

Central Coastal Plain Capacity Use Area Update

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Division of Water Resources
Ground Water Management Section

Water Allocation Committee Meeting
Archdale Ground Floor Hearing Room
March 9, 2011

Introduction

- What is the Central Coastal Plain Capacity Use Area?
 - What counties are regulated?
 - Withdrawal reductions required from Cretaceous* aquifers
 - Compliance and reporting (going paperless)
- Conservation measures assessment
- Infrastructure improvements and their costs
- On-line data accessibility
- Rebounding ground water levels

* Cretaceous is a geologic time period and refers to sediments deposited between 128 and 63 million years ago

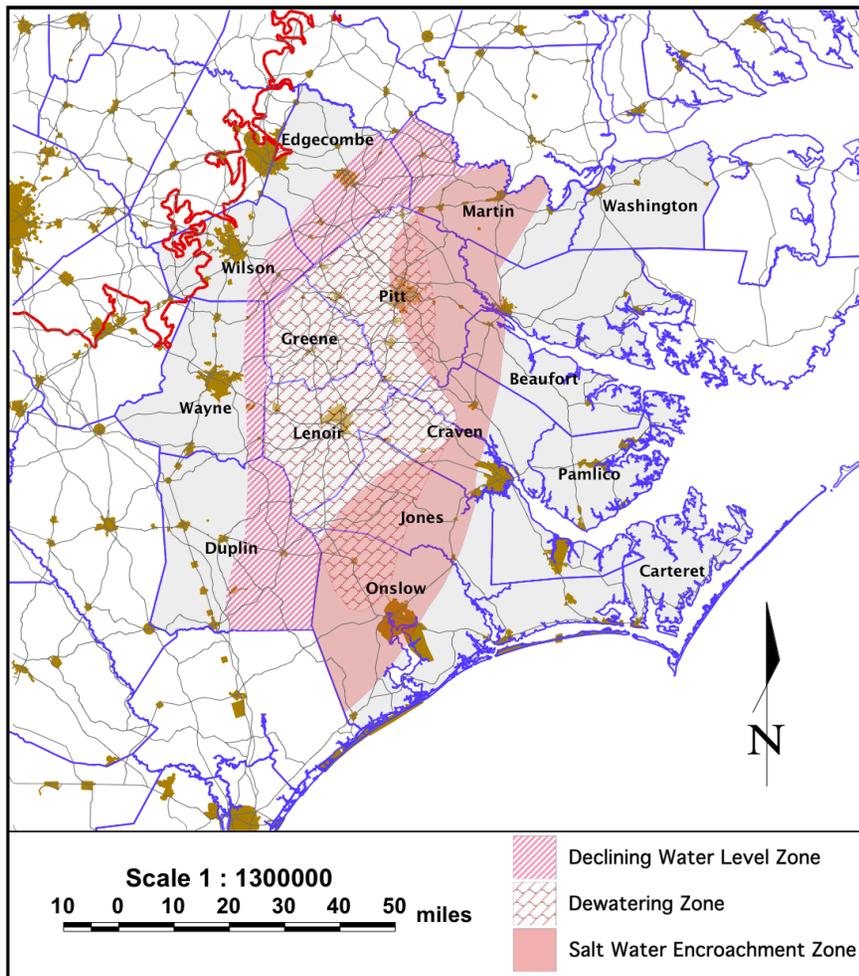
What is the CCPCUA?



- 15 counties in the central portion of the Coastal Plain
- Over 8,000 square mile area
- Currently 236 permit holders and 81 registrations in 2009
- Permits are required for ground water use above 100,000 gallons per day
- Registrations between 10,000 and 100,000 gallons per day
- Surface water registration above 10,000 gallons per day

