

# The North Carolina Drought Management Advisory Council

<http://www.ncdrought.org>

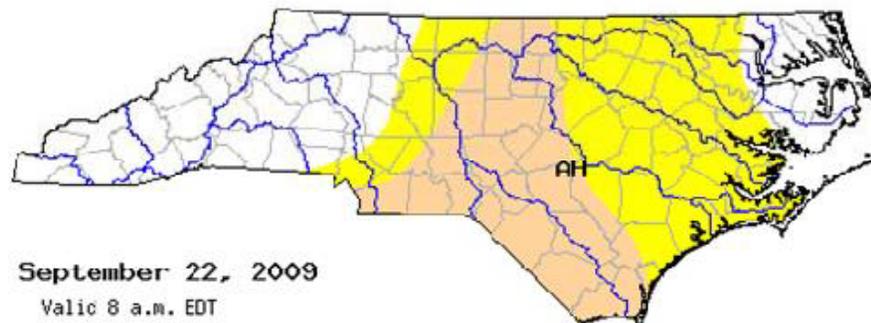


## NORTH CAROLINA Drought Management Advisory Council

Home | Current Conditions | News | About | Contacts | Education | Archives | Links

Hot Topics: [Drought Legislation](#), [Conservation Tips](#), [Drought FAQ](#)

### US Drought Monitor of NORTH CAROLINA



September 22, 2009

Valid 8 a.m. EDT

#### Drought Classifications

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

County Boundaries  Major River Basins ([View Map](#))

**A** = Agricultural (crops, pastures, grasslands)

**H** = Hydrological (water)

[Hi-Resolution Image](#) | [Print Version](#) | [Animation](#)

The U.S. Drought Monitor focuses on broad scale conditions. Information provided for North Carolina is relative to the information provided from all other states and the North Carolina Drought Management Advisory Council. Local conditions may vary.

### Counties Under Current Advisory

#### D1 - Moderate Drought

Alamance County  
Anson County  
Bladen County  
Brunswick County  
Caswell County  
Latham County  
Columbus County  
Cumberland County  
Durham County  
Guilford County  
Harnett County  
Hoke County  
Iredell County  
Montgomery County  
Moore County  
New Hanover County  
Orange County  
Pender County  
Person County  
Randolph County  
Richmond County  
Robeson County  
Sampson County  
Scotland County  
Stanly County  
Union County  
Wake County

Total: 27

#### D0 - Abnormally Dry

Beaufort County  
Bertie County  
Catawba County

# *NCDMAC Background*

The Drought Monitoring Council was an interagency coordination and information exchange body initially created in 1992.

In 2002, the council did a creditable job monitoring and coordinating drought responses, while increasing public awareness of the council's function and effectiveness. The General Assembly recognized the Drought Monitoring Council's leadership and performance by giving them an official statutory base and changed its name to the Drought Management Advisory Council (DMAC) to reflect the broader role of the council, which extends beyond monitoring drought conditions.

On July 17, 2003, [North Carolina General Statute 143.355.1](#) was ratified to assign the DMAC an important new role. A number of local governments indicated that it would be helpful to have official, objective drought status advisories to give them a reliable basis for their management responses. The new statute assigned this new advisory role to the DMAC and also specified that drought advisories are to be based on technical data to address varying conditions throughout the state.

An act to improve drought preparedness and response in North Carolina as recommended by the Environmental Review Commission was signed into law on July 31, 2008. [Drought Legislation, Section 16 of Session Law 2008-143](#) included added detail about members and participants in the work of the DMAC.

# Some Excruciating Detail

SECTION 16. G.S. 143-355.1 reads as rewritten:

"§ 143-355.1. Drought Management Advisory Council; drought advisories.

(a) The Department shall establish a Drought Management Advisory Council.

The purposes of the Council are:

(1) To improve coordination among local, State, and federal agencies; public water systems, as defined in G.S. 130A-313(10); and water users to improve the management and mitigation of the harmful effects of drought.

(2) To provide consistent and accurate information to the public about drought conditions, on drought conditions to the State to the U.S. Drought Monitor, the Environmental Management Commission, the Secretary, the Environmental Review Commission, and the public.

(b) The Department shall invite each of the following organizations to designate a representative to serve on the Council:

(1) North Carolina Cooperative Extension Service.

(2) State Climate Office at North Carolina State University.

(3) Public Staff of the Utilities Commission.

(4) Wildlife Resources Commission.

(5) Department of Agriculture and Consumer Services.

(6) Department of Commerce.

(7) Department of Crime Control and Public Safety.

(8) National Weather Service of the National Oceanic and Atmospheric Administration of the United States Department of Commerce.

(9) United States Geological Survey of the United States Department of the Interior.

(10) United States Army Corps of Engineers.

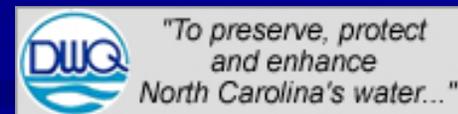
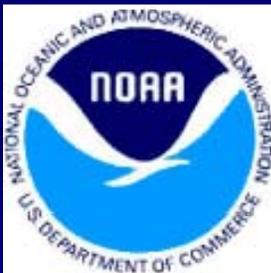
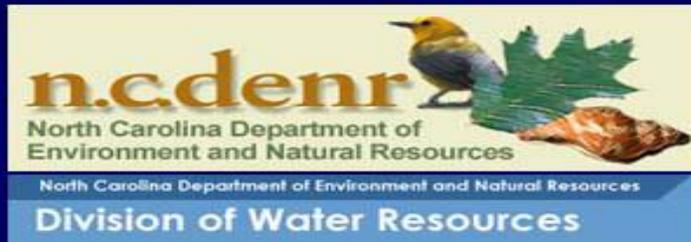
(11) United States Department of Agriculture.

(12) Federal Emergency Management Agency of the United States Department of Homeland Security.

(b1) Representatives designated under subsection (b) of this section shall have expertise or responsibility in meteorology, groundwater and surface water hydrology, water system operation and management, reservoir management, emergency response, or another subject area related to assessment and management of drought impacts.

