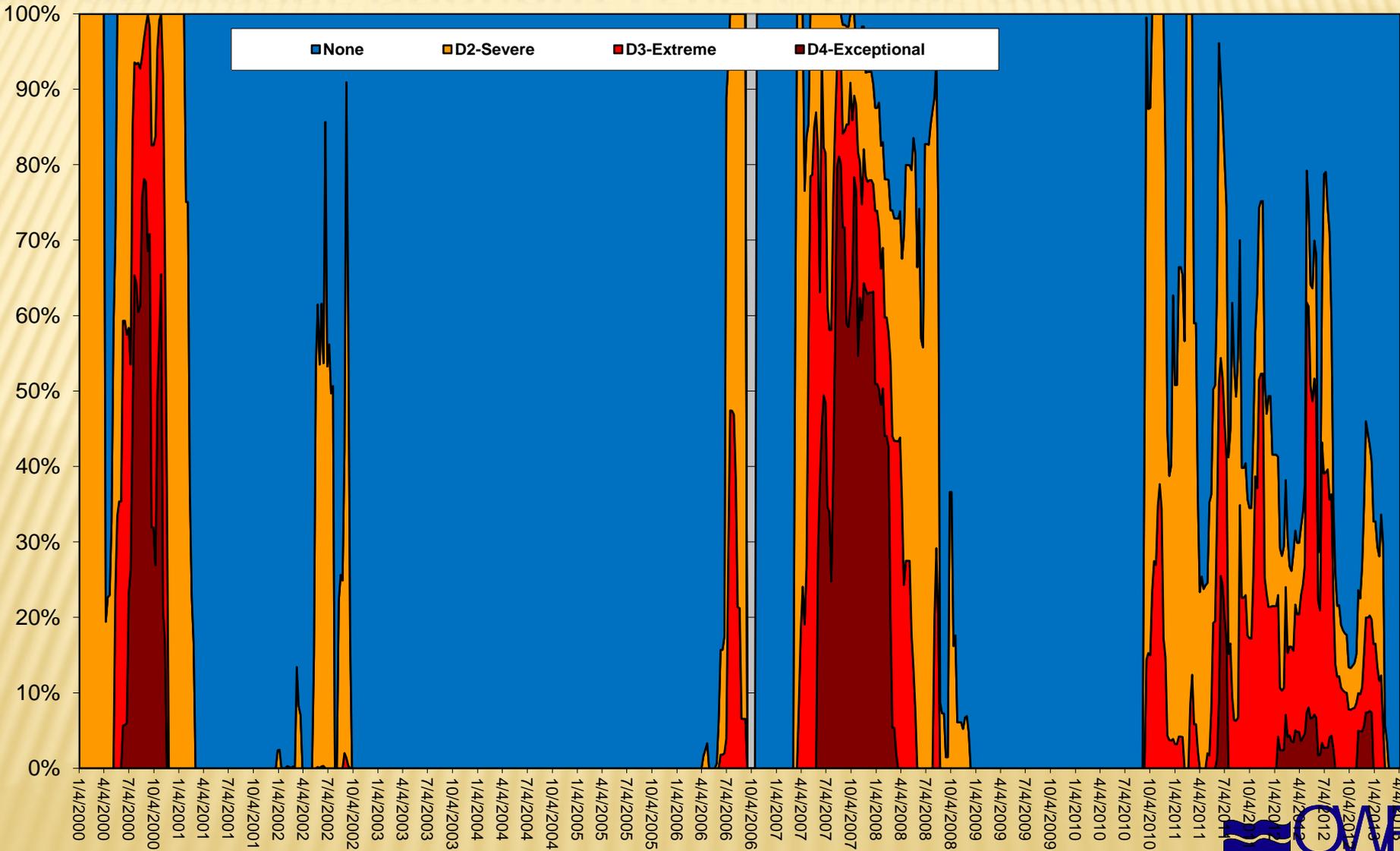
For further information, please visit our web site at www.adeca.alabama.gov/water and follow the links to the Office of Water Resources. You may also reach our office by phone at (334) 242-5499, fax at (334) 242-0776, or e-mail at drought@adeca.alabama.gov.



