



Water Supply / Water Resources Update 2011

Environmental Review Commission

September 28, 2011

Division of Water Resources

- Water Resource Management Section
 - Strategic statewide water resource planning
 - Interbasin transfers / Drought management
- Public Water Supply Section
 - Ensures safe drinking water for citizens & visitors of NC
 - Technical assistance & oversight to 6300 public water systems
- Water Projects – State sponsor for:
 - Dredging / beach nourishment projects
 - Statewide local grant program for water-related projects

Overview

- Hydrologic Model Status
- Ecological Flows Science Advisory Board
- Implementation of HB 609 (SL 2011-374)
- Pending Interbasin Transfers (IBTs)
- Update on CCPCUA
- Drought Response
- Incorporation of Public Water Supply into DWR

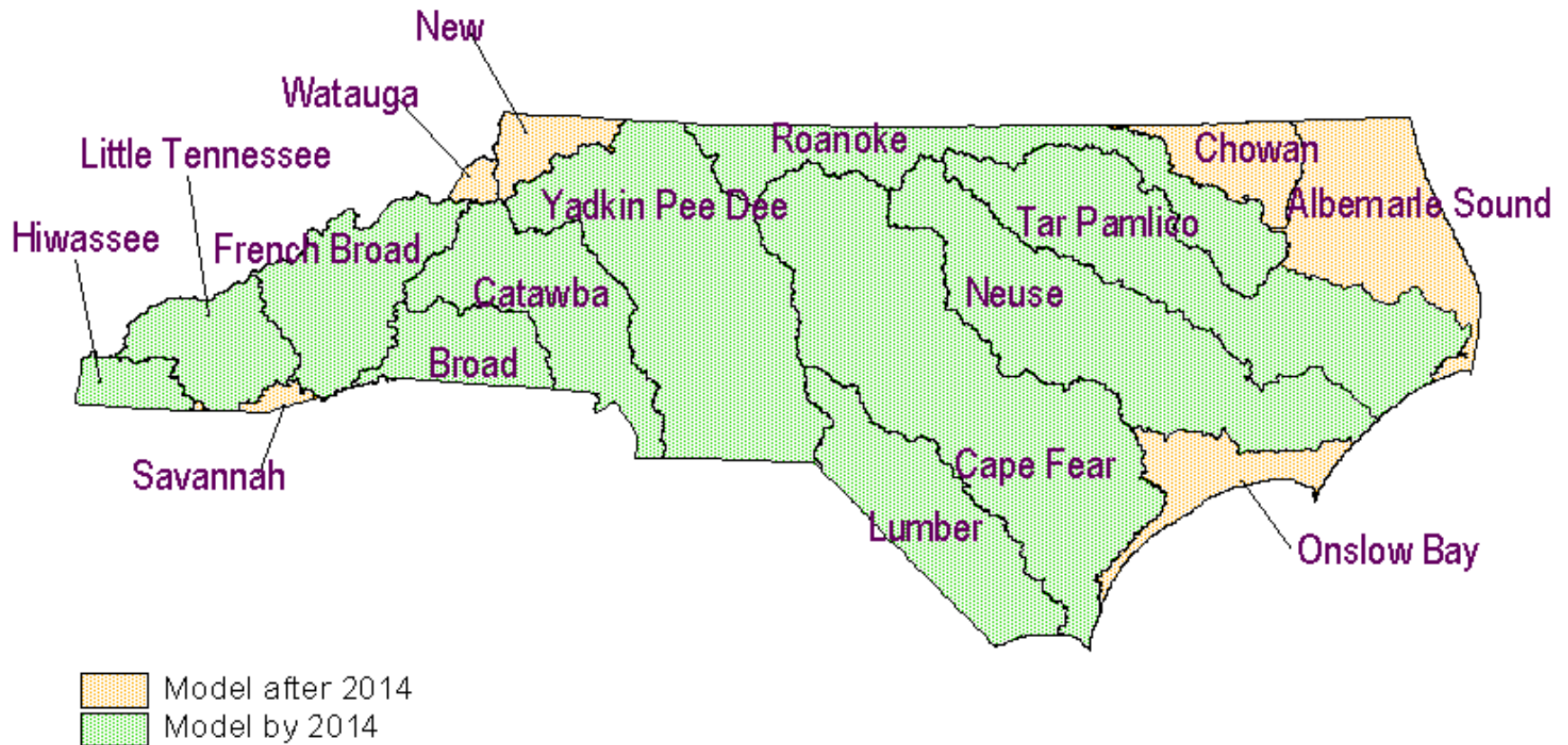
Hydrologic Model Status

- SL 2010-143 mandates the development of hydrologic water models for all 17 river basins
- Cape Fear & Neuse already completed
- Tar-Pam and Broad to be completed in 2011
- Roanoke, Hiwassee, and Little Tennessee scheduled for commencement in 2012
- No additional funding needed to complete all models
- Most robust hydrologic modeling program in SE
- Comprehensive stakeholder process during model development, including training for local govts.

Hydrologic Model Schedule