# The North Carolina Drought Management Advisory Council

## Technical Drought Advisory Team



# *The North Carolina Drought Management Advisory Council*

## Technical Drought Advisory Team

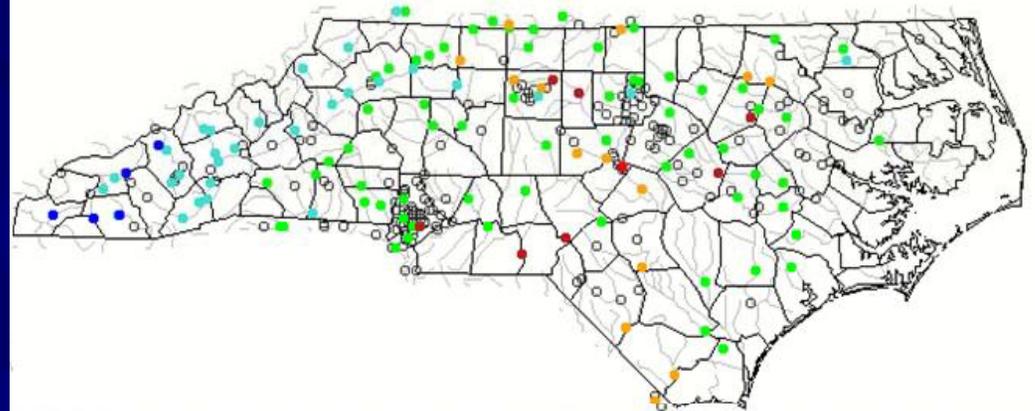
- Weekly GoToMeetings on Tuesday.
- Generally ~30 minutes with detailed reports to delineate drought conditions.
- Recommendations are sent to the US Drought Monitor author, typically as a graphical depiction accompanied by explanatory text.



# Streamflow & Groundwater Conditions

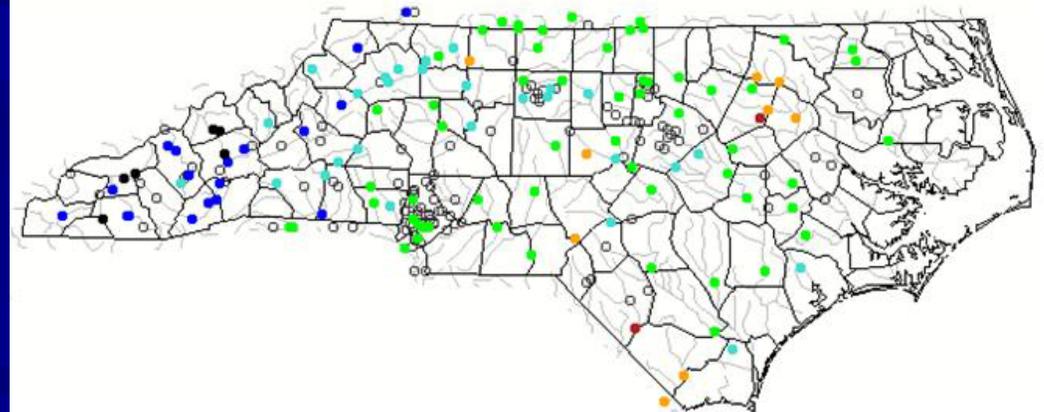
Map of real-time streamflow compared to historical streamflow for the day of the year (North Carolina)

Wednesday, September 30, 2009 08:32ET



Map of 7-day average streamflow compared to historical streamflow for the day of the year (North Carolina)

Tuesday, September 29, 2009



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



# Streamflow & Groundwater Conditions

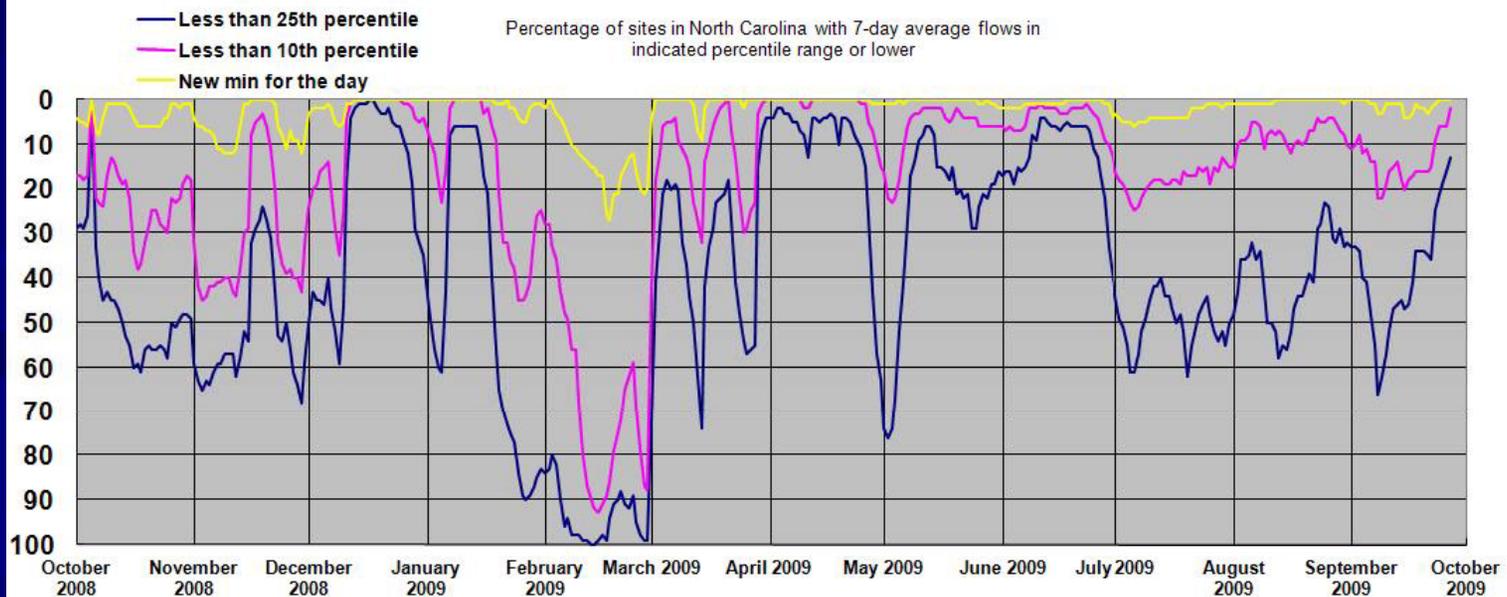
## Drought Watch -- *USGS State Information on Drought*

Map of below normal 7-day average streamflow compared to historical streamflow for the day of year

