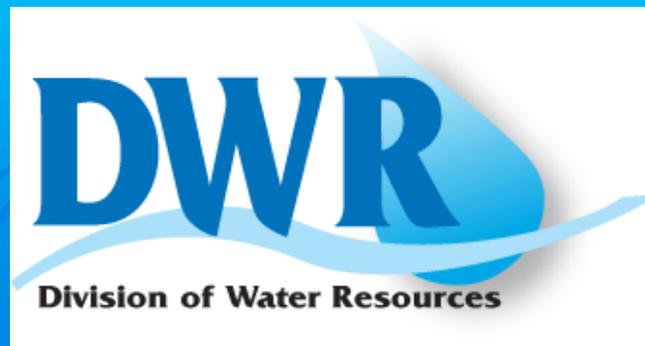


# Roanoke River Basin Association Board Meeting

## Water Supply Planning

Tom Fransen

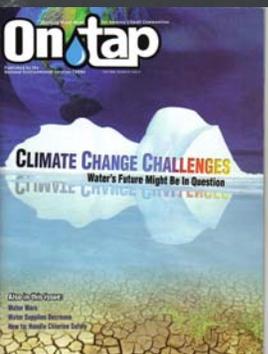
North Carolina Division of Water Resources



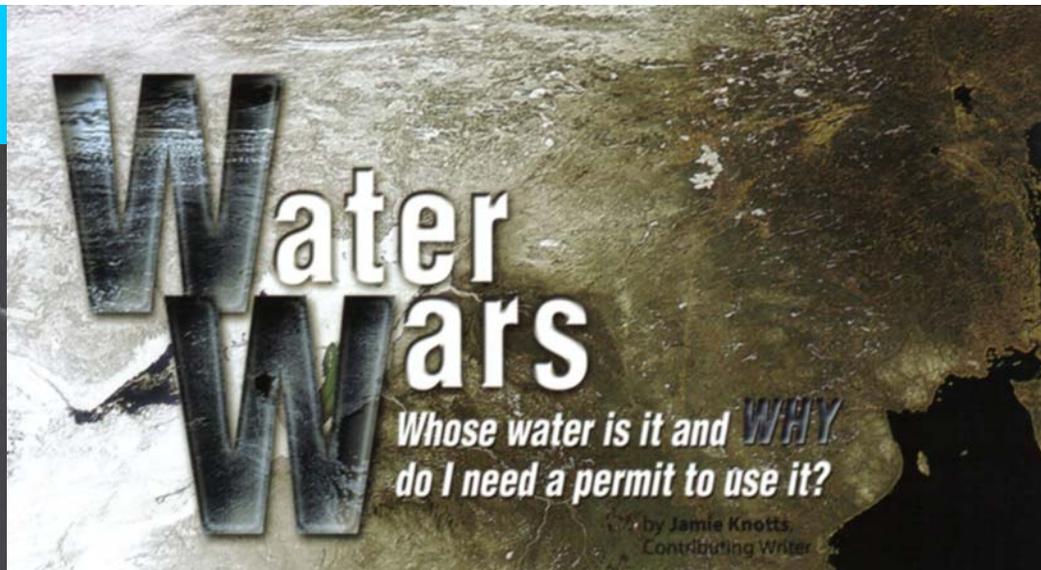


*The water wars of the West have moved east. The explosive growth of Atlanta is draining nearby rivers in the Southeast, threatening ecosystems and livelihoods in a region unused to resource shortages.*

Marcello Ballve,  
Pacific News Service



9/12/2009



**Troubled Waters: The Illusion of Abundance  
UNC-TV**

**A New Frontier in Water Wars Emerges in East  
NY Times, 3/3/2003**

**Water Wars: A future problem for Western Wake?  
Wake Up Forum, 1/6/2007**

**S.C. Ready for Water War With N.C.: State Will File Lawsuit If  
N.C. Cities Win Permission This Week to Draw Water From  
Catawba**

**Columbia, SC 1/8/2007**

**'Water war' moved to Florida court  
Atlanta Business Chronicle - 3/21/2007**

**Bills would tighten requirements for water transfers  
Legislation, along with appeals, at forefront in Catawba River  
fight The war for Catawba River water will be fought on two  
fronts, by lawmakers and attorneys**

**HICKORY 3/27/2007**

# We expect a lot from our river basins.

- Aquatic Habitat
- Riparian Habitat
- Pollution Dilution
- Water Supply
- Power Generation
- Recreation