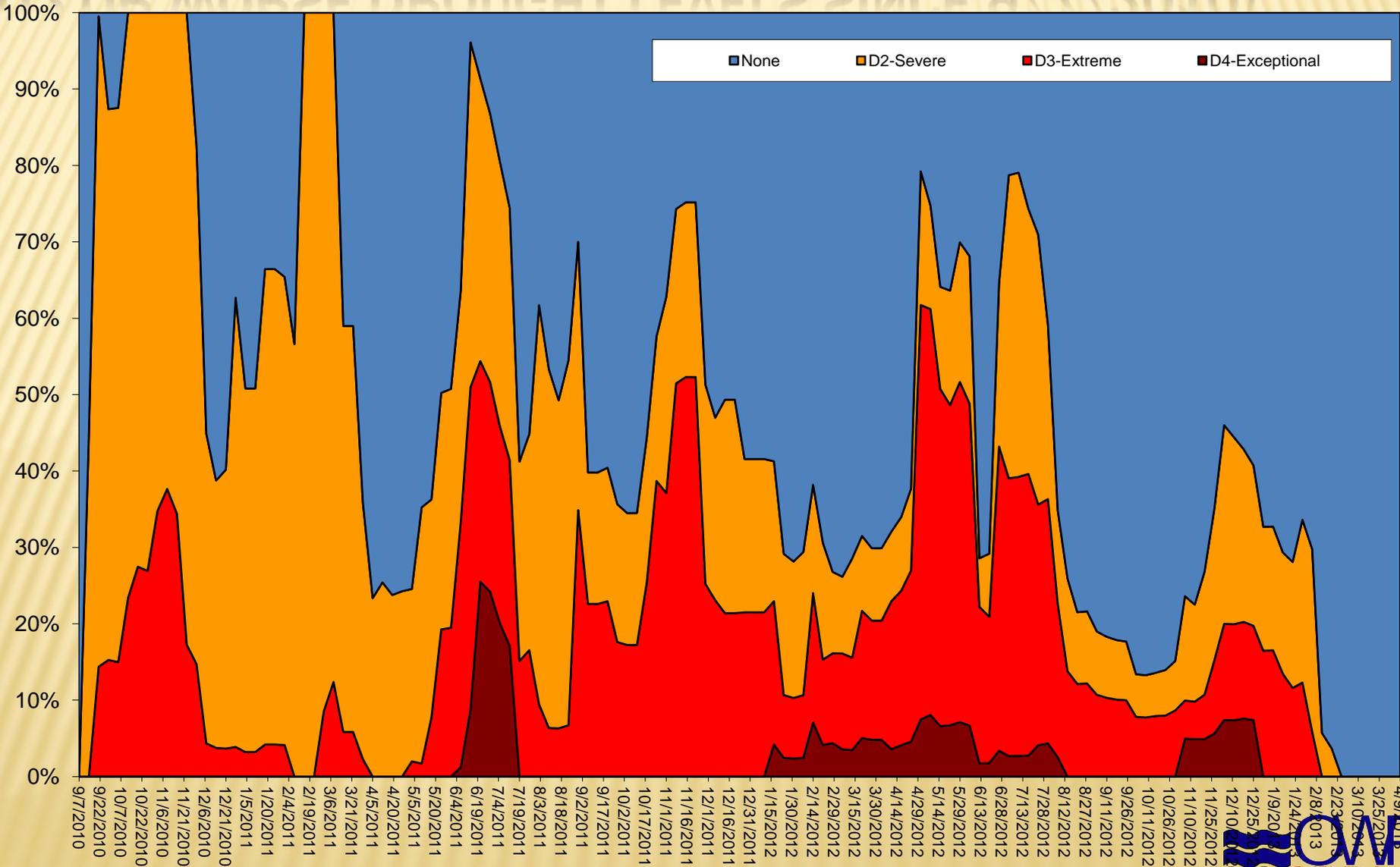
ALABAMA DROUGHT MONITOR PERCENTAGES (% OF ALABAMA IN DROUGHT SINCE 2000)



ALABAMA DROUGHT MONITOR PERCENTAGES (D2 OR WORSE DROUGHT LEVELS SINCE 2000)