Tuesday, September 29, 2009

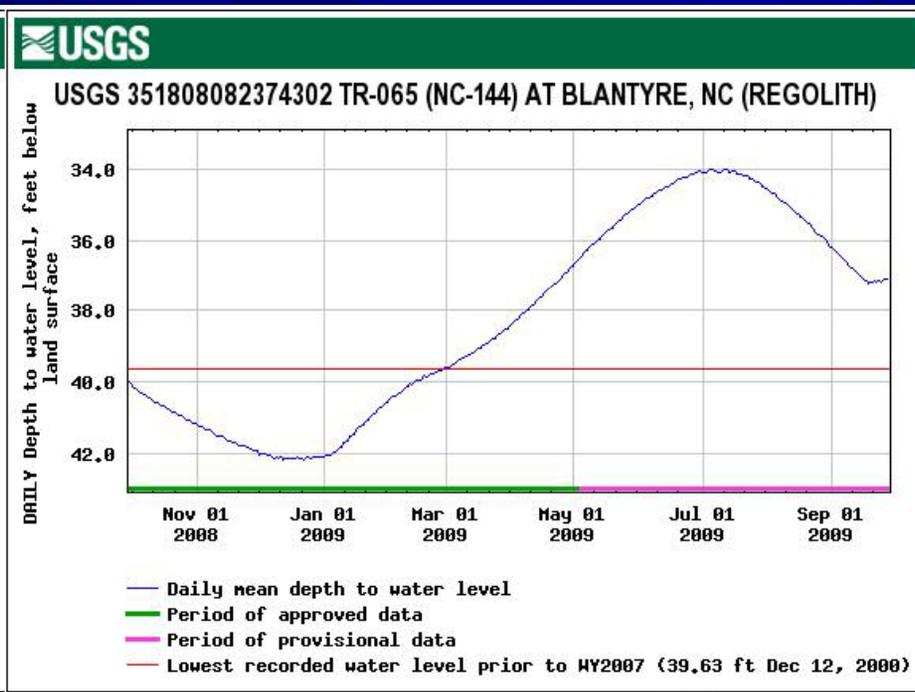
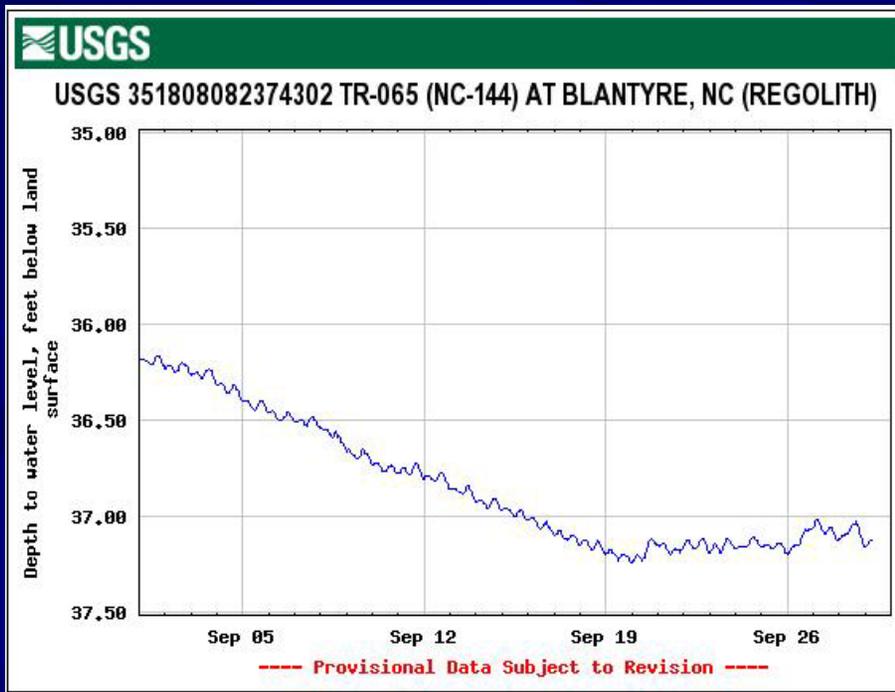


Explanation - Percentile classes				
Low	≤5	6-9	10-24	insufficient data for a hydrologic region
Extreme hydrologic drought	Severe hydrologic drought	Moderate hydrologic drought	Below normal	





# Streamflow & Groundwater Conditions



Corps Water Management Weekly Status Report – 28 Sep 2009

**Reservoir Summaries:**

Reservoir	28-Sep-09 0800 Elev (ft-msl)	Guide Curve (ft-msl)	Forecast 5-Oct-09 Elev (ft-msl)	7-day Avg Inflows cfs (%median)	September month-to-date Avg Inflows cfs (%median)	September month-to-date Rainfall at Dam (inches)
Falls	248.45	251.5	248.1	444 (444%)	112 (112%)	5.26
Jordan	212.85	216.0	212.7	595 (139%)	201 (47%)	3.74
Scott	1032.28	1030.0	1029.5	817 (213%)	482 (126%)	7.50
Kerr	294.54	299.50	294.0	2021 (72%)	1516 (54%)	3.33
Philpott	970.14	971.6	969.7	178(144%)	93 (75%)	2.62

	Current Flood Storage Percent Remaining	Current Water Quality Percent Remaining	Forecast 80% WQ Remaining	Forecast 60% WQ Remaining	Current Water Supply Percent Remaining	Forecast 80% WS Remaining	Forecast 60% WS Remaining
Falls	100	64	n/a	Mid Oct	74	n/a	Mid Nov
Jordan	100	56	n/a	n/a	100	*	*
Scott	96				100	*	*
Kerr	100						
Philpott	100						

Water supply and water quality forecasts extend through end of December 2009. "\*" indicates that storage remaining does not drop below indicated thresholds by end of forecast period.

**Falls:**

Currently near elev 248.4 ft (3.1 ft below guide curve); near a crest from recent rainfall and expecting to drop in elevation in the near future. Releases currently near 100 cfs and will maintain this rate as long as flows at Clayton allow. Clayton is currently near 345 cfs; target flow at Clayton is 210 cfs.

**Jordan:**

Currently near elev 212.85 ft (3.15 ft below guide curve). The CFR basin received a good amount of rainfall last week, allowing us to reduce releases to 125 cfs. The headwaters of Jordan received additional rain over the weekend, which should help stabilize the lake level for the next couple of days. Releases are currently 125 cfs, increasing to ~200 cfs by tomorrow. Lillington is currently near 320 cfs (target is approx 300 cfs daily average).

**W. Kerr Scott:**

Currently near elev 1032.3 ft (2.3 ft above guide curve) will begin release today to get lake level down to near 1029.5 ft msl and hold this lake level until the shoreline protection scheduling is firm. The lake will be drawn down to lake level 1028 during riprap placement (Oct 10-24 estimated dates).