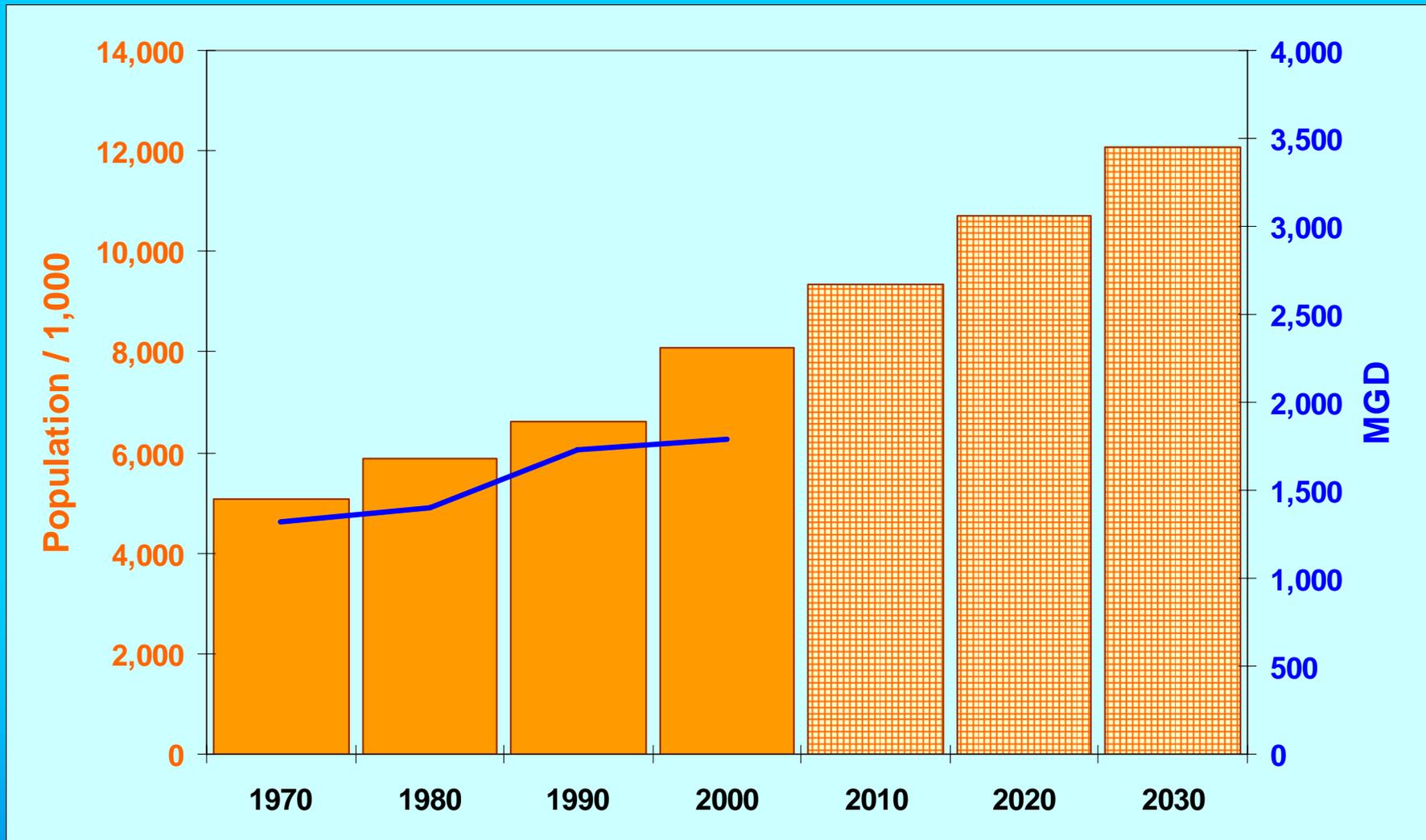


# Critical Questions

**How much water is available in the river system?**

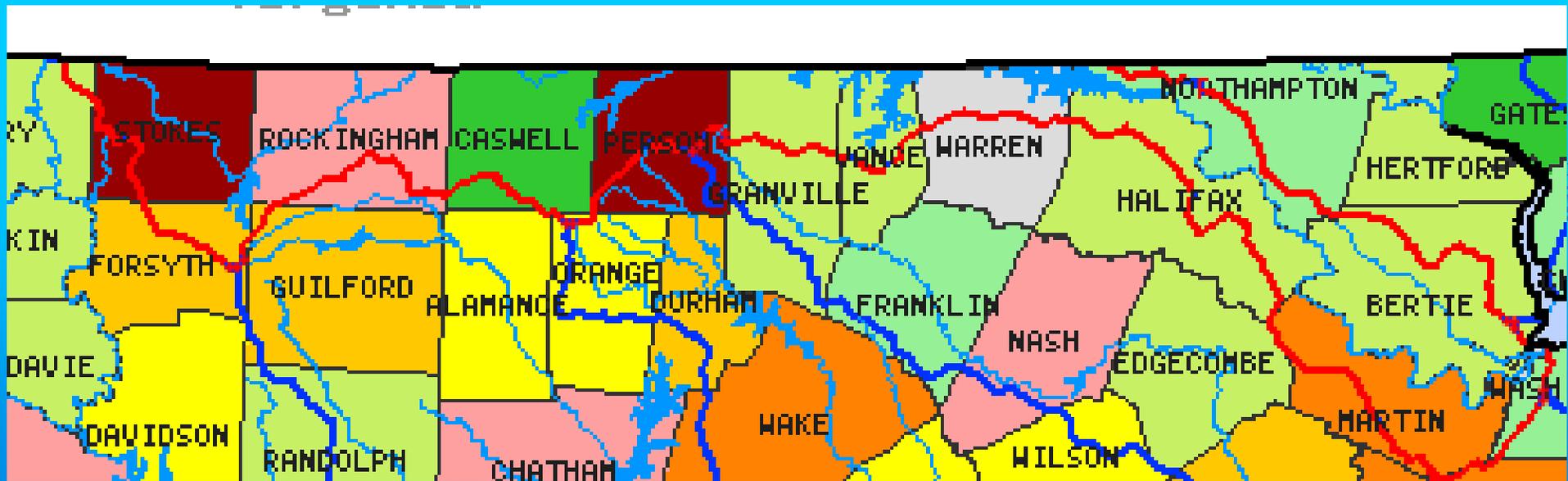
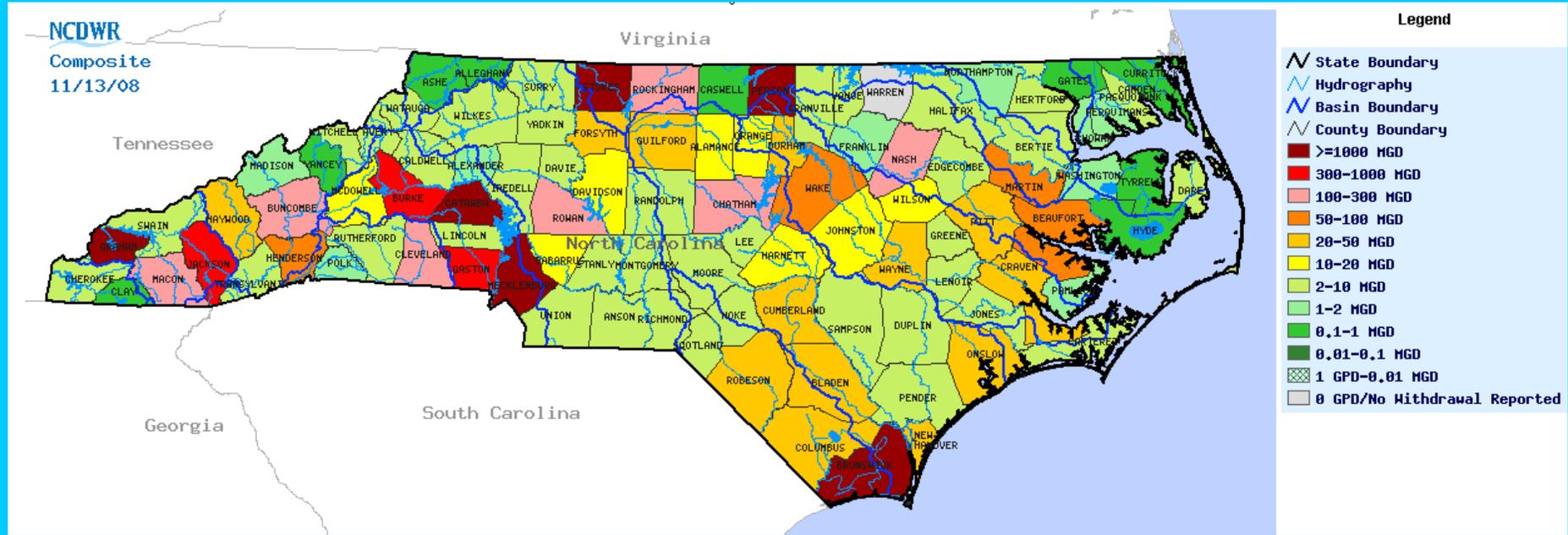
**How much, where and when is water needed for the various services we expect the river to provide?**