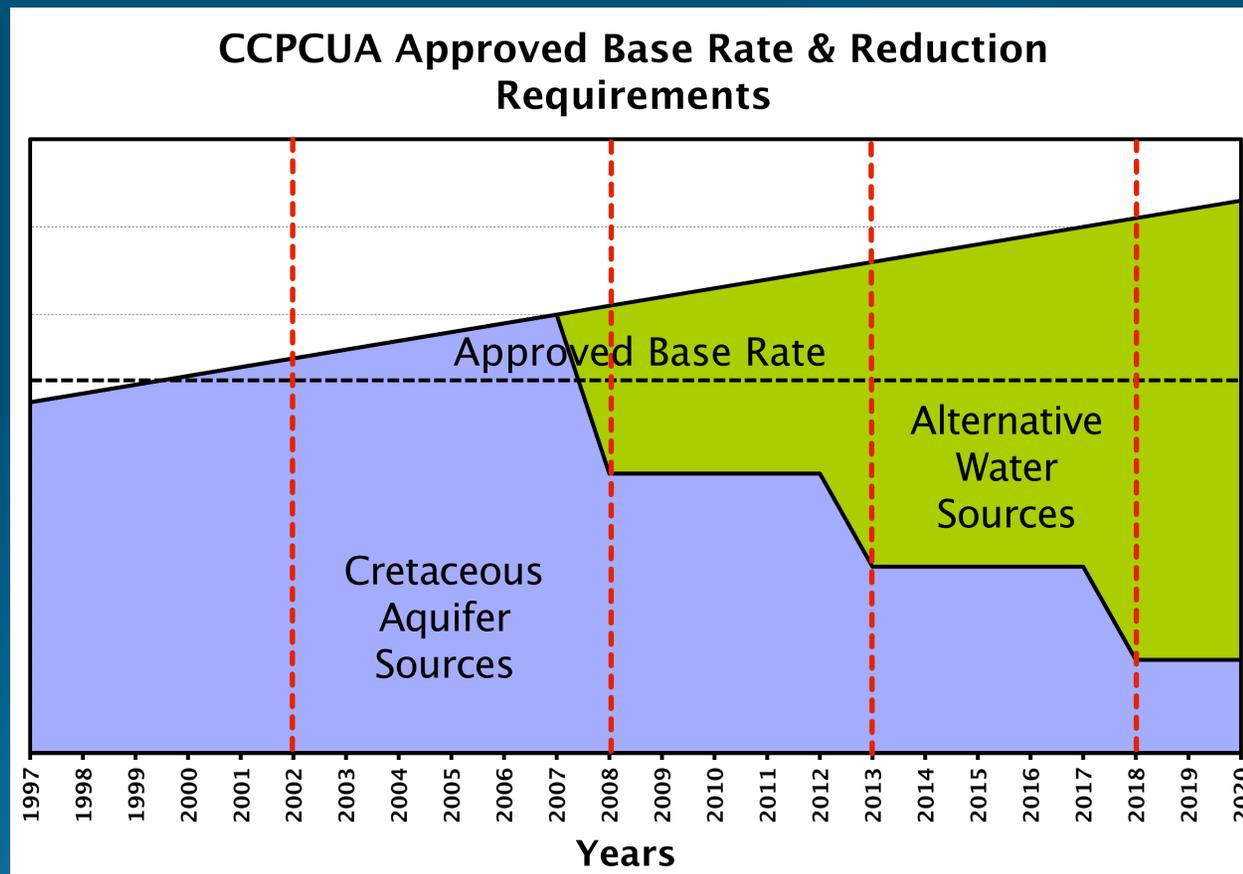
CCPCUA Reductions

CCPCUA Cretaceous Aquifer Zones



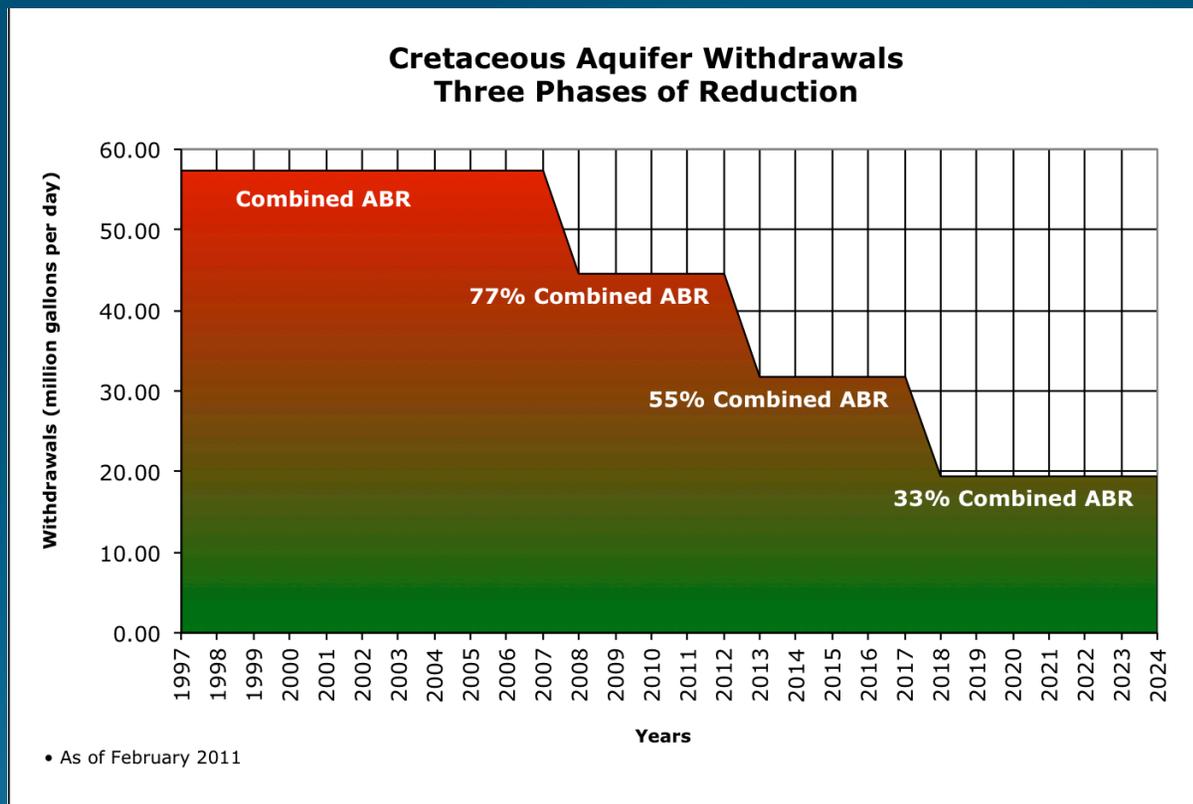
- Cretaceous Zones: Declining Water Level, Dewatering, and Salt Water Encroachment
- Approved Base Rate (ABR)
- Water users required to reduce withdrawals between 2002 and 2018 by 30 to 75%, in three phases, from ABR