Year Completed	River Basin Model
2011	Tar-Pamlico & Broad
2012	Roanoke, Update for Cape Fear & Neuse
2013	Hiwassee & Little Tennessee
2014	French Broad & Lumber
2015	New & Watauga
2016	Catawba & Savannah
2018	Albemarle Sound, Chowan, & Onslow Bay
2019	Yadkin-Pee Dee

2014 Model Completion



Ecological Flows Science Advisory Board (SAB)

- Establishment mandated under SL 2010-143
- Tasked to develop methodology to determine eco-flows for inclusion in hydrologic models for planning purposes
- Ecological flow: Water to maintain ecological integrity
- Highly complex issue
- SAB composed of reps from wide range of stakeholders
- Now meeting monthly / Has met seven times to date
- Good progress being made / Meetings on internet
- Potential completion date: Late 2012 - 2013 (more likely)
- SAB is science body – not policy making

Implementation of SL 2011-374 (HB 609)

- Development of Future Water Supplies
- Improve Water Efficiency

Development of Water Supplies

- Dept. tasked to assist local govts in the analysis and assessment of options to meet future water needs
- Fact sheet developed
 - Sent to local govts via NCLM & NCACC
- Temporary staff hired to implement requirements
- Process & operating procedures being developed
- Local government interest:
 - Raleigh, Cleveland County, New Hanover County

