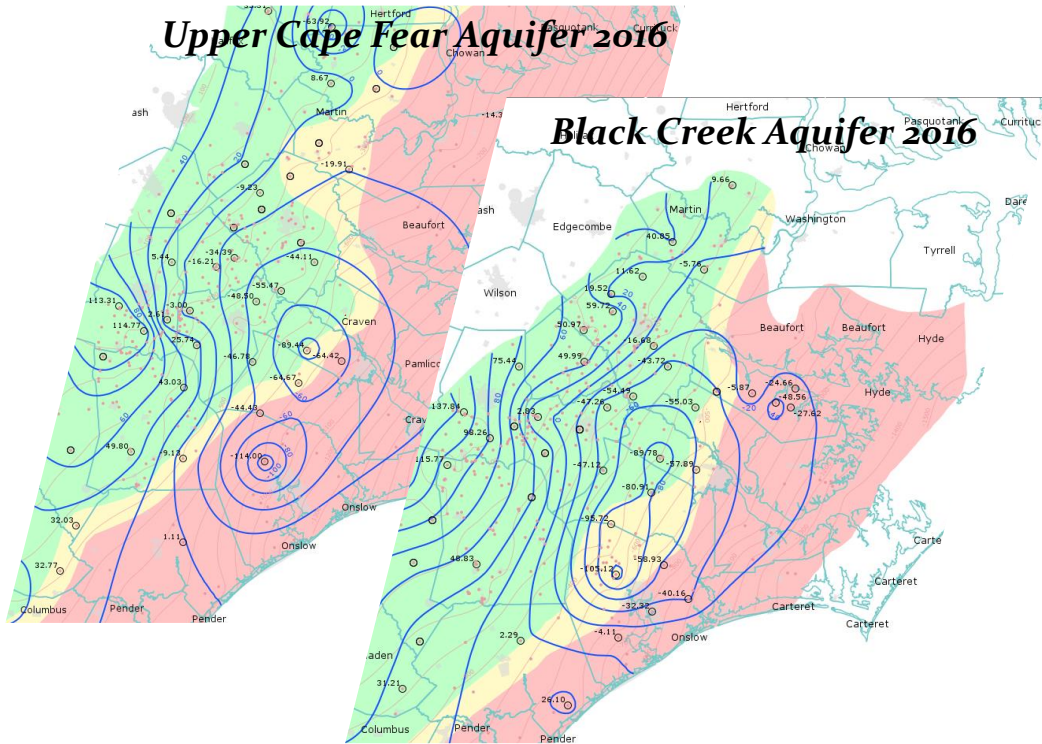


2018 CCPCUA Assessment

Central Coastal Plain Capacity Use Area



Nat Wilson
Division of Water Resources
Ground Water Management
Branch

Water Allocation Committee Meeting
Archdale Ground Floor Hearing Room
July 11, 2018