CCPCUA Compliance



- Regional & independent alternative water supplies
- Surface water
- Shallower wells
- Better water treatment capability
- Interconnections

CCPCUA Compliance



- Reductions over 16 year period should lead to sustainable rate of withdrawal from Cretaceous aquifers
- Alternative water sources will make up for reductions and allow for growth

Reported Withdrawals

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Choose a year...

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Central Coastal Plain Capacity Use Area 2009 Water Withdrawal Summary Tables
 Tables compiled 02-25-2011, units are gallons per day

County	Permitted Current Permit Limits			Reported for 2009				Type of Use	Permitted Current Permit Limits			Reported for 2009			
	max daily	yearly (ABRs)	yearly (2018)	Ground Water		Surface Water	max daily		yearly (ABRs)	yearly (2018)	Ground Water		Surface Water		
				by all permits	by yearly permits	by registrations	by registrations					by all permits	by yearly permits	by registrations	by registrations
Beaufort	149,067,200			63,579,564		3,368,993	273,600	Agricultural	100,359,360	1,195,415	424,328	4,666,793	188,504	13,525,817	19,399,300

Aquifer	Permitted Current Permit Limits			Reported for 2009 Ground Water		
	max daily	yearly (ABRs)	yearly (2018)	by all permits	by yearly permits	by registrations
Bedrock	14,960,100			1,697,042		356,227
Black Creek	12,475,420	26,448,997	8,680,873	19,335,294	15,349,514	202,834
Peedee	16,092,353	3,999,919	1,092,319	1,919,623	400,233	96,551
Upper Cape Fear	12,269,800	26,767,015	9,485,372	15,990,322	11,803,967	77,493
Lower Cape Fear		50,001	50,001	15,877	15,877	
Surficial	110,637,193			15,208,549		310,414
Castle Hayne	286,594,033			87,894,983		434,336
Beaufort						165,478
Upper Tertiary	4,000,000					
Yorktown	14,067,000			1,462,966		96,500
Totals:	471,095,900	57,265,932	19,308,564	143,524,656	27,569,590	14,309,989

Yearly permit limits are linked to withdrawal reductions occur, annual limits allow for "Approved Base Rate" and is the annual withdrawal. The ABR is the annual rate of withdrawal if all three phases of withdrawals reported by all permit holders.

*Totals may become

Going Paperless

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CCPCUA Application, Registration, and Reporting

Central Coastal Plain Capacity Use Area permit applicants, permit holders and registrants may apply and register as well as report water withdrawals, ground water levels, surface water purchases, and chloride sampling results through this web page. You are not required to mail or fax any paper documents, instead you will complete and **certify** any applications, registrations, or report forms. Be sure to keep a copy of the forms (paper or digital) for your records. Additional documents you wish to send us may be uploaded or mailed or faxed (919-733-3558).

Before beginning data entry the first time you **must** establish your own password. This is accomplished using the left-hand form and is required for new applicants or registrants also (you will need to create your own ID which will be replaced by an official one later). An email will be sent immediately after clicking the activation button, this will confirm your ID, password, email, contact name, and facility name. Log into the data entry system using your ID and password in one of the right-hand forms.

Click on the save changes button at the top or bottom of a page to update the form. The saving process will automatically update the DWR transaction data base, but those data will not be added to the master data base until we receive notice that you have certified that the form is complete. Once a data entry page is entered fully, **certify** and print a copy for your records. You will not be able to make further changes to a certified form. **Important**, data entry need not be done all at once. Information can be changed as long as it remains in the transaction data base and the form has not been certified, so you may retrieve saved data and make adjustments.