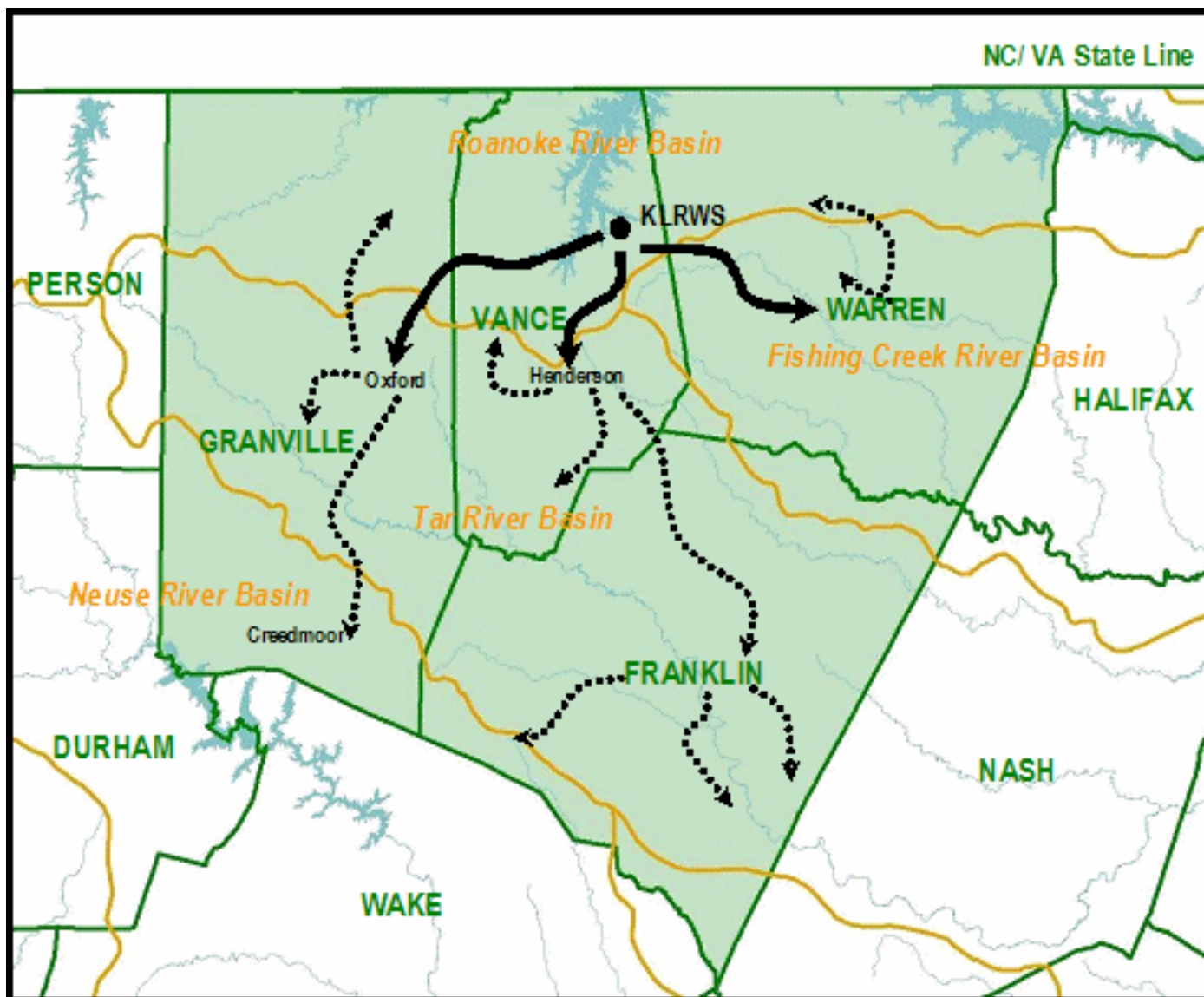
Improve Water Efficiency

- Dept. developing water efficiency BMP manual
- Will be composed of local govt. success stories
- Local govts. surveyed about water efficiency measures
 - Response has been very positive
- Statewide outreach and technical assistance:
 - Webinars via the internet
 - Statewide assistance meetings

Pending Interbasin Transfers

- Kerr Lake Regional Water System
- Request to transfer approx. 26 million gallons/day out of Roanoke River Basin (Kerr Lake)
- EIS out for public review & comment in 2012
- Potential for uranium mining in VA portion of Roanoke River Basin

Proposed Kerr Lake Regional Water System IBT



Central Coastal Plain Capacity Use Area (CCPCUA)



- 15 county region in the coastal plain
- Permitting of ground water withdrawals required above 100,000 gallons per day
- Registration of all withdrawals above 10,000 gallons per day (surface or ground water)
- Reductions in withdrawals required for certain aquifers