Introduction & Conclusions

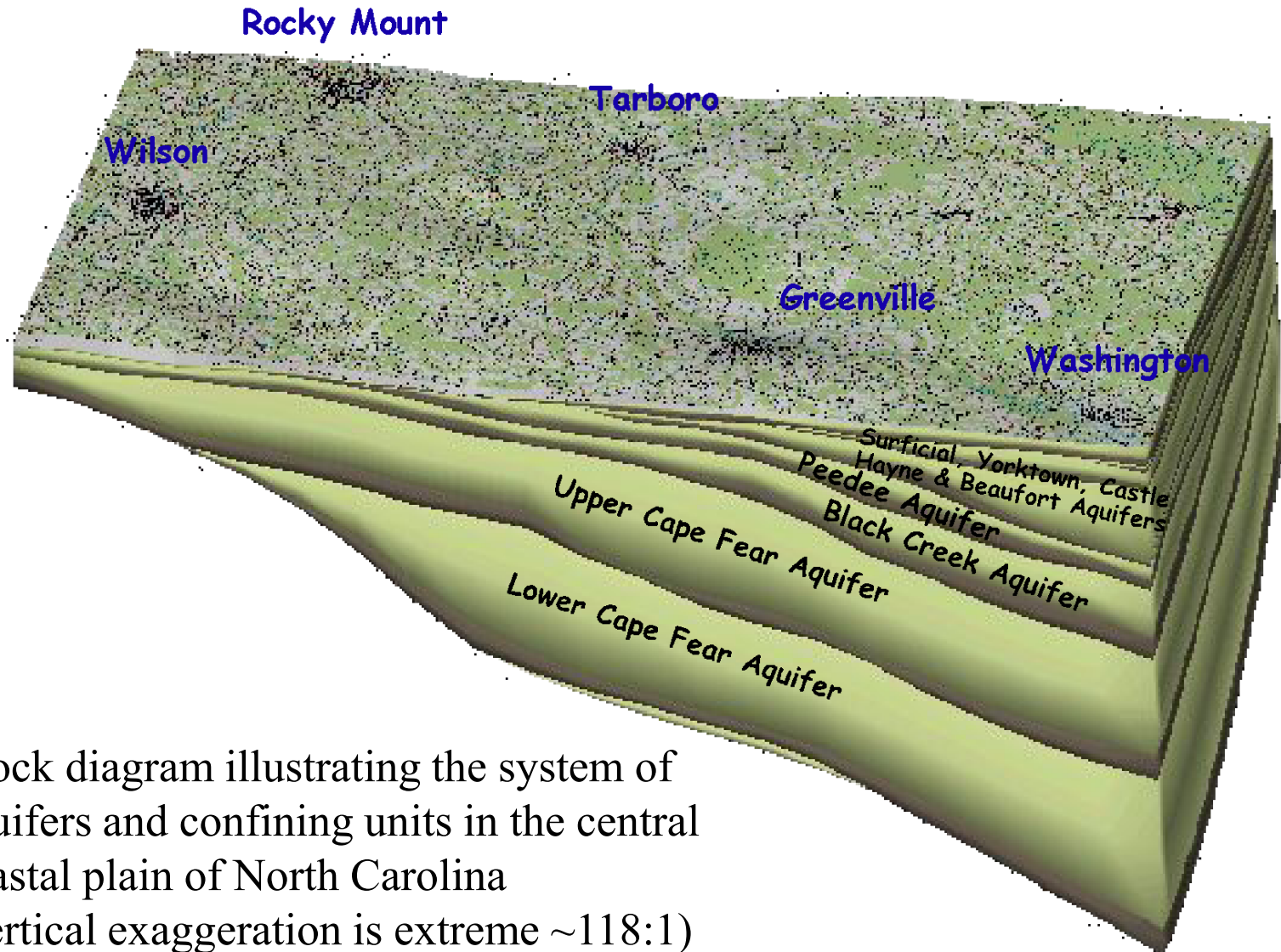
- What is the Central Coastal Plain Capacity Use Area?
- CCPCUA assessments
- Current aquifer conditions
- 2013 assessment outcome
- Public comments
- No changes to reduction zone map or reduction percentages
- DWR will continue to use temporary permits

What is the CCPCUA?



- 15 counties in the central portion of the coastal plain
- Currently there are 305 permit holders and 69 annual registrations.
- Permits are required for ground water use above 100,000 gallons per day.
- Ground water use registrations between 10,000 and 100,000 gallons per day
- Surface water use registration above 10,000 gallons per day