If you have questions or comments please call or email [Gabrielle Cooper](#), or [Michael Bauer](#), or [Craig Caldwell](#). [Click here to return to the CCPCUA page.](#)

ID and Password Activation

Enter your name, facility name, e-mail address, permit or registration ID (either from the permit or registration form).

Permit Application (>100,000 gallons per day of ground water withdrawals)

Enter permit ID, password, and click button to view application.

Permit ID: Password:

Fill out the application and certify. Print out a copy (paper or digital) for your records. A blank [PDF application form](#) is available.

Conservation Measures

Enter permit ID, password, and click button to view conservation measure update form.

Permit ID: Password:

Permit Reports (Withdrawal, Water Level, Chloride & Surface Water Purchases)

Enter permit ID, password, and click the button to begin data entry.

Permit ID: Password:

Fill out appropriate reports and certify. Print out a copy (paper or digital) for your records.

Upload

Upload additional documentation for any CCPCUA form as a digital file (less than 1.0 mb each):

no file selected

Upload associated with following form:

Permit or Registration ID: Password:

Registration

(>10,000 to 100,000 gallons per day of ground water withdrawals & >10,000 gallons per day of surface water withdrawals)

Enter registration ID and password, and click the button to begin data entry.

Registration ID: Password:

Fill out the registration and certify. Print out a copy (paper or digital) for your records.

- Our applicants and permit holders are choosing to submit their applications and meet their reporting requirements using our on-line forms. Participation at ~ 40%.
- Both permitting and registration forms are supported.

www.ncwater.org/CCPCUAreportonline

Conservation Measures

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Kinston contact, the contents of our data base describing your conservation measures is shown below. Please update these fields in each water use category, as appropriate, to reflect your current situation. Click on the update button associated with each water use category before adjusting the information in another category.

Add Public Water Supply Conservation Measures?

Water Shortage Response Plan: Date DWR approved (yyyy-mm-dd): System Resolution/Implementation Date (yyyy-mm-dd):

Existing Rate Structure: Rate Summary: (2009 permit renewal application) Rate Structure: The City of Kinston has changed its water rate structure from a descending structure to a flat structure for each rate class. In 2008, we also replaced the Minimum Charge, which included usage up to 3,000 gallons, with a Base Charge that does not include any consumption. Thus, even customers using less than 3,000 gallons per month can reduce their bills by conserving water. Our current water rate schedule is included at the end of this section.

CU3024 (04-54-010) % of Unaccounted for Water (units are gallons)

Year	CCP		LWSP Purchased	Total Sources	LWSP Total Usage	LWSP Usage Type (Commercial - Industrial - Institutional - Residential)	LWSP Sales	LWSP System Process Water	% Unaccounted
	GW	SW or PW							
2009	340,934,000	0	891,378,000	1,232,312,000	1,135,150,000	metered: 0 - 270,100,000 - 0 - 773,800,000 non-metered: 0 - 0 - 0 - 0	0	91,250,000	7.88
2008	1,072,029,000	0	172,482,000	1,244,511,000	1,221,655,000	metered: 620,500,000 - 0 - 116,435,000 - 474,500,000 non-metered: 0 - 0 - 0 - 0	0	10,220,000	1.84
2007	1,279,066,000	0	0	1,279,066,000	1,249,030,000	metered: 0 - 604,805,000 - 116,435,000 - 523,410,000 non-metered: 0 - 0 - 0 - 0	0	4,380,000	2.35
2006	1,333,225,000	0	0	1,333,225,000	1,289,910,000	metered: 0 - 604,805,000 - 116,435,000 - 523,410,000 non-metered: 0 - 0 - 0 - 0	0	45,260,000	3.25
2002	1,551,102,800	0	0	1,551,102,800	1,387,000,000	metered: 620,500,000 - 0 - 0 - 766,500,000 non-metered: 0 - 0 - 0 - 0	0	0	10.58
1997	1,947,246,600	0	0	1,947,246,600	1,842,885,000	metered: 604,805,000 - 116,435,000 - 1,121,645,000 non-metered: 0	0	0	5.36
Sources				% unaccounted = difference/total sources * 100	Usage				

Water Loss Reduction Program: Water Loss Summary: (2009 permit renewal application) Water Loss Reduction Program: The City of Kinston does not have a water loss reduction program. Over the last five years, our annual water loss has averaged 5.1%.

Annual Audits: Leak Detection: Leak Repair:

Irrigation Ordinance: Irrigation Ordinance Summary: (2009 permit renewal application) Water Conservation Ordinance for Irrigation: At this time, the City of Kinston has an ordinance restricting water use for irrigation purposes.