ALABAMA DROUGHT MONITOR PERCENTAGES (D2 OR WORSE DROUGHT LEVELS SINCE 9/7/2010)



EXECUTIVE ORDER 19 – DROUGHT MANAGEMENT

State of Alabama: Office of Governor Robert Bentley

http://governor.alabama.gov/news/news_detail.aspx?ID=5424

Office of the Governor

ROBERT BENTLEY
Governor



Press Office

June 24, 2011

EXECUTIVE ORDER NUMBER 19

WHEREAS, water is one of Alabama's most important resources;

WHEREAS, when drought conditions occur, they endanger our water resources and adversely affect the health, welfare, and livelihood of our citizens and visitors;

WHEREAS, drought is a natural disaster that, unlike floods or tornadoes, does not occur in a violent burst but gradually happens;

WHEREAS, a large number of organizations and state and federal agencies are involved in activities associated with drought monitoring or manage programs impacted by drought conditions;

WHEREAS, a focus on drought preparedness and mitigation at all levels of government will better our response to drought conditions;

WHEREAS, the Office of Water Resources Division of the Alabama Department of Economic and Community Affairs (ADECA OWR) is charged by the Alabama Water Resources Act to plan, coordinate, develop and manage Alabama's ground and surface water resources; and,

WHEREAS, a proactive approach to drought planning and assessment is necessary so current and future generations can continue to enjoy this valuable resource.

NOW, THEREFORE, based upon these considerations, and for other good and valid reasons related thereto, I, Robert Bentley, Governor of the State of Alabama, by virtue of the authority vested in me by the constitution and laws of the State of Alabama, do hereby establish the *Alabama Drought Assessment and Planning Team (ADAPT)* to advise the ADECA OWR in the development and implementation of all drought related activities.

BE IT ORDERED that the ADECA OWR Division Director shall serve as Chairman of ADAPT. It shall be the duty of the ADAPT Chairman to call, organize, and conduct meetings in accordance with ADAPT's operating procedures. ADAPT shall consist of the following members:

1. ADECA OWR Division Director
2. Alabama Emergency Management Agency (AEMA) Director
3. USDA Rural Development Director
4. USDA Farm Services Agency Director
5. Alabama Department of Environmental Management (ADEM) Director
6. Alabama Adjutant General
7. Alabama Agriculture and Industries Commissioner
8. Alabama Department of Conservation and Natural Resources Commissioner
9. Alabama Forestry Commission State Forester
10. Chairman of the Drought Monitoring and Impact Group (MIG)
11. Two members, representing the State at large, appointed by the Governor

BE IT FURTHER ORDERED that the Governor may elect to appoint additional members to ADAPT at a later date.

BE IT FURTHER ORDERED, that ADAPT shall have at least one standing subcommittee known as the Drought

- ✘ Released on June 24, 2011
- ✘ Makes minor revision to the ADAPT organizational structure
 - + Slight adjustment to ADAPT:
 - ✘ Added DCNR Commissioner
 - ✘ Added FSA Director
 - ✘ Added Alabama State Forester
 - ✘ Deleted DIG position
 - + MAG and DIG combined into MIG
- ✘ Establishes formal requirement for Drought Plan
- ✘ Requires ADAPT to adopt formal procedures for operation



ALABAMA WATER RESOURCES COMMISSION

DROUGHT MANAGEMENT SUBCOMMITTEE

FINAL

2012 Report on Alabama Drought Planning and Management

SUMMARY OF RECOMMENDATIONS

The following is a brief summary of the recommendations developed by the Drought Subcommittee of the Alabama Water Resources Commission. More detailed discussion and descriptions of each recommendation are contained in the Recommendations Section of the report beginning on Page 3.

Recommendation Area: Alabama Drought Legislation and Alabama Drought Management Plan

Recommendation 1. The AWRC should support the Alabama Drought Planning and Response Act legislation including actions to formalize procedures for the state level Drought Declaration process and the Alabama input into the U.S. Drought Monitor map.

Recommendation 2. The subcommittee endorses the current draft update to the Alabama Drought Plan and recommends that the AOWR proceed with formalizing those edits into a final document.