# Will we have enough water to meet the needs of a growing population?



NC water use excluding power generation

# Roanoke Basin Water Withdrawals



# Summer of 2002

## Towns desperate for water



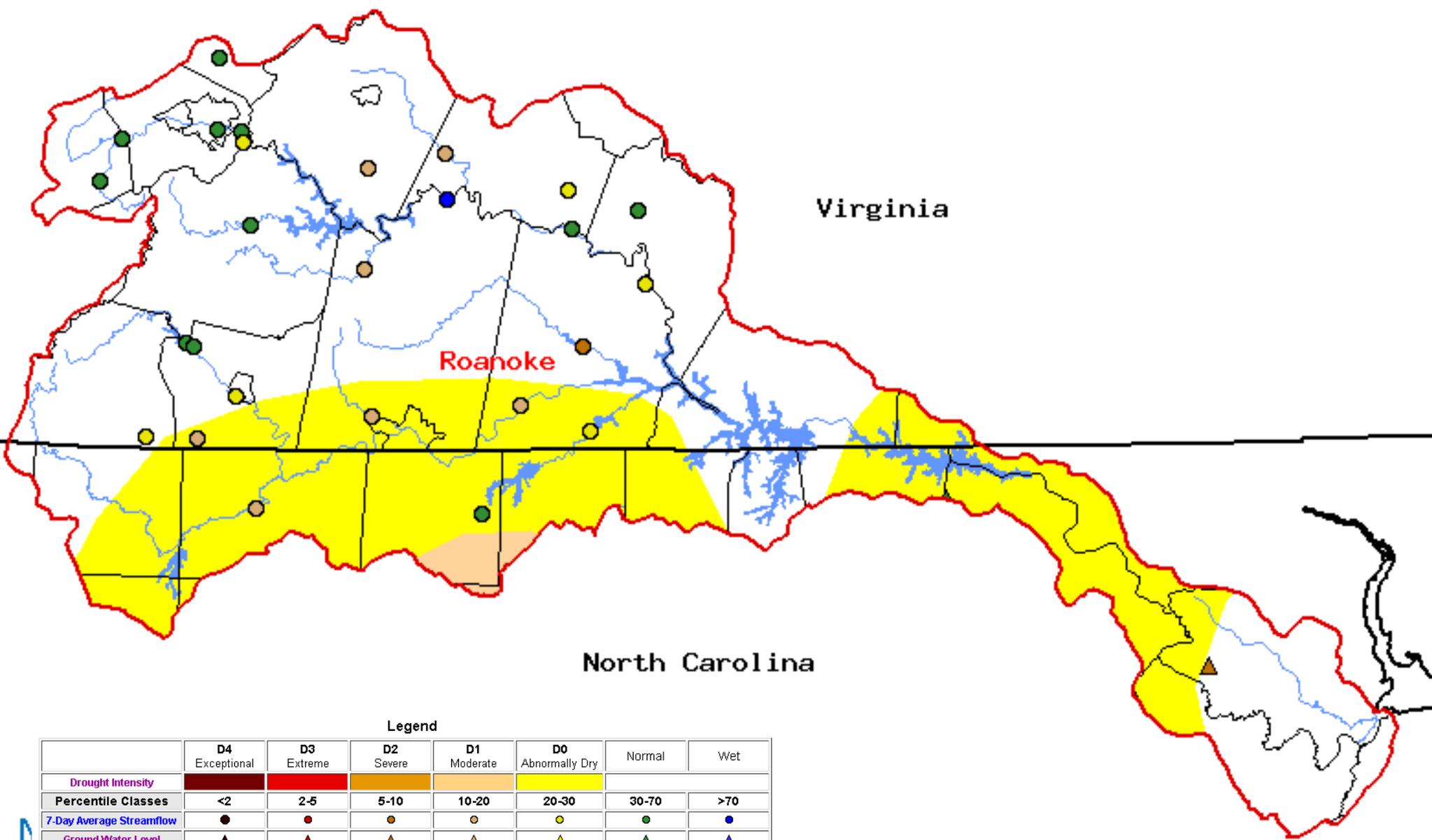
Above, Clint Beam, a Shelby firefighter, monitors a jury-rigged system that draws water from the city of Kings Mountain through the Cleveland County water system to Shelby. Using the fire truck as a pumping station, 870 gallons per minute are processed.

STAFF PHOTOS BY MEL NATHANSON

Worst-hit Piedmont communities begin pumping or trucking in water and further tightening restrictions