Retrofit Program: Retrofit Program Summary: (2009 permit renewal application) Retrofit Program: A retrofit program is being coordinated between the Neuse Regional Water Authority and its members, including the City of Kinston. This has already been adopted as part of the NRWASA Water Shortage Response Plan.

Public Education Program: Education Program Summary: (2009 permit renewal application) Public Education Program: The City of Kinston already uses bill inserts and other information to help reduce the utility usage. A school-focused program is currently being implemented with various ages of students with messages regarding water pollution and conservation.

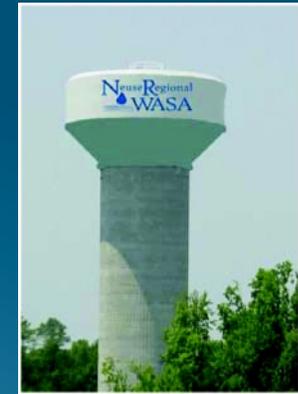
Water Reuse: Water Reuse Summary: (2009 permit renewal application) Water reuse Feasibility: The Kinston regional Water reclamation facility is currently constructing a study project for using wastewater effluent on tree crops. Another project has been proposed that would use reuse water from a former war battlefield site and a soccer complex. Construction of these projects would result in an eight mile long reuse water main available for other reuse opportunities.

Our permit holders are able to update conservation measures on-line so DWR can gauge conservation efforts compared to CCPCUA rule descriptions.

Alternate Water Sources

(view on-line PDF)

- Greenville Utilities Commission will serve treated Tar River water to more communities in Greene and Pitt counties. An IBT certificate approved those transfers which will be fully implemented once conservation efforts meet provisions in CCPCUA rules.
- Neuse Regional Water and Sewer Authority serves treated Neuse River water to communities in Lenoir and Pitt counties. IBT certification is in process.
- Martin County Regional Water and Sewer Authority will serve treated Roanoke River water to communities in Martin county.



Alternate Water Sources (continued)

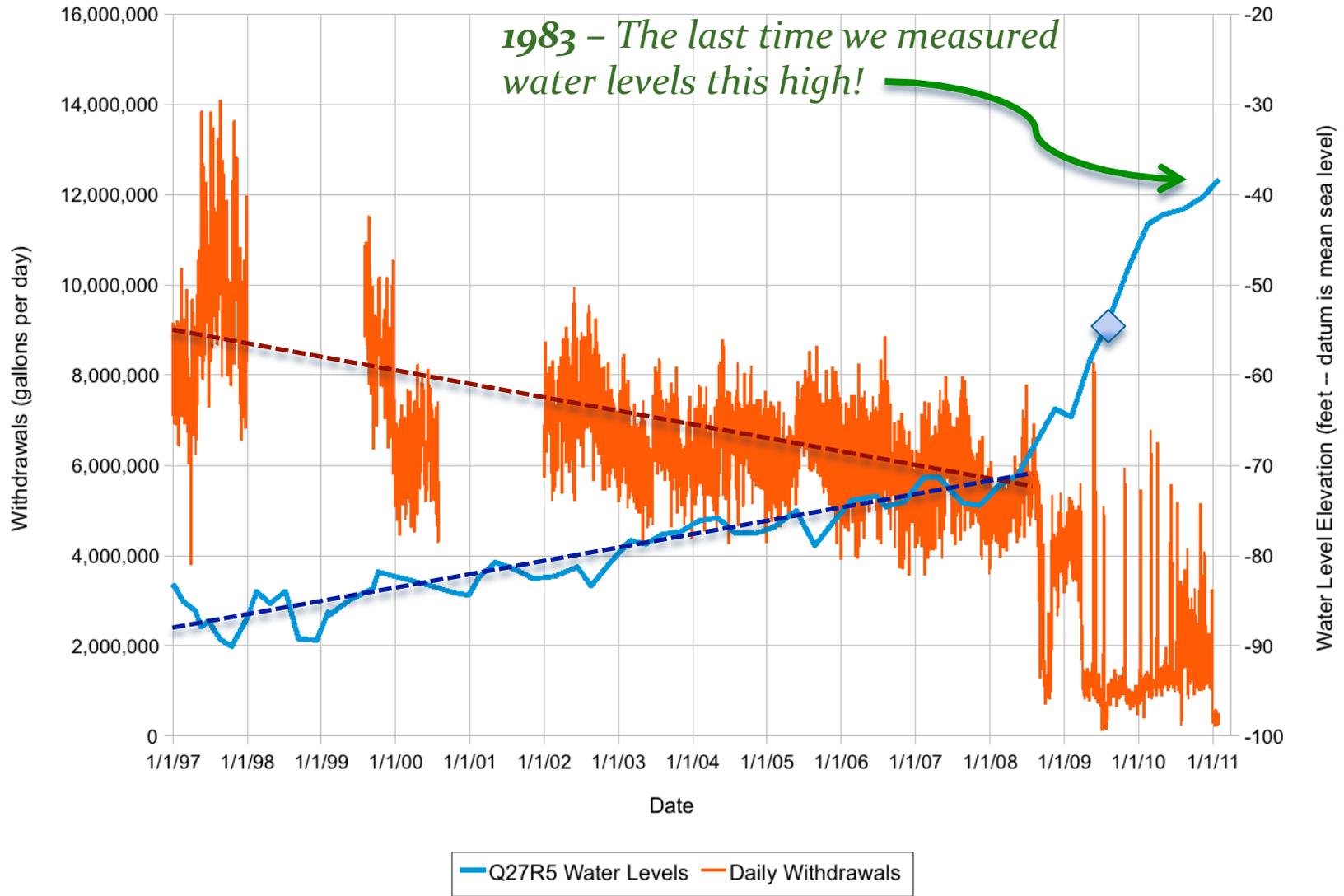
- The following permit holders are developing water sources in the Peedee aquifer: Craven County Water, Chinquapin Water Assoc., La Grange, Jones County Regional Water Corp., and Coastal Clean Power.
- The following permit holders are developing water sources in the Castle Hayne aquifer: New Bern, Craven County, Onslow Water and Sewer, Jacksonville, and Camp Lejeune.