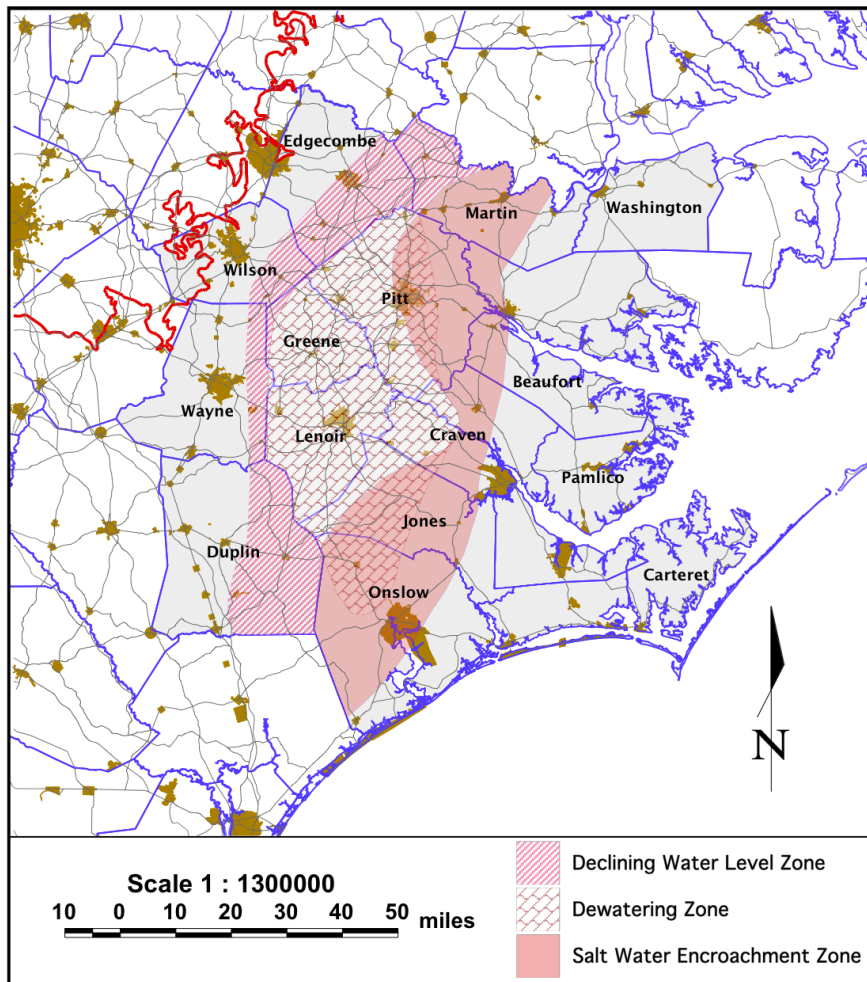
CCPCUA Aquifers



Block diagram illustrating the system of aquifers and confining units in the central coastal plain of North Carolina
(vertical exaggeration is extreme ~118:1)

CCPCUA Reductions

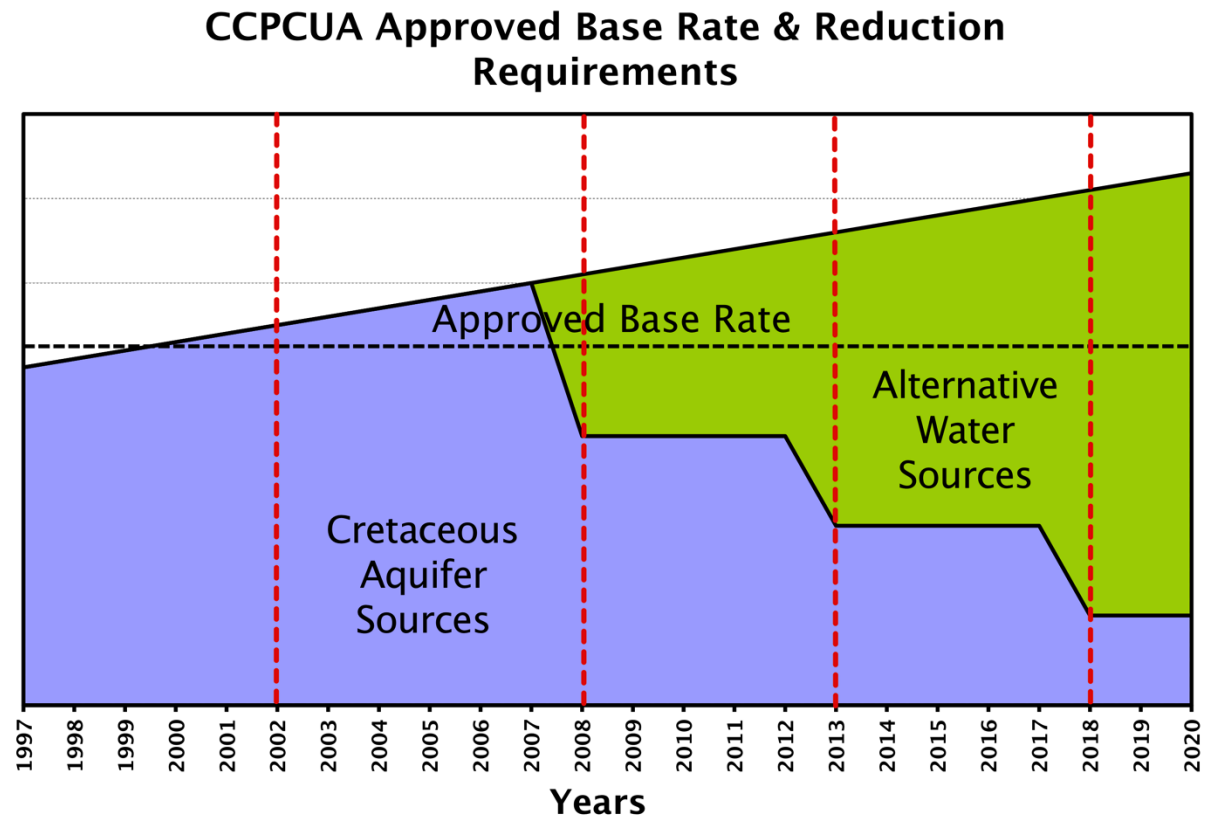
CCPCUA Cretaceous Aquifer Zones



- 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.
- Affects 54 of 305 permit holders.