# Current Drought Status



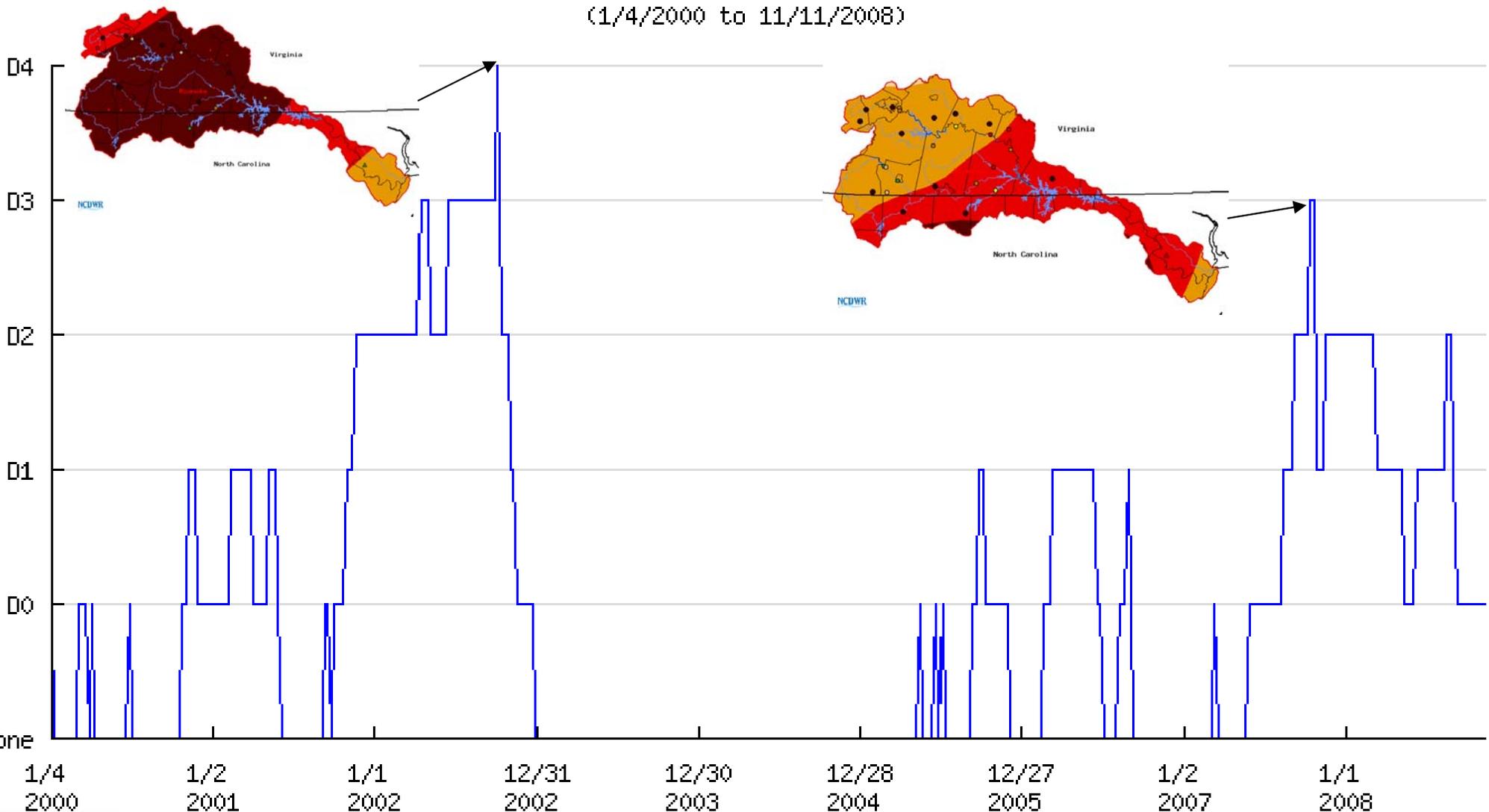
Legend

	D4 Exceptional	D3 Extreme	D2 Severe	D1 Moderate	D0 Abnormally Dry	Normal	Wet
<b>Drought Intensity</b>							
<b>Percentile Classes</b>	<2	2-5	5-10	10-20	20-30	30-70	>70
<b>7-Day Average Streamflow</b>							
<b>Ground Water Level</b>							
<b>Water Conservation Status</b>	Emergency	Mandatory	Voluntary	No Drought Related Restrictions			

# Drought History

## Drought Monitor History for Roanoke River Basin

(1/4/2000 to 11/11/2008)



# What North Carolina Needs to Do to Provide Water Supplies for Future Needs.

## ➤ Focus 3 Major Areas

- *Data for Water Management*
- **Water Supply Planning**
- **Regulation**



# What North Carolina Needs to Do to Provide Water Supplies for Future Needs.

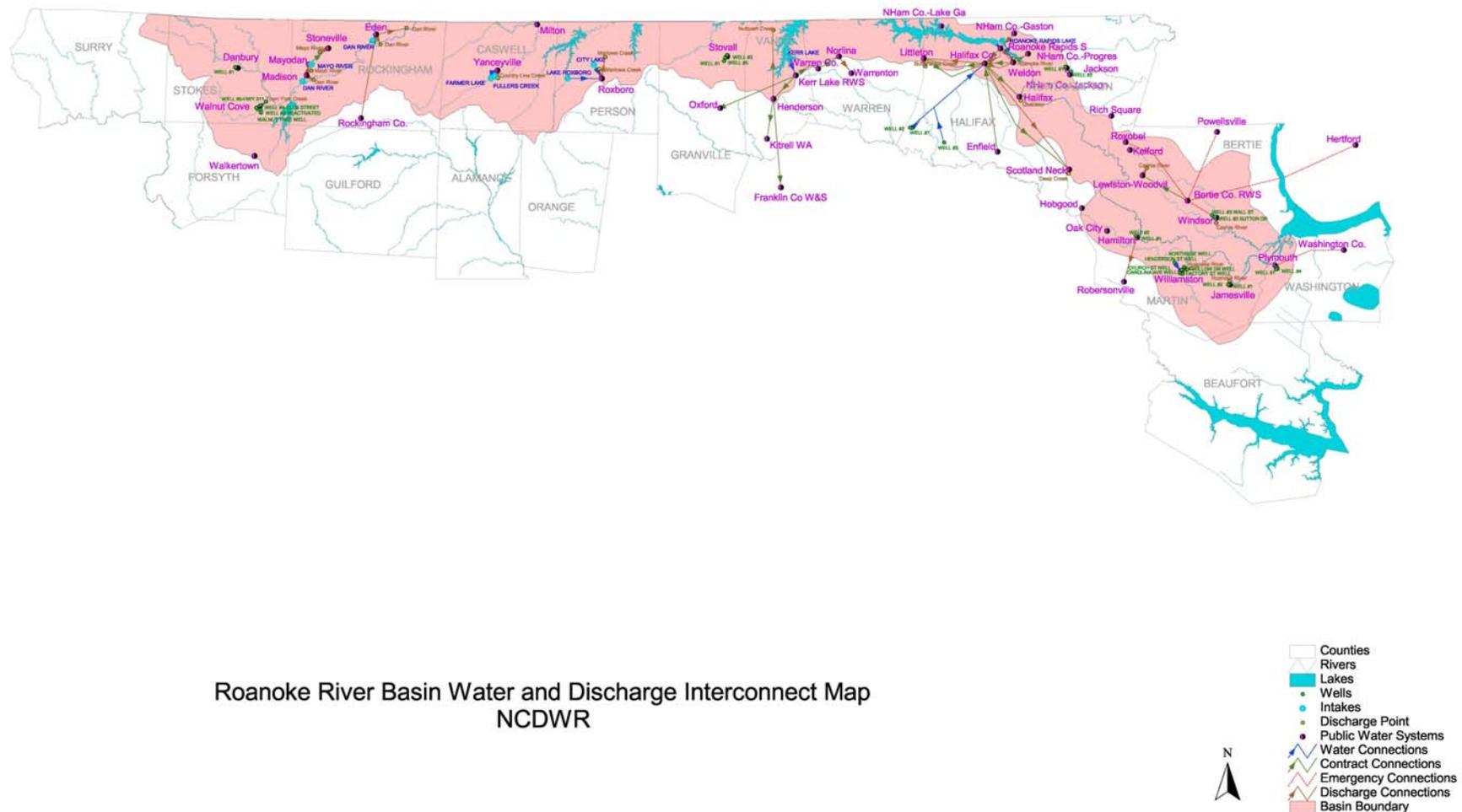
## ➤ Focus 3 Major Areas

- Data for Water Management
- *Water Supply Planning*
- Regulation

# Local Water Supply Plans

- **Local Water Supply Plans**
  - Updated every 5 Years
- Includes units of local government
- Includes some federal water systems
- Self-reported data

# Local Water Supply Plans



# River Basin Water Supply Planning is a tool to:

- Support long range, sustainable management of North Carolina's river basins
- Provide a reliable, quantitative method to plan for sustainable water use
- Provide an objective basis for management and regulatory decisions

# One of DENR's Strategic Objectives for MANAGING RIVER BASINS FOR MULTIPLE BENEFITS

***In each of the state's 17 major river basins, use river basin planning and management as the framework for protection of water quality, development of safe and reliable drinking water supplies, and the conservation and enhancement of natural resources.***

## **One of the Objectives**

Develop 50-year river basin water supply plans in partnership with local governments and other water users, to guide the development of local and regional water supply projects to meet each basin's future water supply needs. Over time, transition local water supply plans onto the same schedule as the basinwide water quality plans for the river basin in which the water system is located.