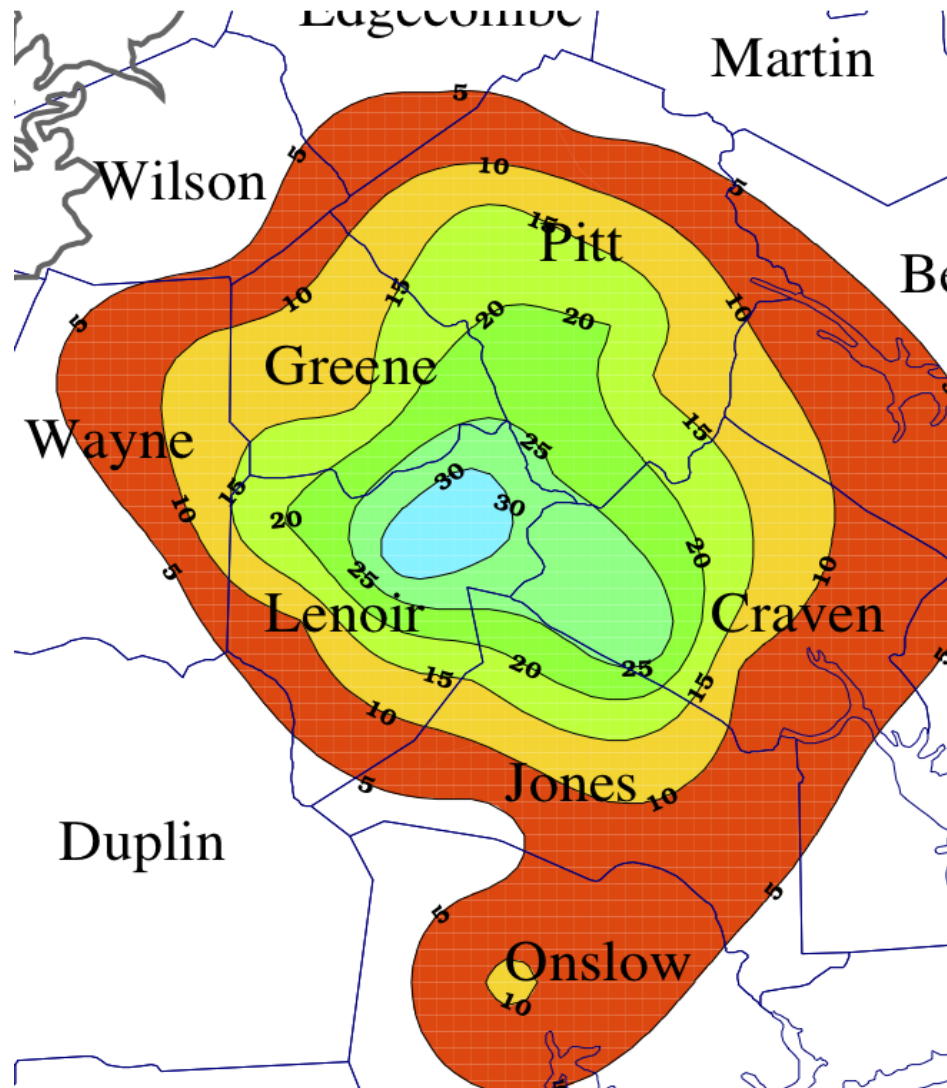
Aquifer Problems in the Central Coastal Plain

- Significant problems with yields from wells in late 1990's
- Black Creek aquifer exhibited evidence of “dewatering”
- Salt water encroachment on major pumping centers
- Alarming drop in Black Creek/Upper Cape Fear Aquifers
- Water withdrawn at a rate that exceeded recharge
- Potential irreparable damage to aquifers
- CCPCUA Rules effective on August 1, 2002