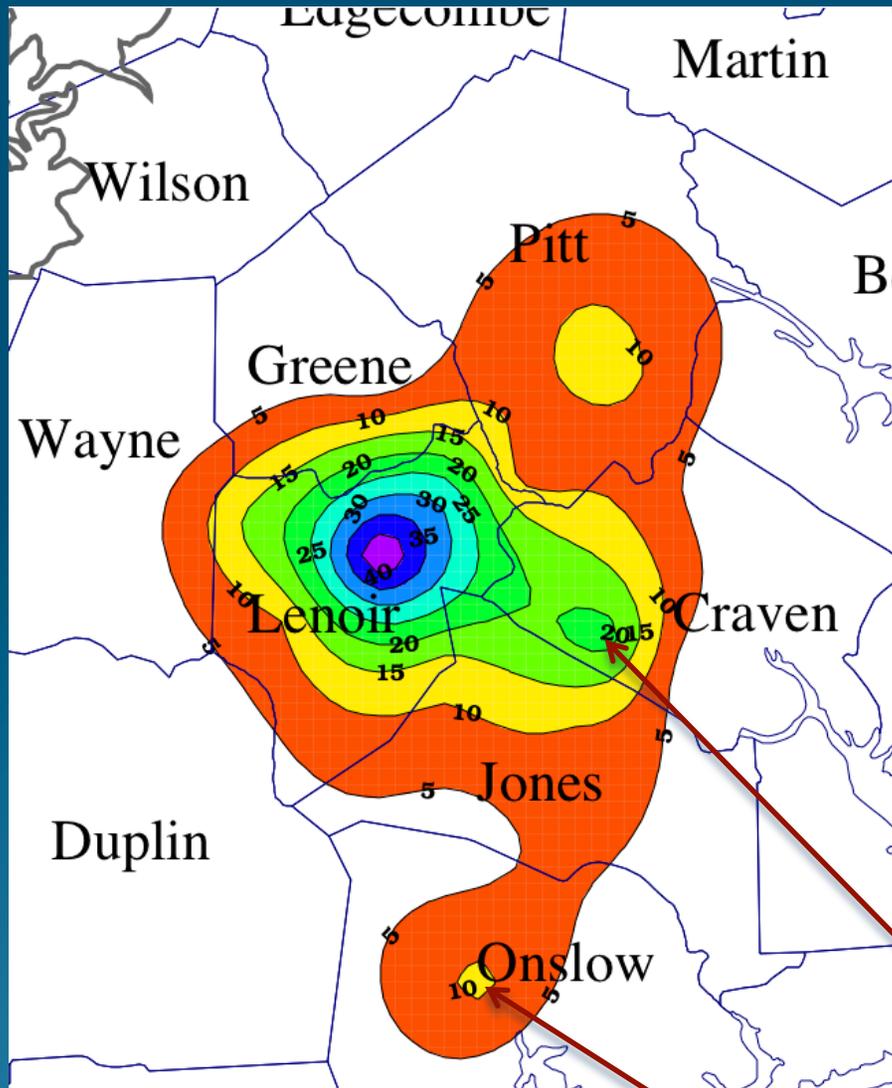
Alternate Water Sources (continued)

- Wayne Water Districts have developed bedrock and surficial aquifer well fields.
- Monrovia Growers and Worthington Farms have developed surface water reservoirs.
- E.I. Dupont de Nemours is using their WWTP effluent.
- Other permit holders are purchasing water from neighboring municipalities.
- All told, CCPCUA water providers are investing over \$330 million dollars on alternative supplies.