**Kerr/Philpott:**

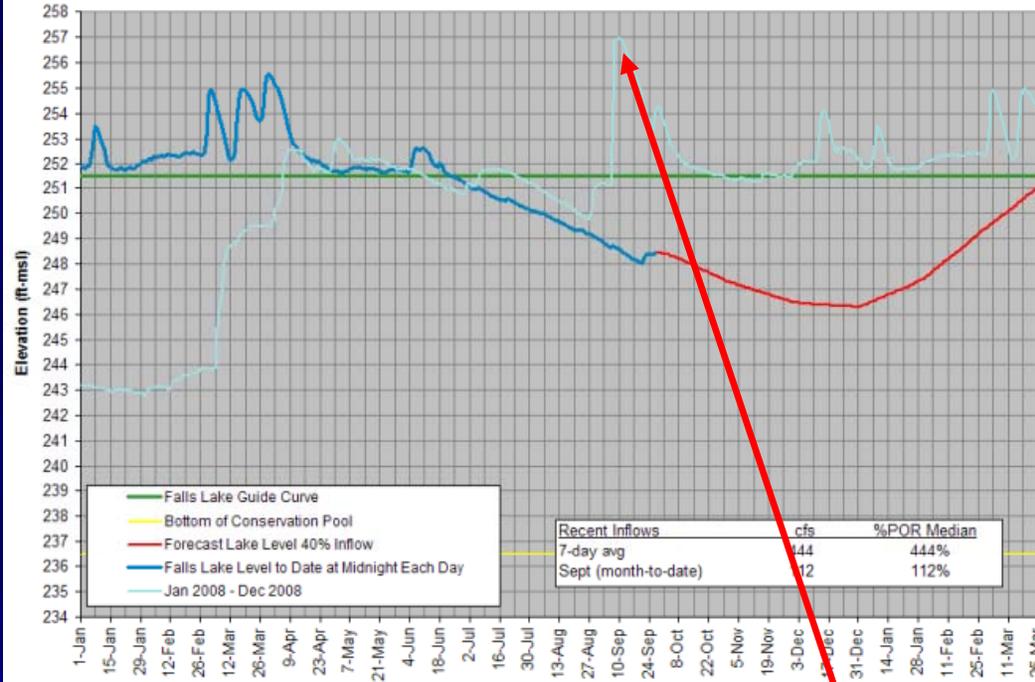
Kerr Lake is near elev 294.5 ft (5.0 ft below guide curve) and is expected to drop about 0.5 ft this week without additional rainfall. Minimum energy declaration this week to minimize drawdown, which equates to about 3200 cfs weekly average outflow. Slightly above normal inflows the next day or so in response to the recent rainfall in the watershed. Minimum weekly generation decreases by one-third in Oct, which will help reduce lake level drawdown.



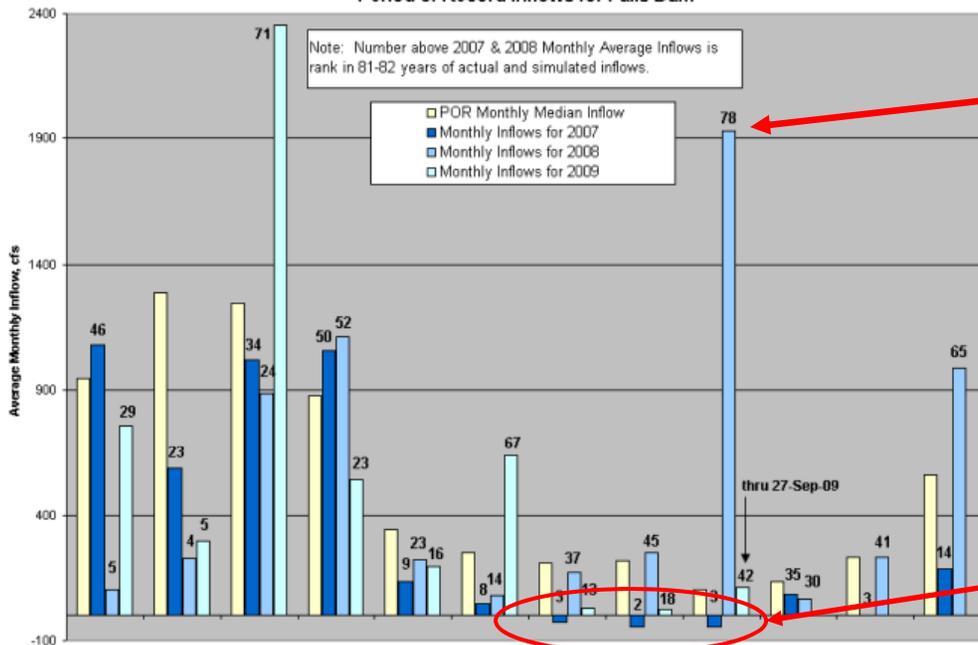


**US Army Corps  
of Engineers®**

Falls Forecast Lake Level -- 28 Sep 2009  
Assumes starting with 10% POR Median Inflows

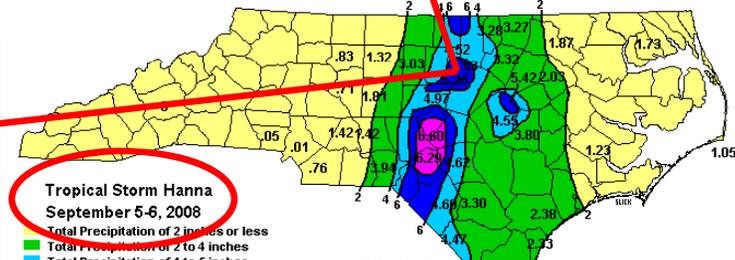


Period of Record Inflows for Falls Dam



**Tropical Storm Hanna  
September 5-6, 2008**

- Total Precipitation of 2 inches or less
  - Total Precipitation of 2 to 4 inches
  - Total Precipitation of 4 to 5 inches
  - Total Precipitation of 5 to 6 inches
  - Total Precipitation greater than 6 inches
- Precipitation amounts reported in inches.  
Analysis based on observed rainfall and radar estimates.