# River Basin Modeling



**ROANOKE RIVER BASIN RESERVOIR OPERATIONS MODEL**

developed by  
**HydroLogics, Inc.**

for

**The Nature Conservancy, NC Chapter  
NC Dept. of Environment and Natural Resources  
Dominion Generation**

**CLICK TO CONTINUE**

An application of OASIS with OCL  
covered by U.S. Patent No. 6,002,863. © 2002

# What North Carolina Needs to Do to Provide Water Supplies for Future Needs.

## ➤ Focus 3 Major Areas

- Data for Water Management
- Water Supply Planning
- *Regulation*

# Water Allocation Regulations

- **Riparian Rights**
- **Water Use Act**
- **Interbasin Transfer**
- **FERC Licensed Hydroelectric Projects**

# NC Riparian Rights

- Riparian property owners have right to “reasonable use” of water.
- Can not adversely affect quantity or quality.
- Maintain instream flow at “reasonable” level.
- Impairment often a water quality issue.

# The Water Use Act of 1967

## G.S. 143-215.11 to .22

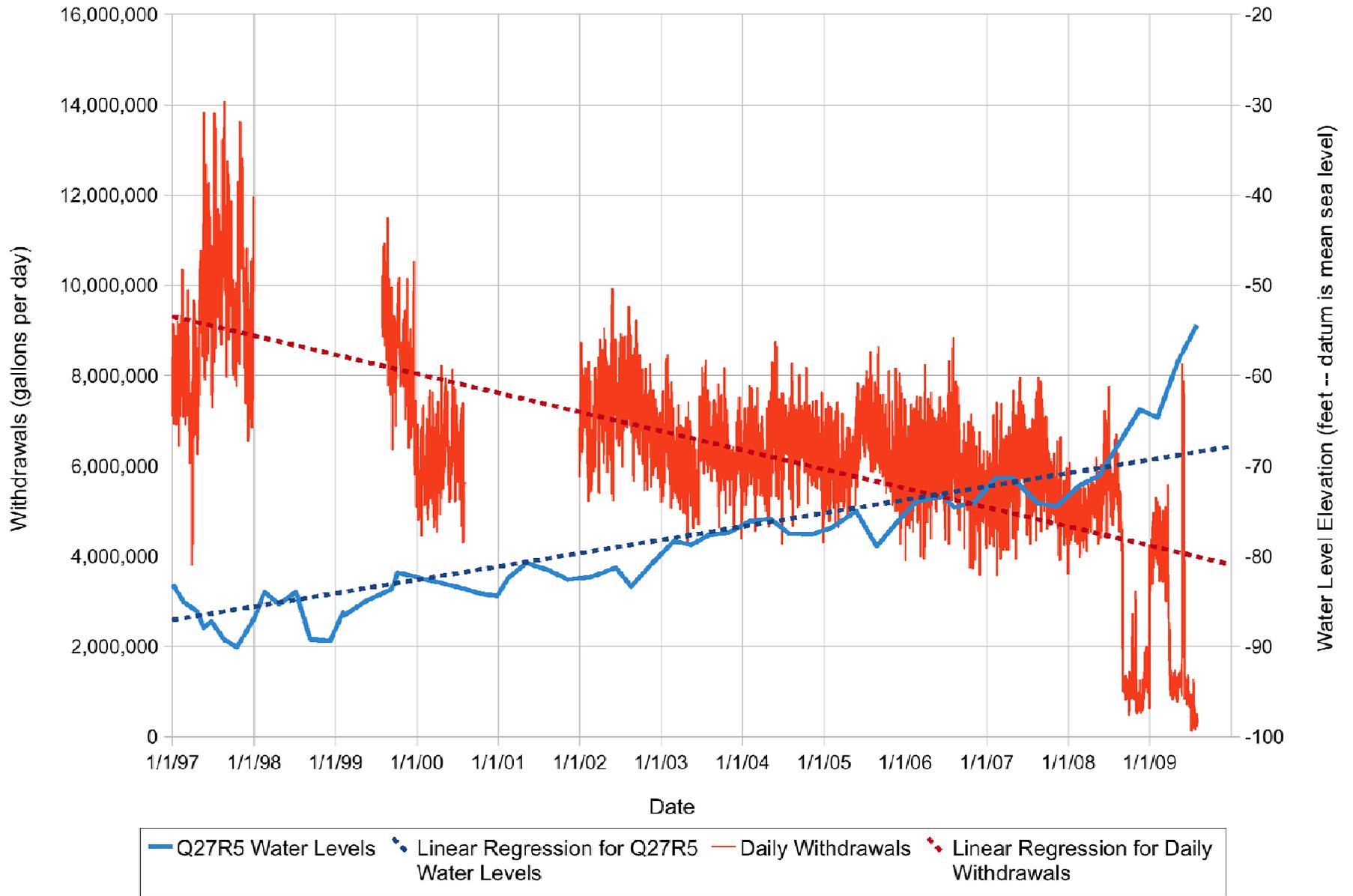
- Phosphate mining in Beaufort County led to creation of the Water Use Act
  - Reasonable regulation to conserve and maintain water resources so they can be used to the fullest extent possible
- Central Coastal Plain Capacity Use Area – The only CUA in the State.

# Central Coastal Plain Capacity Use Area



- **15 counties in the central portion of the Coastal Plain**
- **Currently 218 permit holders and 72 registrations**

### Water Levels at Q27R5 versus Water Withdrawals with 10 Miles



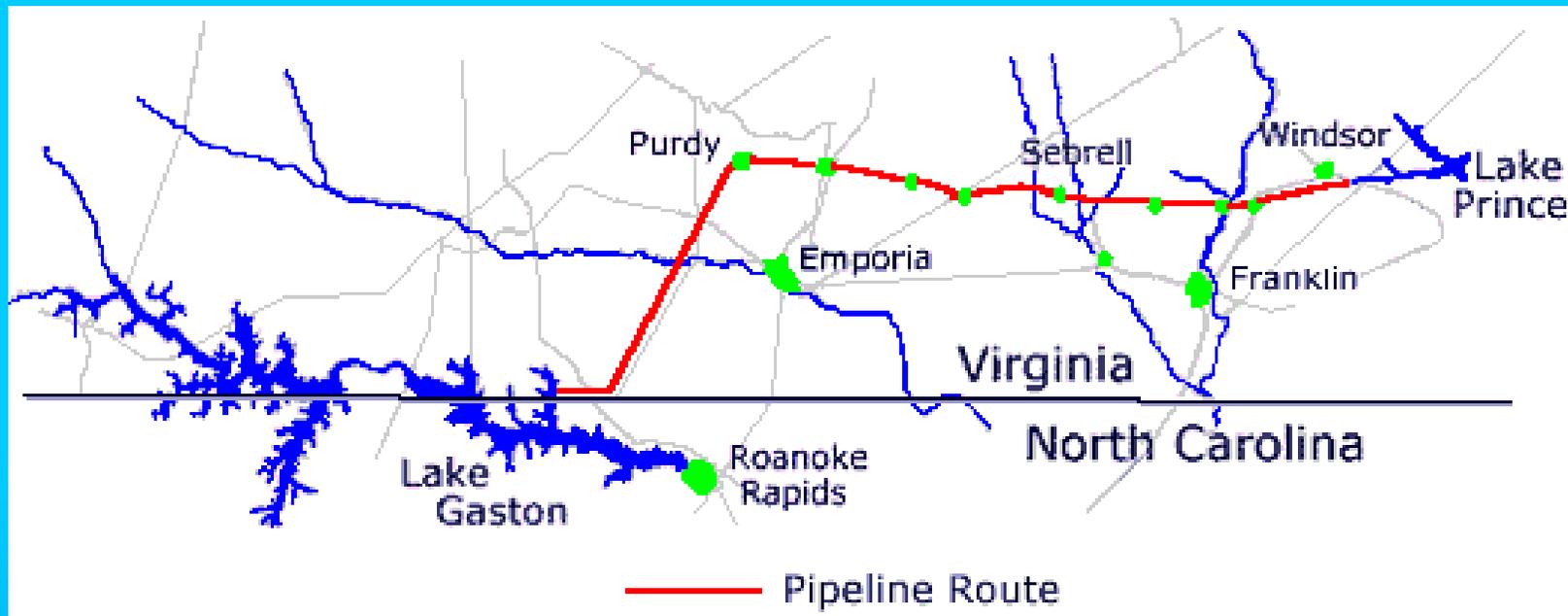
# What is an Interbasin Transfer?