CCPCUA Assessments

- 15A NCAC .0503(7) requires an analysis of aquifer data in 2008, 2013 and 2018.
- These years coincide with each phase of reduction.

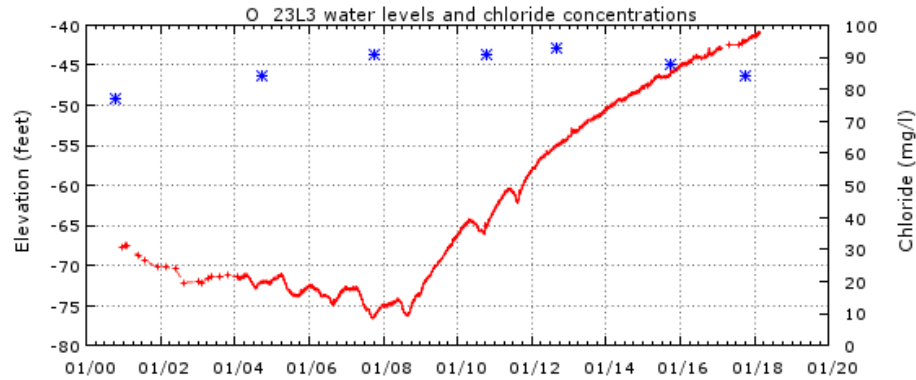


DWR Network & CCPCUA Reporting

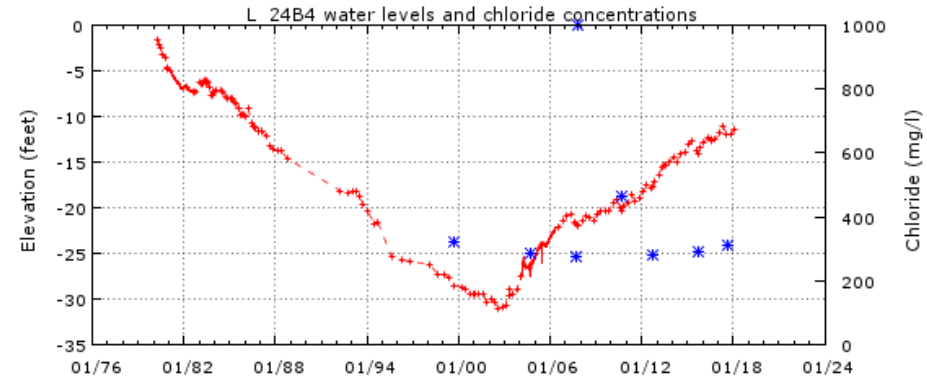
- CCPCUA requires reporting of daily water withdrawals by source
- Monthly static and pumping water levels
- Annual sampling and chloride analysis
- 662 wells at 228 sites statewide, 226 new wells at 70 sites since 1998
- Automatic recording equipment at over 80% of wells
- Chloride sampling every 2 – 3 years