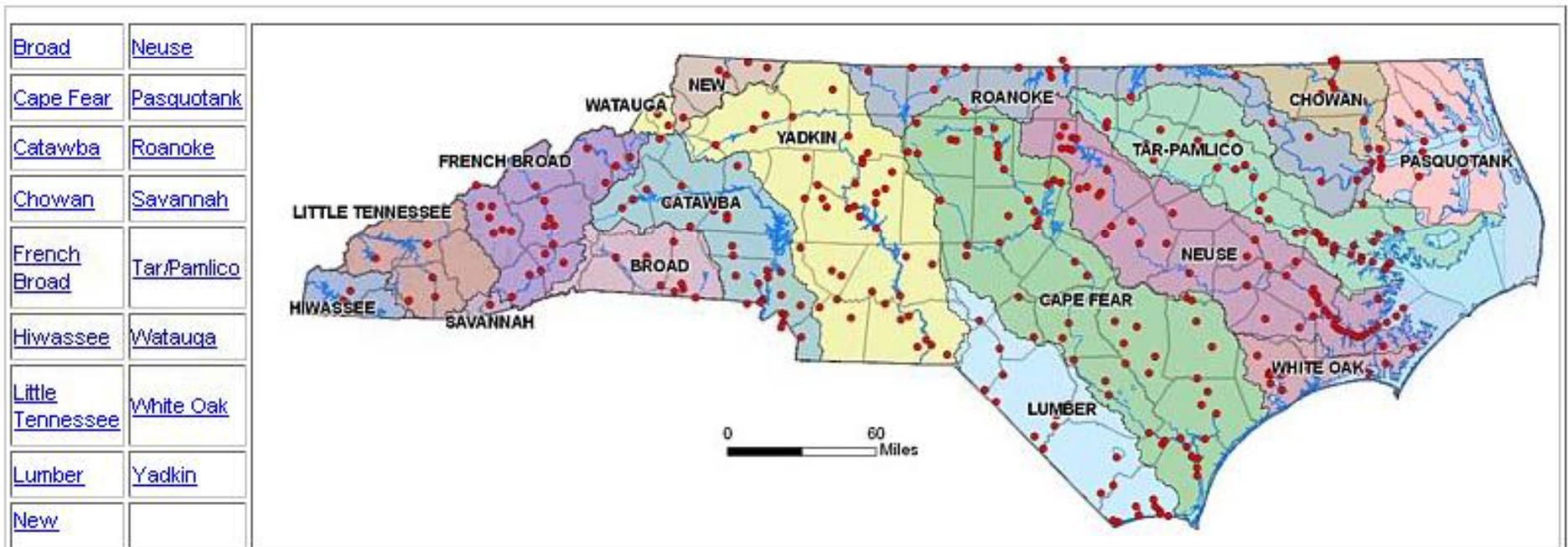


*"To preserve, protect and enhance North Carolina's water..."*



## Ambient Monitoring System

Currently there are 340 active AMS stations. Stations are located in all seventeen major river basins of the state, and in 95 of North Carolina's 100 counties.





# NORTH CAROLINA

## DEPARTMENT OF AGRICULTURE & CONSUMER SERVICES

### CROP CONDITION PERCENT

Crop	Very Poor	Poor	Fair	Good	Excellent
Cotton	1	7	25	56	11
Pasture	0	7	34	53	6
Peanuts	1	1	32	62	4
Sorghum	1	3	21	74	1
Soybeans	1	7	27	51	14
Sweet Potatoes	0	1	33	62	4

### TOPSOIL MOISTURE PERCENT

Region	Very Short	Short	Adequate	Surplus
State	1	8	67	24
Mountain Region	0	0	41	59
Piedmont Region	2	11	81	6
Coastal Plain Region	3	9	72	16

### Agricultural Statistics - Weather & Crops Report: For the week ending September 27, 2009

**GENERAL:** Parts of the state received heavy rainfall last week. Precipitation ranged from 0.02 inches in Williamston to 9.90 inches in Wilmington. The rain limited field activities in many areas of the state and some flooding was reported for the second straight week. Average temperatures were above normal, ranging from 62 to 77 degrees. There were 3.4 days suitable for field work, compared to 4.9 for the previous week. Statewide soil moisture levels were rated at 1% very short, 8% short, 67% adequate, and 24% surplus. Activities during the week included harvesting corn, tobacco, and sweet potatoes.

### COMPARISONS

Crop	This Week	Last Week	Last Year	5-Year Average
<b>Phenological:</b>				
Cotton % Bolls Opening	79	66	80	86
Soybeans % Leaf Drop	26	19	29	34
<b>Harvested:</b>				
Apples	57	52	70	68
Corn For Grain	70	56	67	76
Corn For Silage	86	84	89	94
Hay 3rd Cutting	60	59	44	43
Sorghum	50	48	40	44
Sweet Potatoes	35	16	27	28
Tobacco: Burley	72	64	71	76
Tobacco: Flue-cured	85	79	77	87



### Statewide Wildfire Summary

Period	# Fires	# Acres
September 27, 2009	0	0.0
Month to date	64	122.7
Year to date	2,945	11,292.3
10yr avg, Jan-Sep	4,237	23,366.0
10yr avg, 1999-2008	5,324	26,548.0

Additional data: [Daily Fire Occurrence Summary \(PDF\)](#)

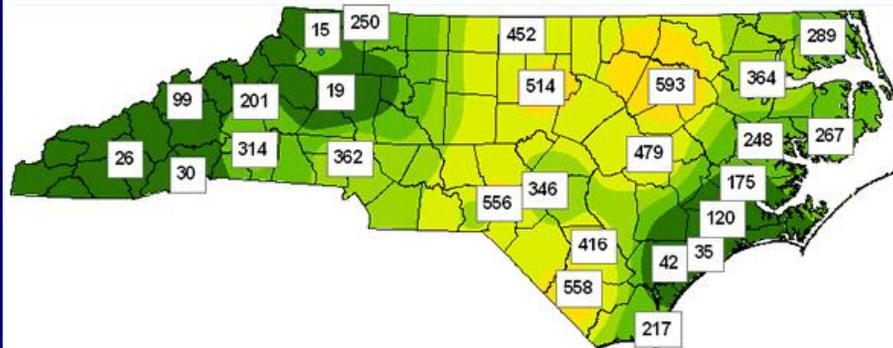
### Monthly Fire Summary for September, 2009

Date	# Fires	# Acres	Date	# Fires	# Acres
1	0	0.0	17	1	0.5
2	2	0.2	18	1	0.2
3	3	0.6	19	2	8.6
4	3	2.8	20	3	18.1
5	5	1.6	21	0	0.0
6	4	3.7	22	2	0.3
7	5	16.1	23	1	0.5
8	1	0.1	24	0	0.0
9	1	3.0	25	1	2.0
10	1	1.5	26	0	0.0
11	4	1.6	27	0	0.0
12	4	0.9	28		
13	1	0.2	29		
14	5	42.6	30		
15	9	12.4	31		
16	3	4.2	<b>Month to date</b>	<b>64</b>	<b>122.7</b>

### Keetch-Byram Drought Index (KBDI) Map

Observations on Monday, September 28, 2009 at 1300

KBDI is a soil/duff drought index that ranges from 0 (no drought) to 800 (extreme drought) and is based on soil capacity of 8 inches of water. Factors in the index are maximum daily temperature, daily precipitation, antecedent precipitation, and annual precipitation.



#### MAP KEY



#### RELATED RESOURCES

- o [KBDI Revisited: Prescribed Fire Applications \(PDF\)](#)
- o [KBDI: Can It Help Predict Wildland Fires? \(PDF\)](#)
- o [KBDI: A Guide to Fire Conditions &](#)

Between **0 and 200**, soil moisture and large class fuel moistures are high and do not contribute significantly to fire intensity.