An interbasin transfer is the movement of *surface water* from one river basin into another.

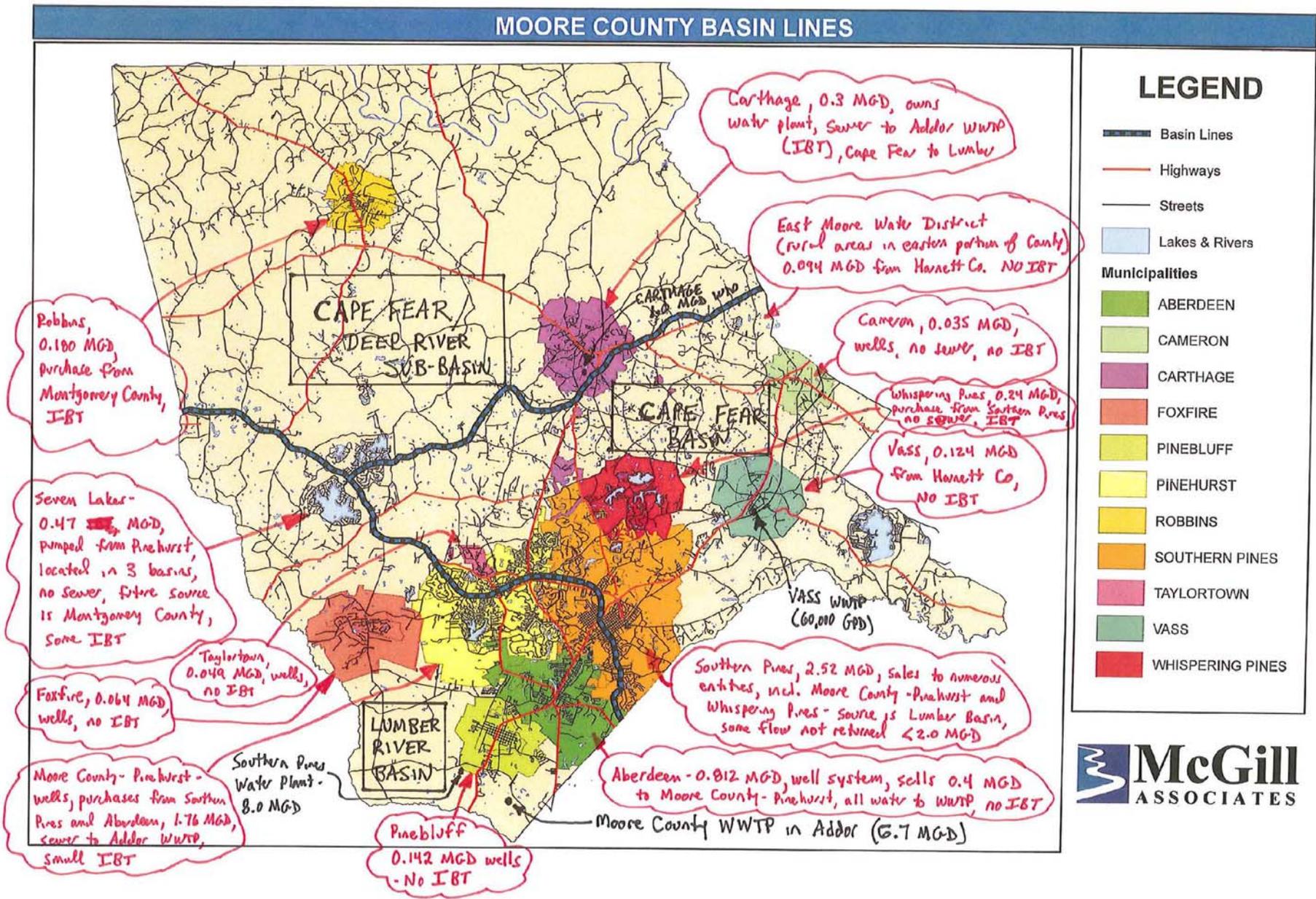
The purpose of the Interbasin Transfer Law is to take a pause to be sure it is good public policy before moving water from one river basin into another.

The Interbasin Transfer Law does **NOT** prohibit transfers.