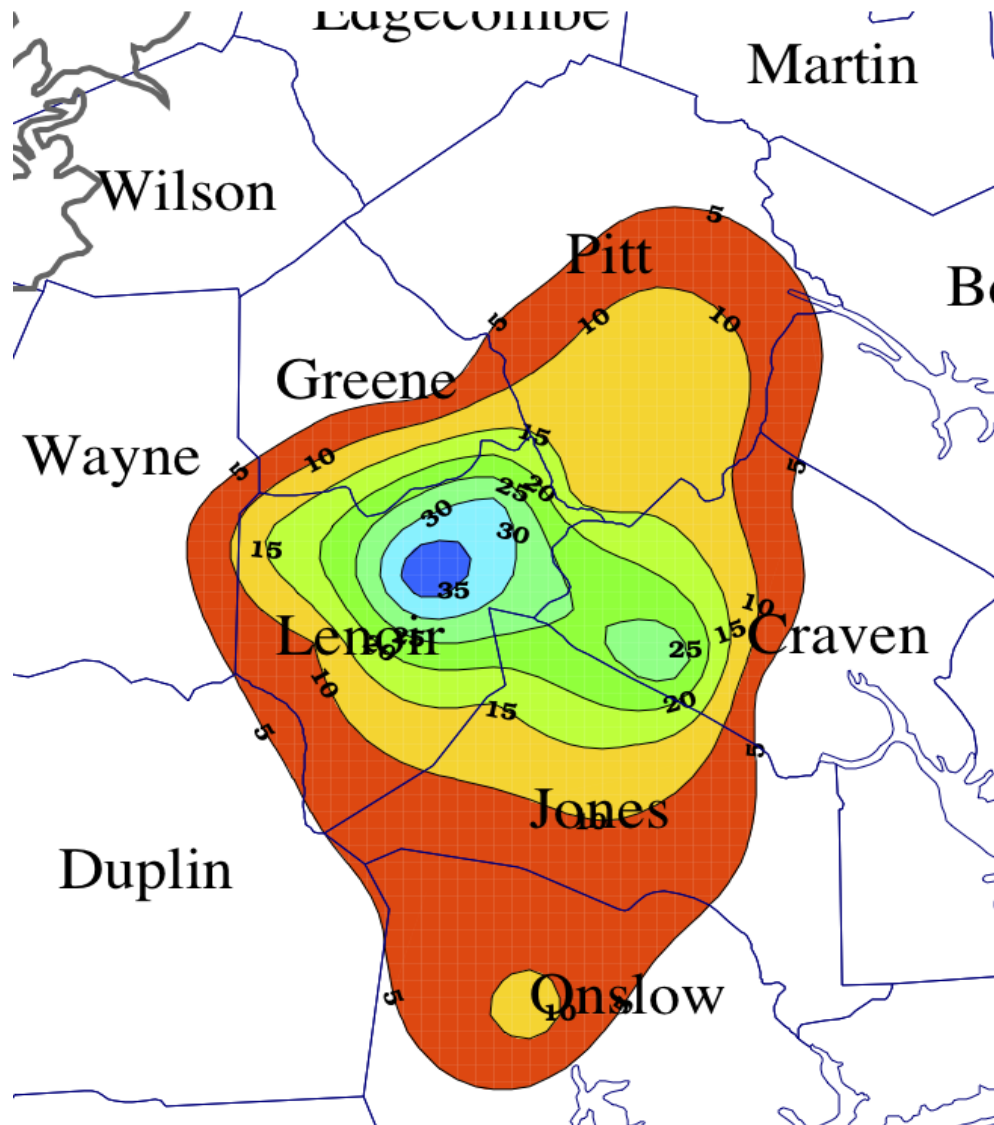
CCPCUA Update

- Aquifers continue to recover
- Some conflict over Castle Hayne aquifer between Jacksonville - Camp Lejeune
 - Camp Lejeune dependent upon Castle Hayne aquifer
 - Increased Jax use of Castle Hayne possibly affected Camp Lejeune's well field
 - Initiated steps to limit Jax impact on Castle Hayne
 - Continue monitoring of the situation