# NC has 7 NWS offices

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## County Warning Areas



## County Warning Areas



### CWA Names

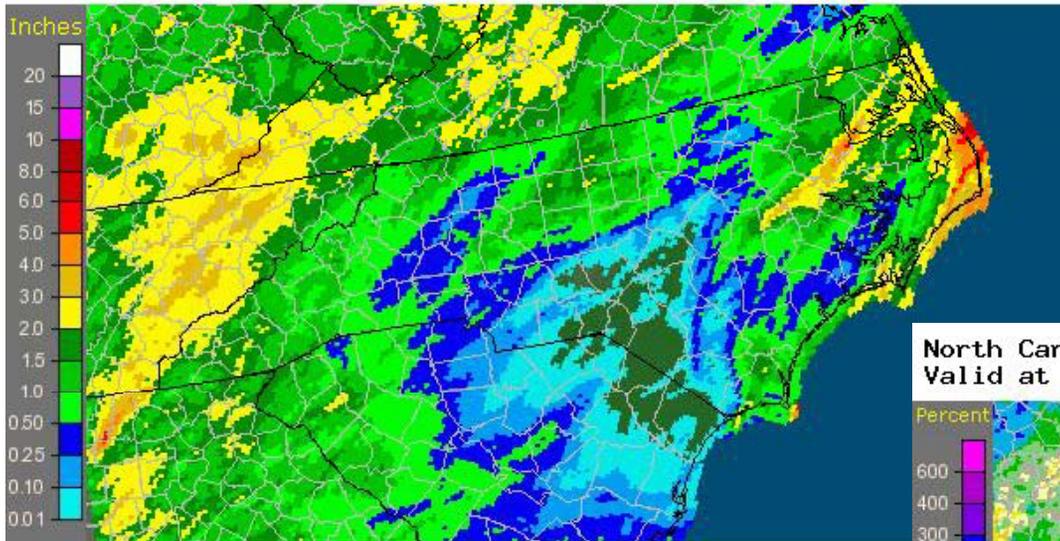
- Blacksburg
- Columbia
- Greenville/Spartanburg
- Morehead City
- Morristown
- Raleigh/Durham
- Wakefield
- Wilmington

### CWA Names

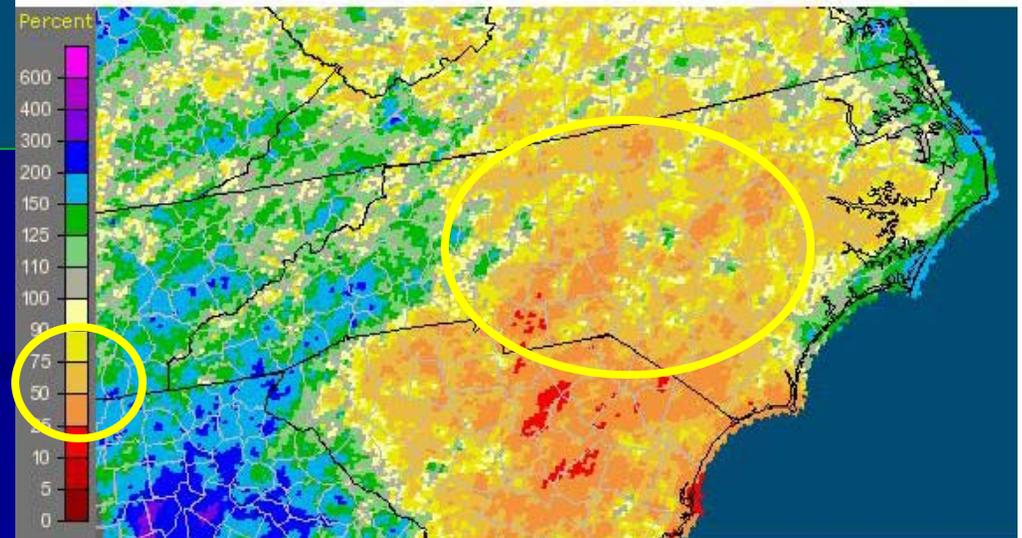
- Blacksburg
- Columbia
- Greenville/Spartanburg
- Morehead City
- Morristown
- Raleigh/Durham

# Past week's rainfall, monthly/seasonal update

North Carolina: Current 7-Day Observed Precipitation  
Valid at 10/3/2009 1200 UTC- Created 10/3/09 23:02 UTC



North Carolina: Current 60-Day Percent of Normal Precipitation  
Valid at 10/3/2009 1200 UTC- Created 10/3/09 23:25 UTC





# Long Range Outlooks

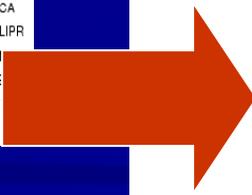
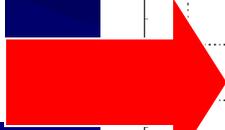
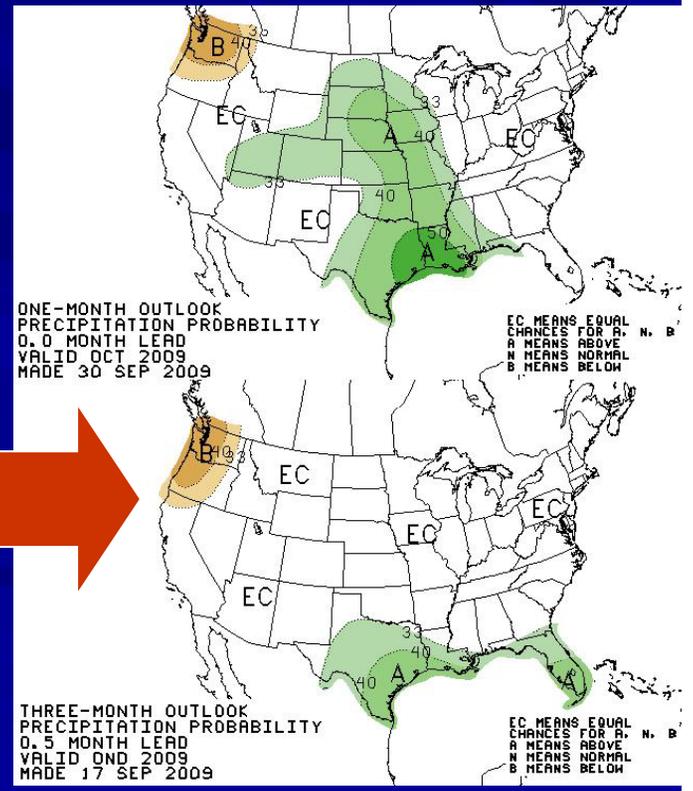
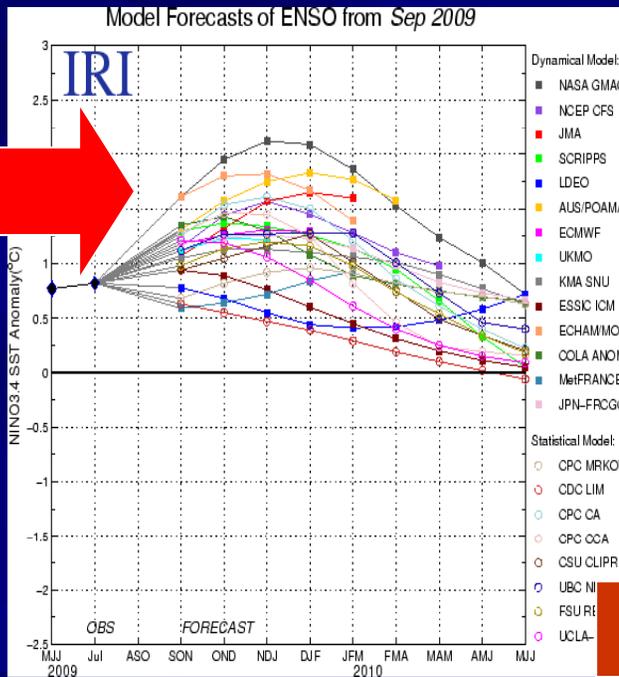
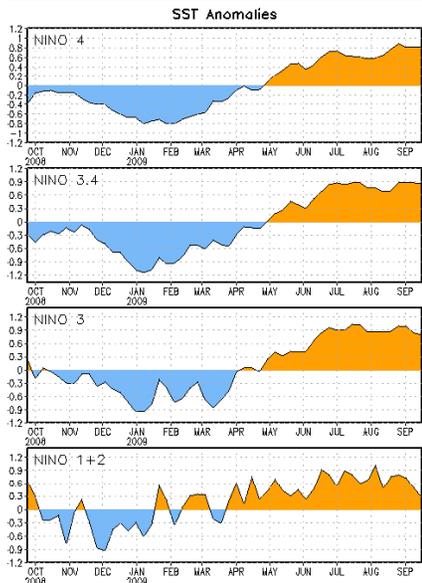