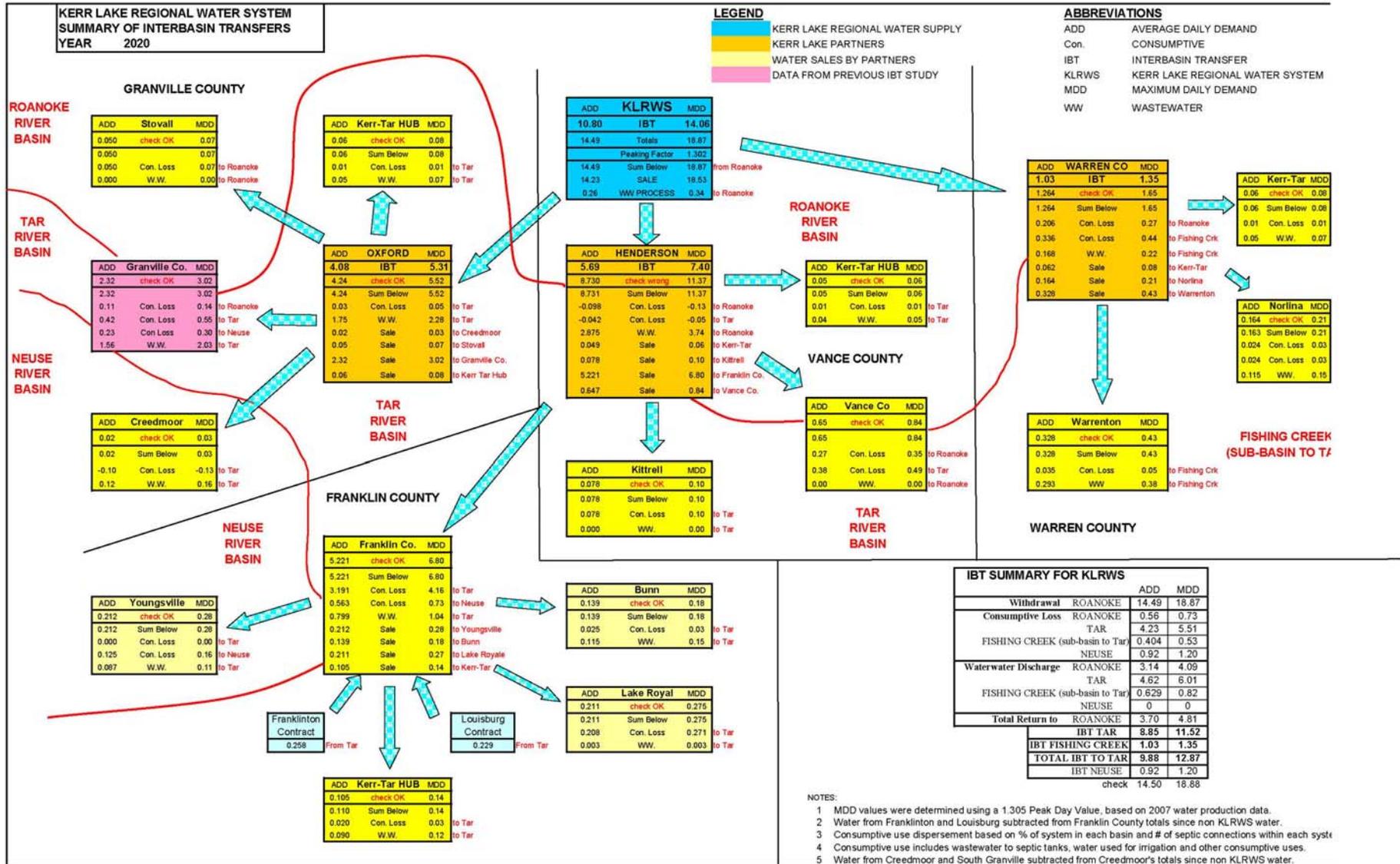
# The image most people have when they think about interbasin transfer.



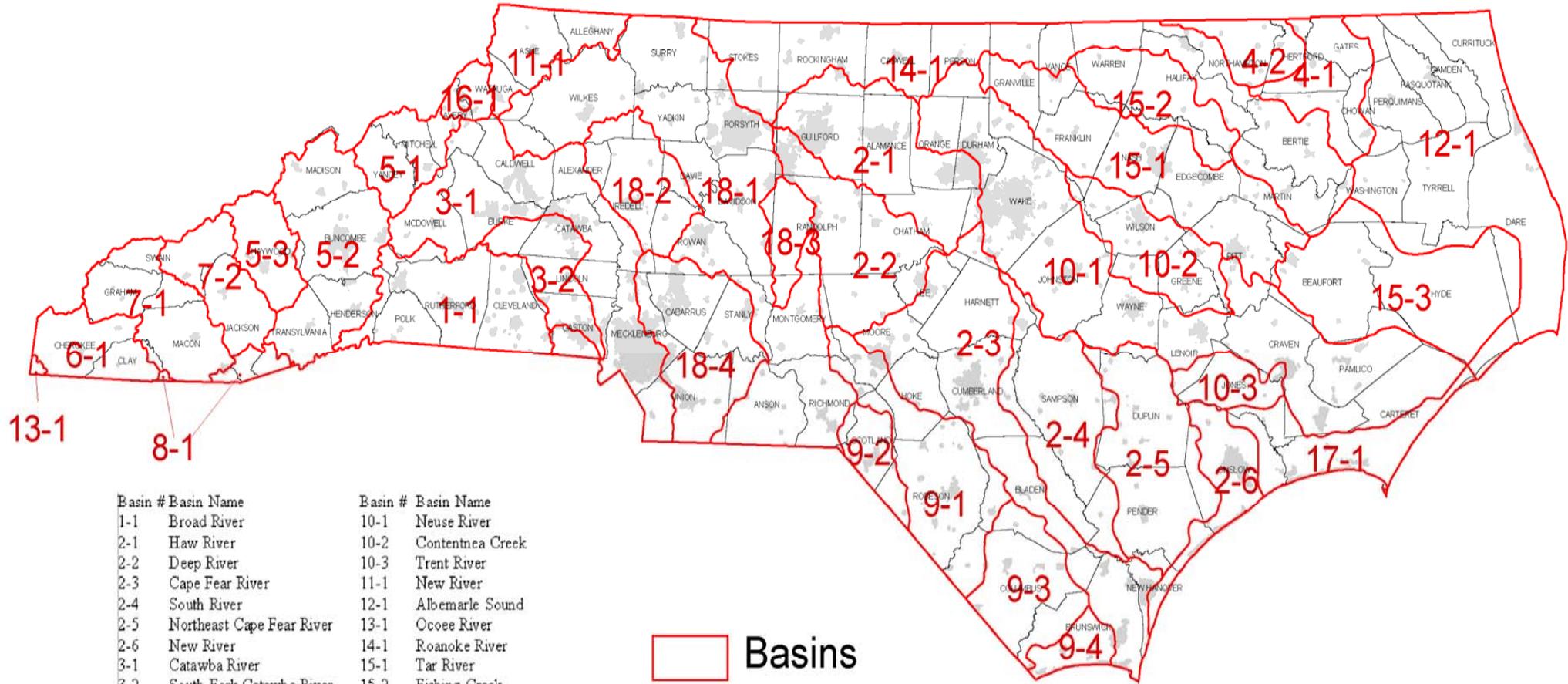
# The NC reality.