Upper Cape Fear Aquifer Hydrographs

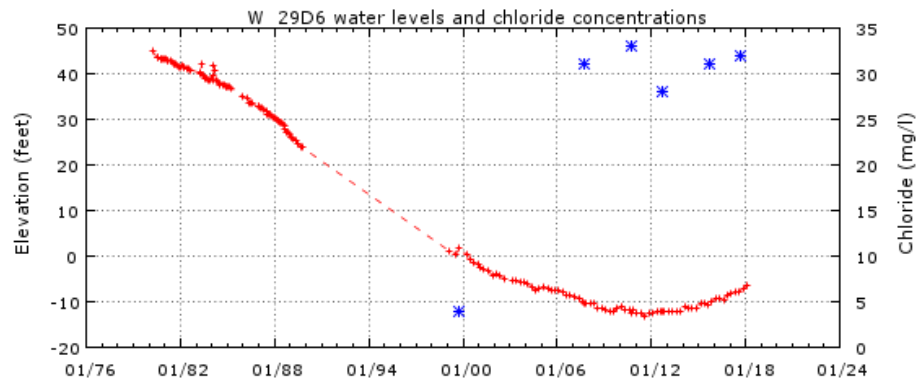
Chicod Station, Pitt County



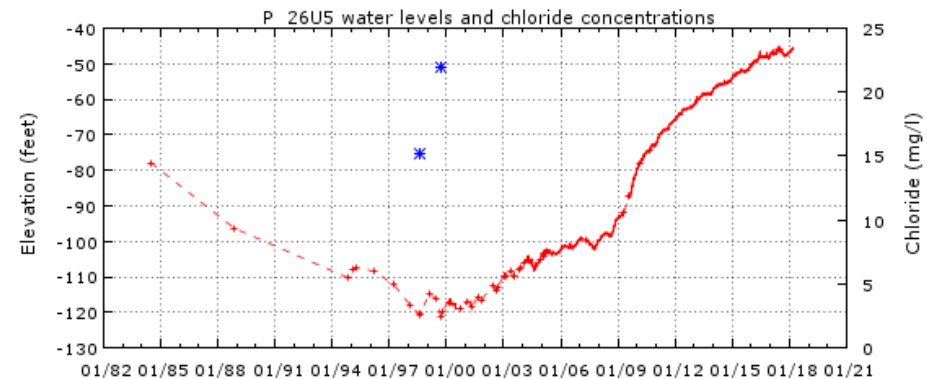
North Pitt High School Station, Pitt County