Photo courtesy of Scott Lamp

# State Climate Office of North Carolina



Data and Products

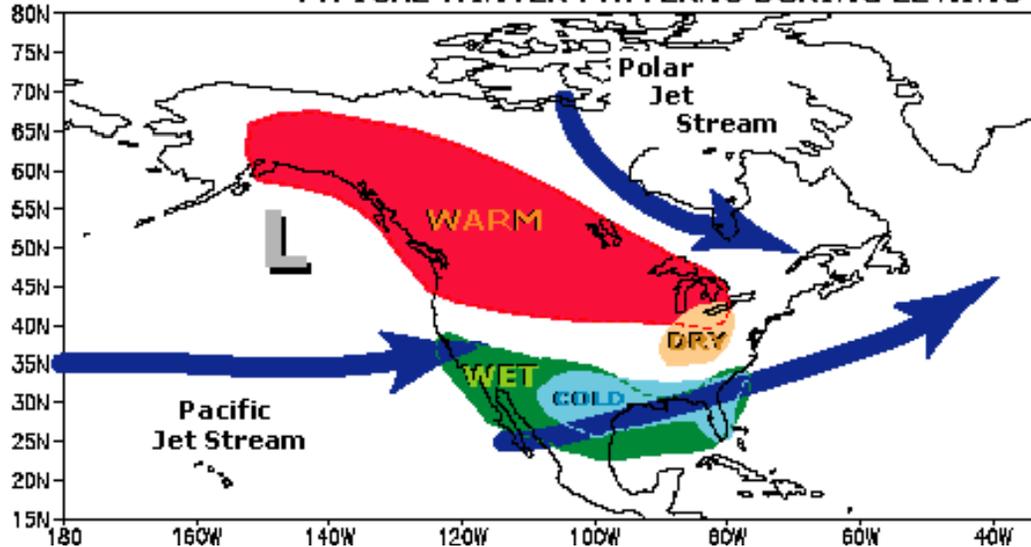
Aspects of NC Climate

Educational Outreach

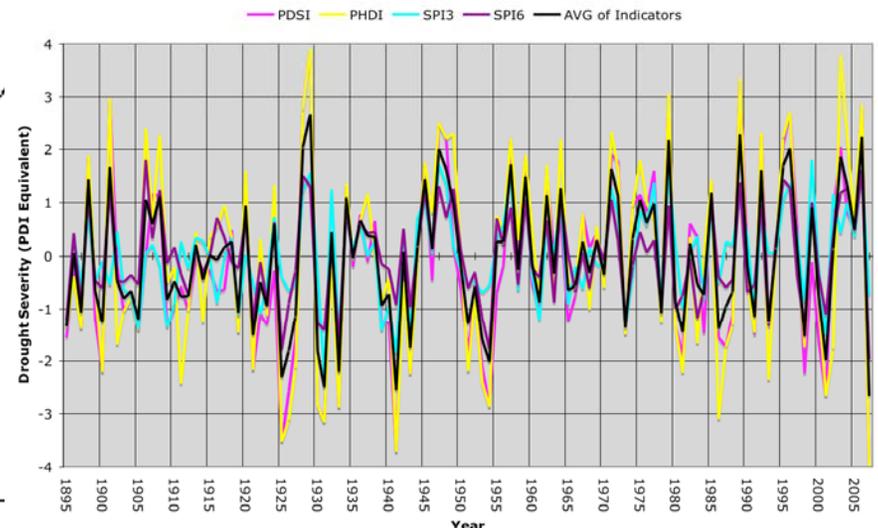
About Our Office

Contact Us

## TYPICAL WINTER PATTERNS DURING EL NIÑO



## NC Statewide Average Drought Indicators



*The NC State Climate Office responds to media requests and provides counsel to government agencies and the legislature*



*Alive with wonder!*

NORTH CAROLINA  
MUSEUM of NATURAL SCIENCES

*Downtown Raleigh*

Exhibit: Drought Modeling

Partner: DENR/NCDMAC

Location: Exploratory Gallery - Modeling

Exhibit Purpose:

Showcase DENR's drought monitoring project, particularly the efforts illustrated on their web site [www.ncdrought.org](http://www.ncdrought.org).