Recommendation 3. The AOWR and the MIG should improve the criteria and flexibility in the Alabama Drought Declaration process including the ability to delineate smaller geographic areas and by water use sectors.

Recommendation Area: Funding and Staffing

Recommendation 4. Additional funding for the AOWR in support of drought-related activities should be provided.

Recommendation 5. Additional funding for the Office of the State Climatologist in support of drought-related activities should be provided.

Recommendation Area: Data Needs

Recommendation 6. The AWAWG should include drought-related data needs in its assessment of overall water resources data needs for Alabama.

Recommendation 7. Public water systems should be required to report the status of water sources and any response to drought conditions to the AOWR.

Recommendation Area: Education and Outreach

Recommendation 8. The Subcommittee recommends the AOWR consult with the ADECA CID office on how best to work with media outlets to better publicize drought conditions and impacts.

Recommendation 9. The AOWR should take the lead in coordinating state level activities for water conservation and water efficiency programs in Alabama.

- ✘ Members:
 - + Ashley Cousins, Chairperson
 - + Willard Bowers
 - + Dennis Bragg
 - + Joe Howle
 - + Buddy Morgan
 - + Malcolm Steeves, Ex Officio
- ✘ Nine Specific Recommendations

AWRC DROUGHT PLANNING SUBCOMMITTEE RECOMMENDATIONS

Recommendation Area: Alabama Drought Legislation and Alabama Drought Management Plan

1. The AWRC should support the Alabama Drought Planning and Response Act legislation including actions to formalize procedures for the state level Drought Declaration process and the Alabama input into the U.S. Drought Monitor map.
2. The subcommittee endorses the current draft update to the Alabama Drought Plan and recommends that the AOWR proceed with formalizing those edits into a final document.
3. The AOWR and the MIG should improve the criteria and flexibility in the Alabama Drought Declaration process including the ability to delineate smaller geographic areas and by water use sectors.

Recommendation Area: Funding and Staffing

4. Additional funding for the AOWR in support of drought-related activities should be provided.
5. Additional funding for the Office of the State Climatologist in support of drought-related activities should be provided.

Recommendation Area: Data Needs

6. The AWAWG should include drought-related data needs in its assessment of overall water resources data needs for Alabama.
7. Public water systems should be required to report the status of water sources and any response to drought conditions to the AOWR.

Recommendation Area: Education and Outreach

8. The Subcommittee recommends the AOWR consult with the ADECA CID office on how best to work with media outlets to better publicize drought conditions and impacts.
9. The AOWR should take the lead in coordinating state level activities for water conservation and water efficiency programs in Alabama.

ALABAMA DROUGHT PLAN – 2013 REVISION

DRAFT



ALABAMA DROUGHT MANAGEMENT PLAN

Alabama Department of Economic and
Community Affairs
(ADECA)

Alabama Office of Water Resources

XXXXX XX, 2013

{February 26, 2013 Draft}



- ✘ Reflects current process for inter-agency and stakeholder coordination, US Drought Monitor input and Drought Declaration revisions
- ✘ Adds ADAPT operating procedures
- ✘ Adds coordination roles with:
 - + Alabama Water Resources Commission
 - + Alabama State Climatologist
- ✘ Clarification of drought triggers and added flexibility in drought declaration area designations
- ✘ Incorporates compliance with Alabama Open Meetings Act



ALABAMA DROUGHT PLANNING & RESPONSE ACT

1 149873-1:n:02/28/2013:JET/tj LRS2013-1203

2
3
4
5
6
7
8 SYNOPSIS: This bill would codify the establishment of
9 the Alabama Drought Assessment and Planning Team
10 created by the Governor's June 24, 2011, Executive
11 Order Number 19, and provide for its membership,
12 duties, responsibilities, and powers.

13 This bill would establish the Monitoring and
14 Impacts Group Subcommittee and provide for its
15 membership, duties, responsibilities, and powers.

16 This bill would codify the charges given to
17 the Alabama Office of Water Resources which is a
18 division of the Alabama Department of Economic and
19 Community Affairs, with the responsibility of
20 developing a State Drought Plan and periodically
21 issuing drought declarations.

22 The bill would reaffirm the Governor's
23 ability to respond to extreme drought conditions
24 under the powers provided under the Alabama
25 Emergency Management Act of 1955.