# The NC reality.



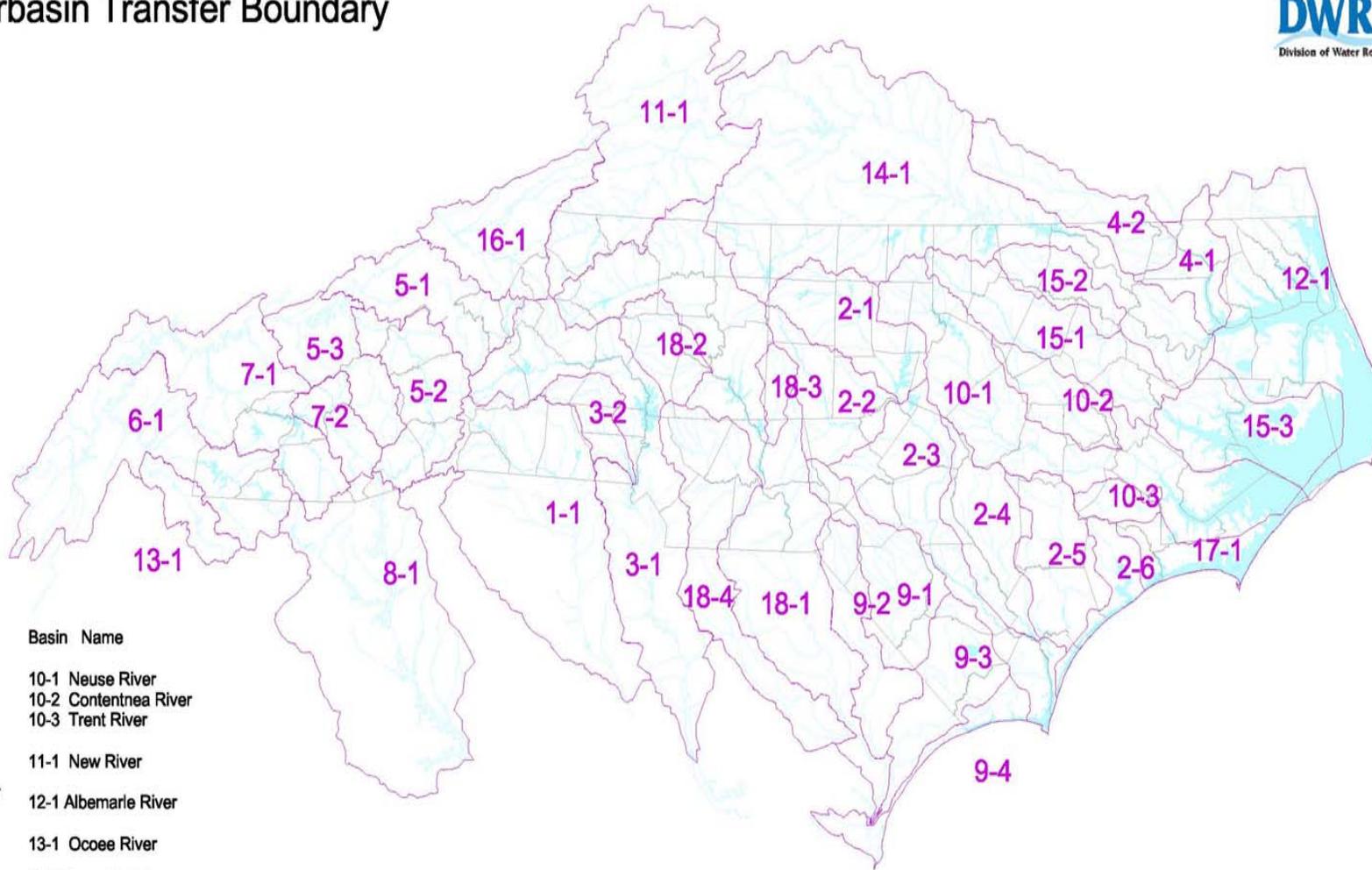
# North Carolina River Basins (as defined by G.S. 143-215.22G)



Basin #	Basin Name	Basin #	Basin Name
1-1	Broad River	10-1	Neuse River
2-1	Haw River	10-2	Contentnea Creek
2-2	Deep River	10-3	Trent River
2-3	Cape Fear River	11-1	New River
2-4	South River	12-1	Albemarle Sound
2-5	Northeast Cape Fear River	13-1	Ocoee River
2-6	New River	14-1	Roanoke River
3-1	Catawba River	15-1	Tar River
3-2	South Fork Catawba River	15-2	Fishing Creek
4-1	Chowan River	15-3	Pamlico River & Sound
4-2	Meherin River	16-1	Watauga River
5-1	Nohchucky River	17-1	White Oak River
5-2	French Broad River	18-1	Yadkin River
5-3	Pigeon River	18-2	South Yadkin River
6-1	Hiwassee River	18-3	Uwharrie River
7-1	Little Tennessee River	18-4	Rocky River
7-2	Tuskasegee River		
8-1	Savannah River		
9-1	Lumber River		
9-2	Big Shoe Heel Creek		
9-3	Waccamaw River		
9-4	Shalotte River		

Basins  
 Counties  
 Cities

# Extended Interbasin Transfer Boundary



## Basin Name

- 1-1 Broad River
- 2-1 HawRiver
- 2-2 Deep River
- 2-3 Cape Fear River
- 2-4 South River
- 2-5 NE Cape Fear
- 2-6 New River
- 3-1 Catawba River
- 3-2 South Fork Catawba River
- 4-1 Chowan River
- 4-2 Meherrin River
- 5-1 Nolichucky River
- 5-2 French Borad River
- 5-3 Pigeon River
- 6-1 Hiwassee River
- 7-1 Little Tennessee River
- 7-2 Tuskasegee River
- 8-1 Savannah River
- 9-1 Lumber River
- 9-2 Big Shoe Heel Creek
- 9-3 Waccamaw River
- 9-4 Shallotte River

## Basin Name

- 10-1 Neuse River
- 10-2 Contentnea River
- 10-3 Trent River
- 11-1 New River
- 12-1 Albemarle River
- 13-1 Ocoee River
- 14-1 Roanoke River
- 15-1 Tar River
- 15-2 Fishing Creek
- 15-3 Pamlico River & Sound
- 16-1 Watauga River
- 17-1 White Oak River
- 18-1 Yadkin River
- 18-2 South Yadkin River
- 18-3 Uwharrie River
- 18-4 Rocky River

- IBT Boundary
- Counties
- Rivers
- Coast



# Final Determination

- **The benefits outweigh the detriments.**
- **The detriments are or will be mitigated.**
- **Transfer not exceed the amount of the projected shortfall.**
- **No reasonable alternatives.**

# Certificate Conditions

- **7 required conditions**
- **Water Conservation Plan – equal or exceed most stringent in the source basin**
- **Drought Management Plan – equal or exceed most stringent in the source basin**
- **Quarterly reporting within 30 days of the end of the quarter**

# Kerr Lake Regional Water System Interbasin Transfer Status

- **10 MGD Grandfathered Capacity**
  - **From Roanoke River to Tar/Neuse River Basins**
  
- **2040 projected interbasin transfer is estimated to be 24 MGD.**
  
- **Updates -**  
[http://www.ncwater.org/Permits\\_and\\_Registration/Interbasin\\_Transfer/](http://www.ncwater.org/Permits_and_Registration/Interbasin_Transfer/)

# Summary

- **No comprehensive plan for water quantity management in NC.**
- **No federal oversight of / requirements for water quantity management.**
- **Pro**
  - **Less government regulation & permitting.**
  - **Equal right to the water for all.**
- **Con**
  - **No plan to ensure availability of water for future water supply, industry, continued economic growth, & ecological health on NC's water bodies.**

# River Basin Commissions

- **Roanoke River Basin Commission**
  - **Ad Hoc Water Allocation Committee**
- **Catawba-Wateree River Basin Commission**
- **Yadkin-PeeDee River Basin Commission**
- **Proposed Little Tennessee River Basin Commission**

# Questions

Contact Information

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**Tom.Fransen@ncmail.net**

**www.ncwater.org**

Copy of presentation online at - <http://www.ncwater.org/basins>