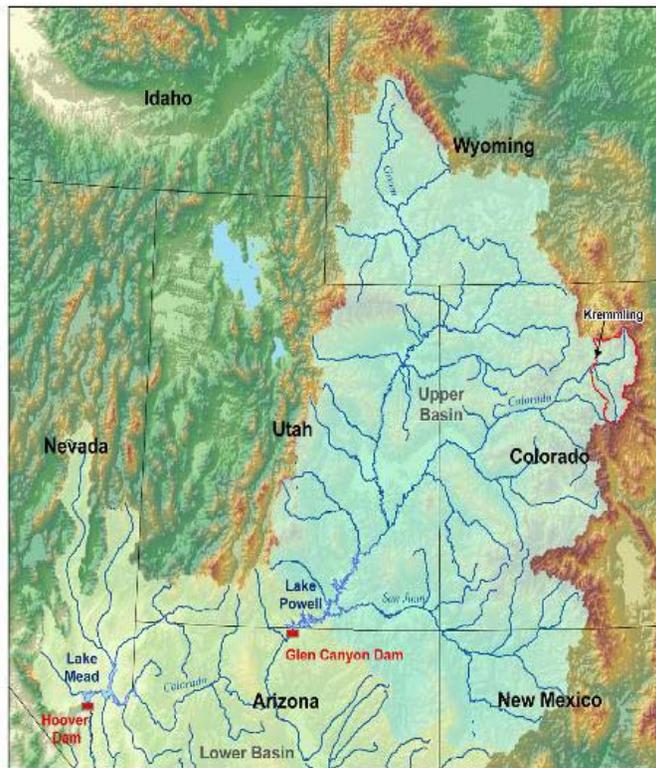
Increase awareness among the general public about how drought issues are identified, monitored and managed in NC.

Increase public understanding of how to gain access to and understand the data available to them on the web site.

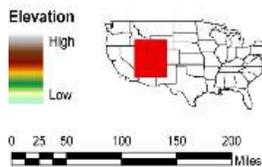
Use this project as an example of how scientific data are used to make policy decisions.

Increase awareness of proactive measures that the public can take to manage the impact of drought on their daily lives.

# NIDIS Southeast Testbed Catawba-Wataeree River Basin



- States
- Dams
- Streams
- Reservoirs
- Upper Basin
- Lower Basin



# *The North Carolina Drought Management Advisory Council Summary*

- Weekly Interagency GoToMeetings each Tuesday afternoon.
- Generally ~30 minutes with detailed reports to delineate drought conditions.
- Recommendations are sent to the US Drought Monitor author.

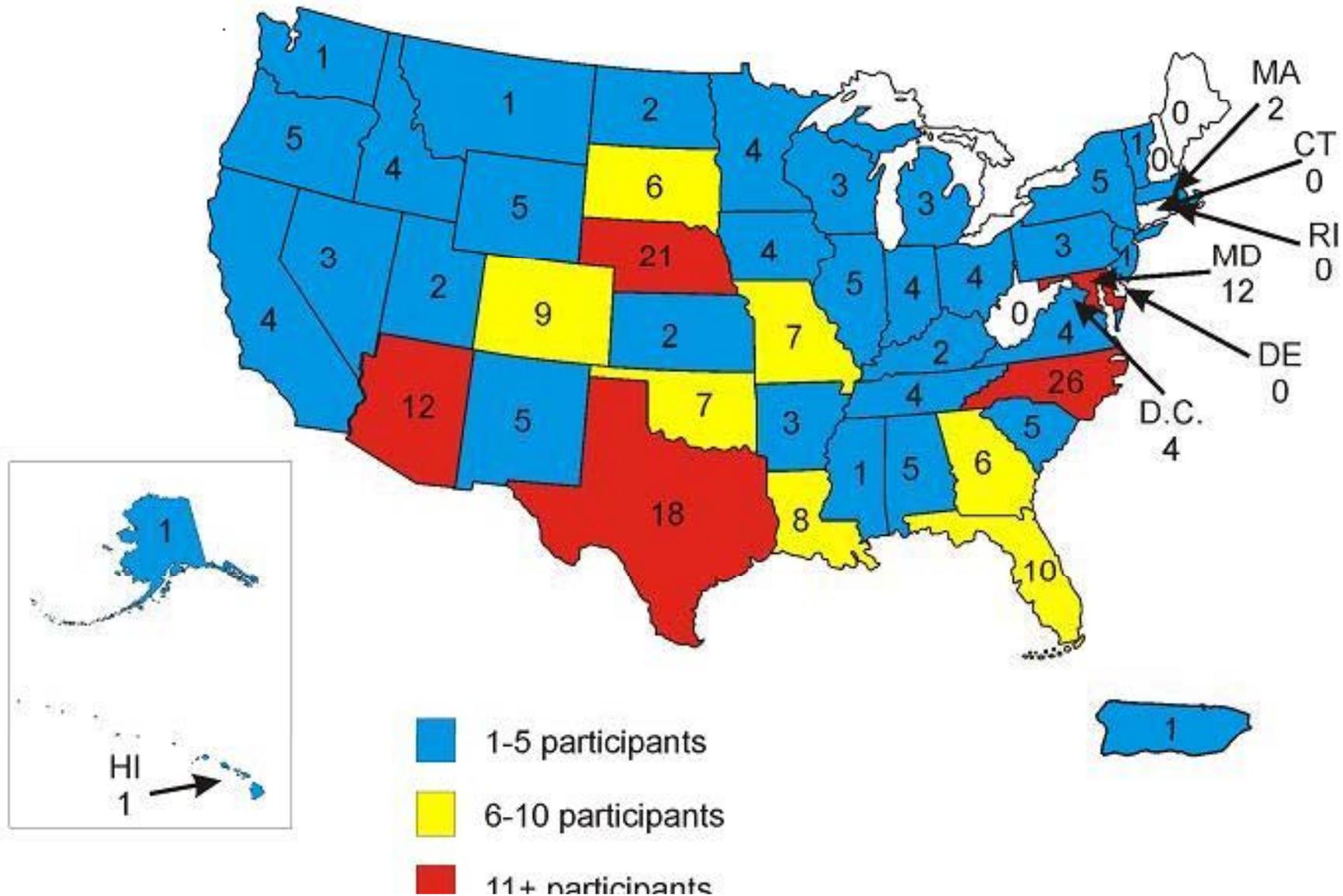
# *The North Carolina Drought Management Advisory Council Summary*

## *Benefits and Advantages*

- Virtually all impacted agencies have input and are privy to the reasoning behind the final product. This ensures that conflicting information is not distributed (i.e. news media).
- Reduces the number of contacts and minimizes conflicts that USDM authors must consider.

# ~270 Contributors, ~10% from NC

## USDM Listserve Participants



# *The North Carolina Drought Management Advisory Council Summary*

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- Reduces the number of contacts and minimizes conflicts that USDM authors must consider.
- Coordination promotes healthy partnerships by encouraging collaboration in mission activities other than drought. This can range from scientific studies to responding to a teacher's request for a speaker on a specific topic.

# *The North Carolina Drought Management Advisory Council Summary*

*Considering these benefits,*

*Is this model something that other states that  
are not as proactive might consider?*