Upper Cape Fear Aquifer Recovery



Black Creek Aquifer Recovery



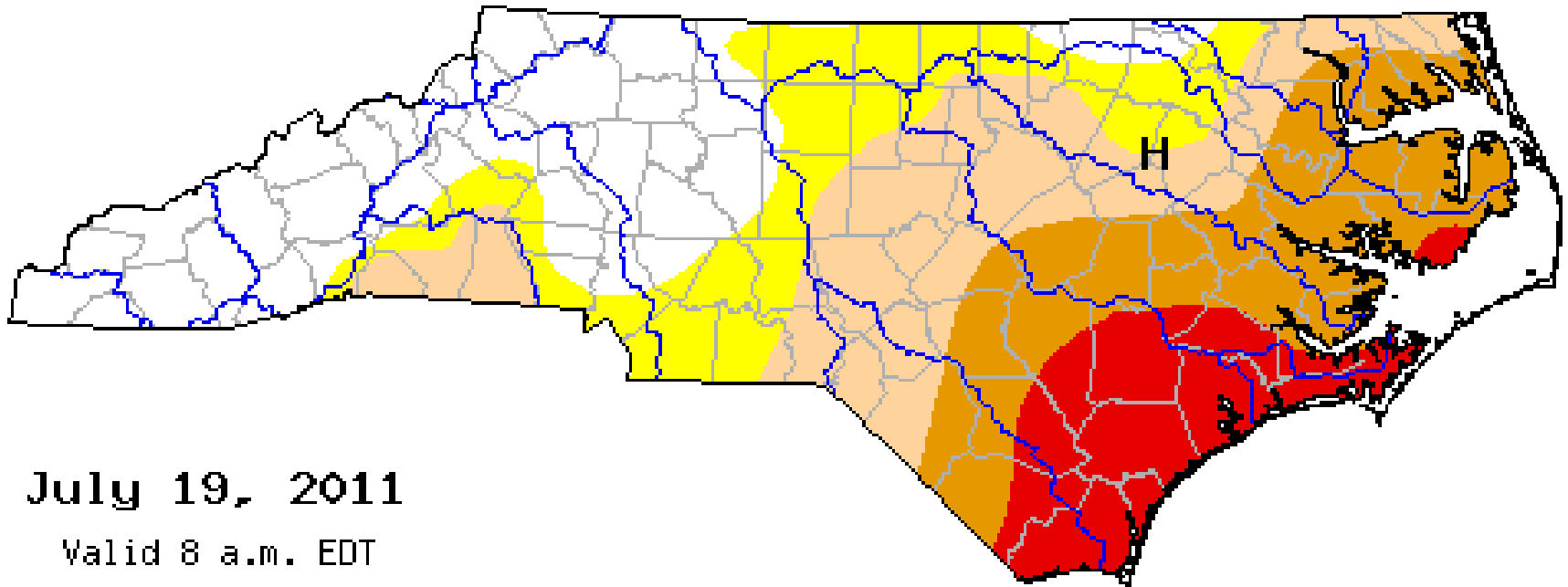
Greenville Aquifer Storage & Recovery System (ASR)

- Greenville testing system to store treated surface water in aquifer for retrieval and use at a later date
- Injection testing commenced in 2011
- By June, 76 million gallons had been injected in aquifer
- 7 million gallons were successfully withdrawn
- Testing expected to continue for several more months

Drought Response

- Water Shortage Response Plans (WSRP)
 - Mandated in SL 2008-143
 - 533 of 551 completed and approved by Dept.
 - Remaining 18 pending local govt. approval
 - 321 of the 551 drafted, developed, and composed by DWR Staff for local governments






2011 Drought



July 19, 2011

Valid 8 a.m. EDT

Drought Classifications

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

Incorporation of Public Water Supply into Div. of Water Resources

- On July 1 Public Water Supply moved from Div. of Env. Health to Div. of Water Resources
- Potential for future efficiencies & economies of scale
- Removal of duplicative reporting
- Assistance from PWS Regional Office Staff to regulated community:
 - Developed and posted approximately 1600 notices in lieu of taking enforcement action
 - Use of digital camera to troubleshoot well problems for non-profit organizations

Summary

- Hydrologic Model Status
 - Most of NC completed by 2014/no new funding required
- Ecological Flows Science Advisory Board
 - Meeting monthly/progress underway
- Implementation of HB 609 (SL 2011-374)
 - Fact sheet/preparation of operating & contract procedures
- Pending Interbasin Transfers (IBTs)
- Update on CCPCUA
 - Aquifers continue to recover/Camp Lejeune-Jax issue
- Drought Response
- Incorporation of Public Water Supply into DWR

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