26 This bill would allow the Office of Water
27 Resources to promulgate rules.

- ✘ Outgrowth of efforts by the Permanent Joint Legislative Committee on Water Policy and Management
 - + Extensive public review and input over the last few months of 2012
 - + Companion bills in the 2013 legislative session
 - + SB 208 Introduced 2/14 by Sen. Beasley
 - + HB 382 introduced 3/5 by Rep. Tuggle

BASIC PROVISIONS

- ✘ Maintains current focus of coordination and communication
- ✘ Incorporates key aspects - Executive Order 19
 - + Requirement for State Drought Plan
 - + Role of the Office of Water Resources
 - + Drought organizational structure
 - ✘ Alabama Drought Assessment and Planning Team (ADAPT)
 - ✘ Monitoring and Impact Group (MIG)

BASIC PROVISIONS (CONT'D)

- ✘ Formalizes process for Alabama input into National Drought Monitor map
- ✘ Clarifies role of State Climatologist in drought response processes
- ✘ Improves reporting by public water systems on the status of local conditions and water sources

U.S. Drought Monitor Alabama

April 9, 2013
Valid 7 a.m. EST

	Drought Conditions (Percent Area)					
	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	91.01	8.99	0.00	0.00	0.00	0.00
Last Week (04/02/2013 map)	94.22	5.78	0.00	0.00	0.00	0.00
3 Months Ago (01/08/2013 map)	39.94	60.06	33.67	19.42	9.81	0.00
Start of Calendar Year (01/01/2013 map)	40.07	59.93	33.67	19.47	9.81	0.00
Start of Water Year (09/25/2012 map)	71.58	28.42	19.42	15.36	8.69	0.00
One Year Ago (04/03/2012 map)	57.87	42.13	32.96	24.67	16.85	3.98

Intensity:

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



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, April 11, 2013
David Miskus, NOAA/NWS/NCEP/Climate Prediction Center

BASIC PROVISIONS (CONT'D)

- ✘ Formalizes the state's drought declaration process
- ✘ Reaffirms Governor's emergency powers for restrictions on water use under the drought-related states of emergency
- ✘ Goal is to ensure drought planning and procedures can easily be incorporated into comprehensive statewide water resources planning process

ALABAMA DROUGHT PLANNING & RESPONSE ACT STATUS

× Companion Bills

+ SB 208 - Sen. Beasley

- × Introduced on 2/14
- × Amended 3/5 in Committee to add to ADAPT membership
 - ★ State Executive Director of the Soil & Water Conservation Committee
 - ★ State Conservationist from the Alabama NRCS
- × Past Senate on 4/11

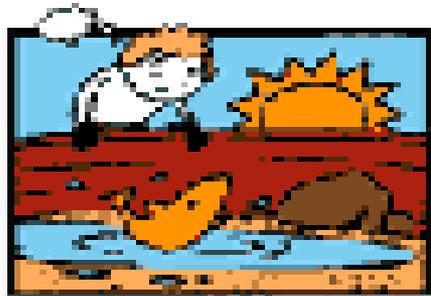
+ HB 382 - Rep. Tuggle

- × Introduced with the Senate amendments
- × Referred to the House Committee on Commerce & Small Business
- × Rec'd Favorable Committee Vote on 4/10

NEXT STEPS

- ✘ **Alabama Drought Plan Update Publication**
 - + Endorsed by AWRC
 - + Endorsed by Monitoring & Impact Group (MIG)
 - + Anticipated endorsement by Alabama Drought Assessment and Planning Team (ADAPT) on April 30, 2013
- ✘ **Monitor the Drought Planning and Response Act legislation (SB 208/HB 382) for passage and implications to Plan**
- ✘ **Also continuing to work with MIG on review of drought indicators and triggers**

**THE
HYDRO-ILLOGICAL
CYCLE**



CONCERN



PANIC



RAIN



AWARENESS



DROUGHT



APATHY

CONTACT INFORMATION

Web: www.water.alabama.gov

E-mail: water@adeca.alabama.gov

Phone: Toll Free 1-877-ALAWATER
(252-9283)

or (334) 242-5499

FAX: (334) 242-0776