Water Levels at Q27R5 versus Water Withdrawals within 10 Miles



Black Creek Aquifer Recovery



Nov. 2007 – Nov. 2010

Most of the response is due to the Neuse Regional WASA surface water plant, but increased use of alternative aquifers by the City of New Bern and the City of Jacksonville are boosting rebounds near Cove City and Jacksonville, respectively.

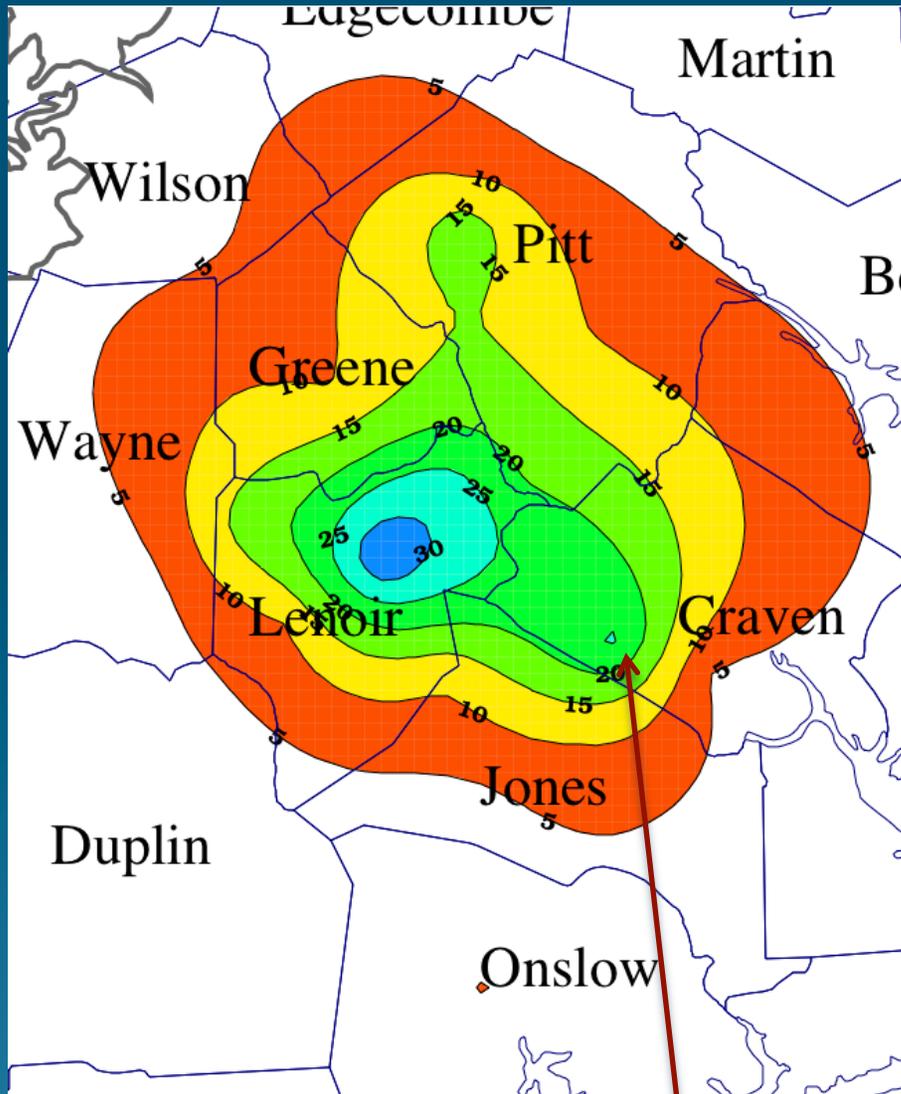
5 foot contour interval

Jacksonville

Cove City

Upper Cape Fear Aquifer Recovery

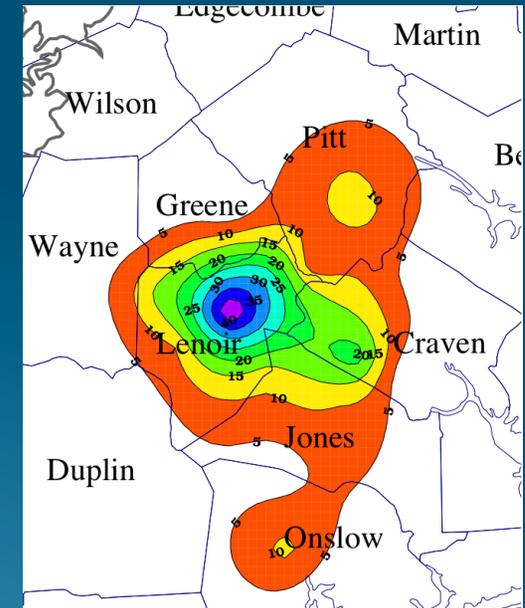
Nov. 2007 – Nov. 2010



5 foot contour interval

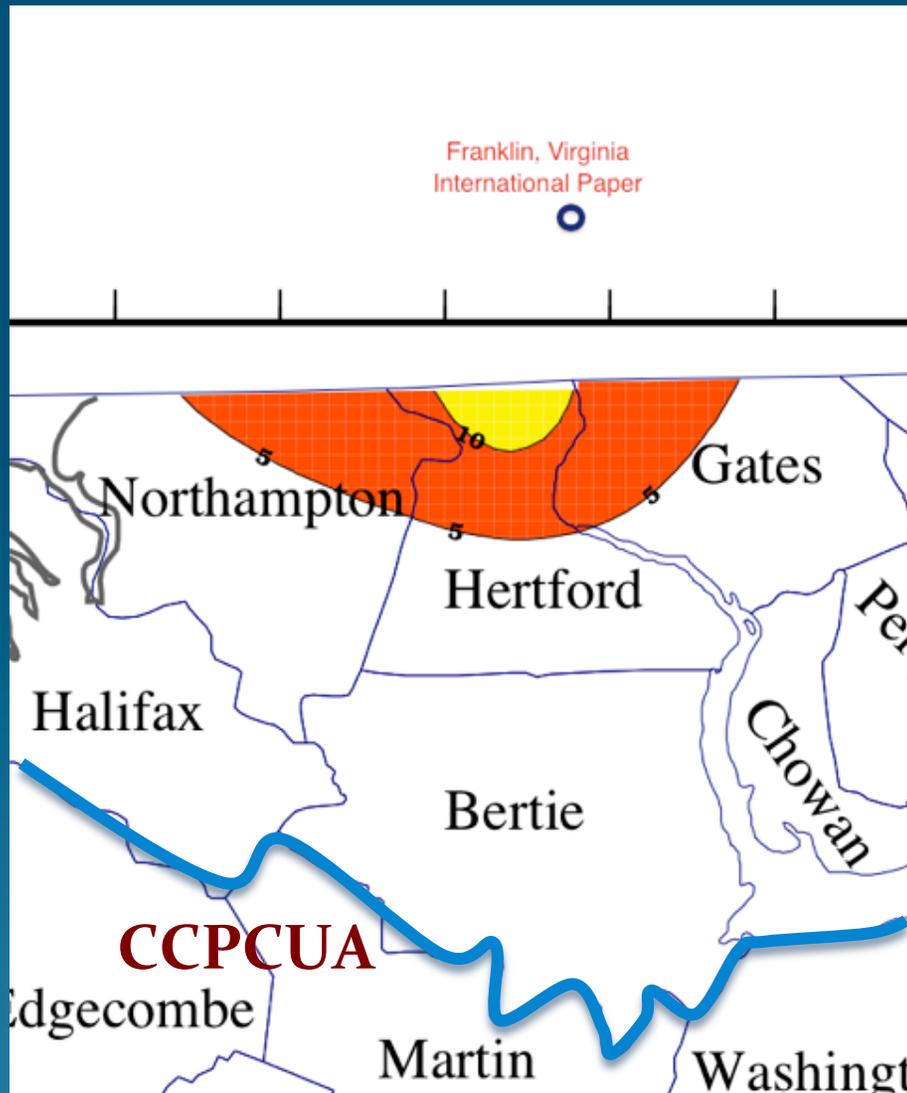
Cove City

Black Creek



The dissimilar rebound shapes between the Black Creek and Upper Cape Fear aquifers illustrate the locations of water providers making use of one of these aquifers and not the other.

Lower Cape Fear Aquifer Recovery



5 foot contour interval

Aug. 2008 – Nov. 2010

The Lower Cape Fear aquifer recovery is occurring in the northern coastal plain associated with the closure of the International Paper plant in Franklin Virginia.

Although not associated with the CCPCUA reductions – the recovery is mapped using DWR's monitoring well network and is valuable information to the northern coastal plain water providers.

CCPCUA Web Resources

- On-line access to ground water levels, withdrawal data, and reporting tools
- Paperless permit application, registration and reporting
- CCPCUA web page link off the DWR homepage
- Ground Water Data web page link off the DWR homepage
- The 2008 CCPCUA Assessment Report (pdf)
- The 2004 & 2009 CCPCUA Status Reports (pdf)
- Status of alternative water supply development in the CCPCUA – 2011 update

www.ncwater.org

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