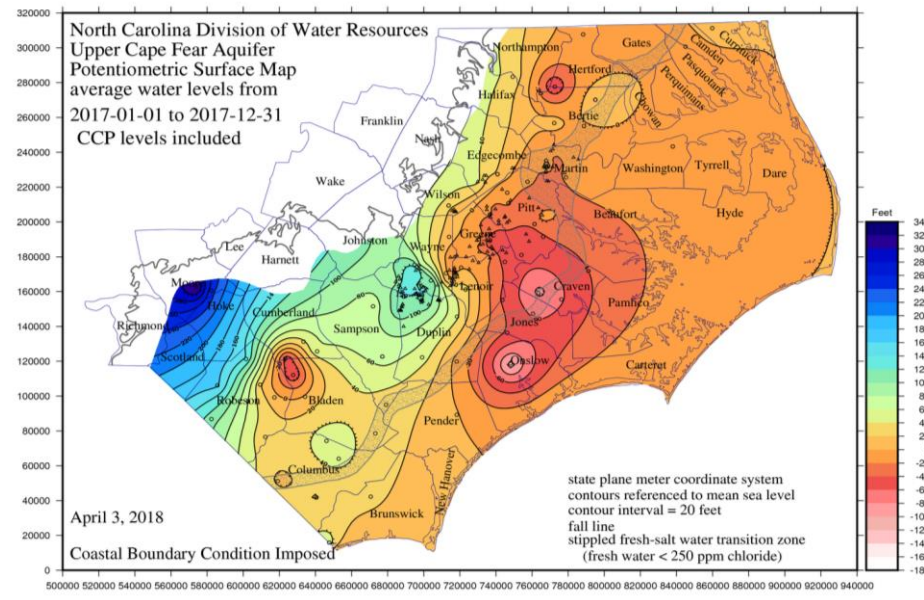
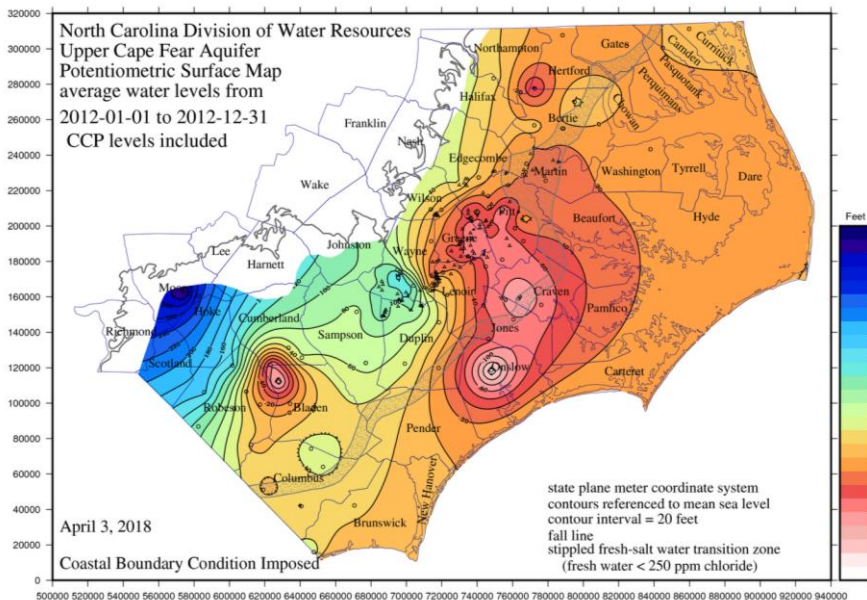
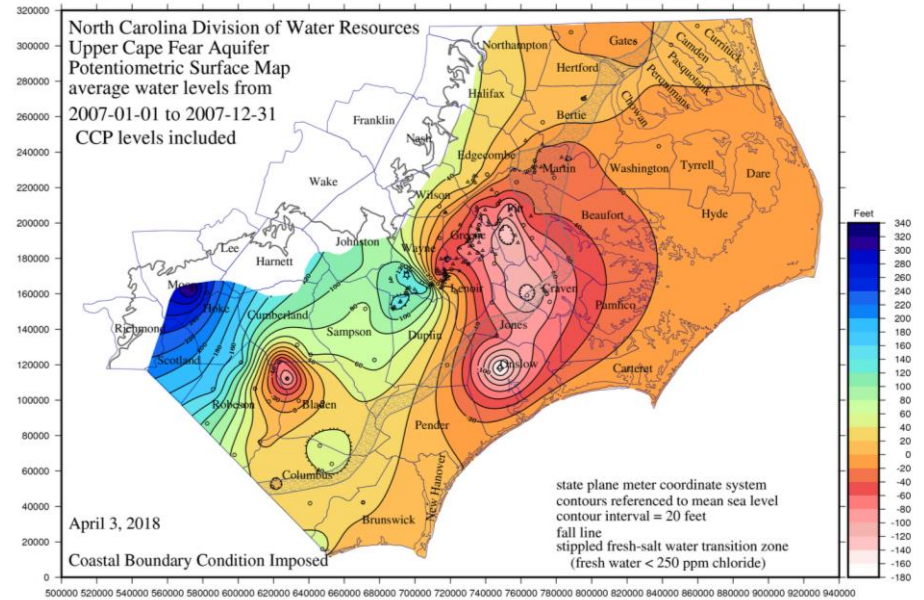
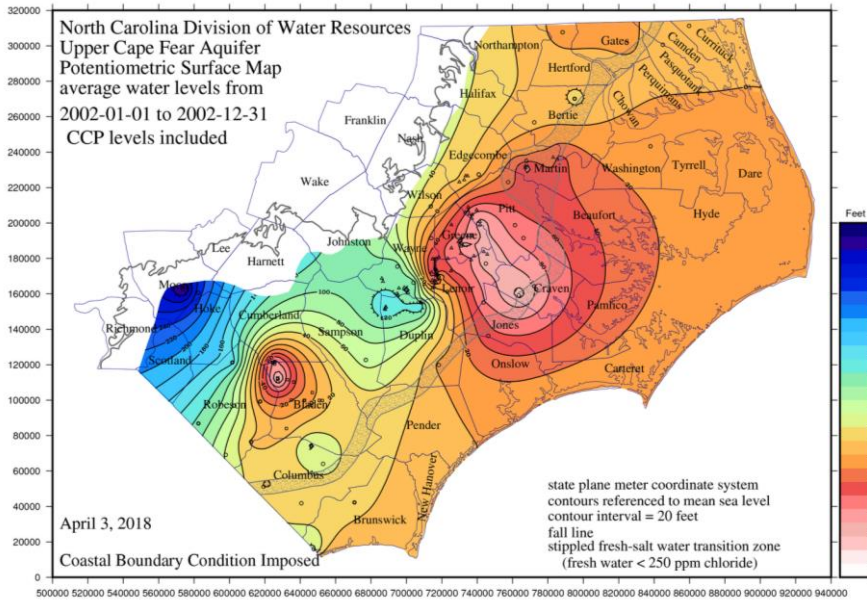
Chinquapin Station, Duplin County



Savannah School, Lenoir County

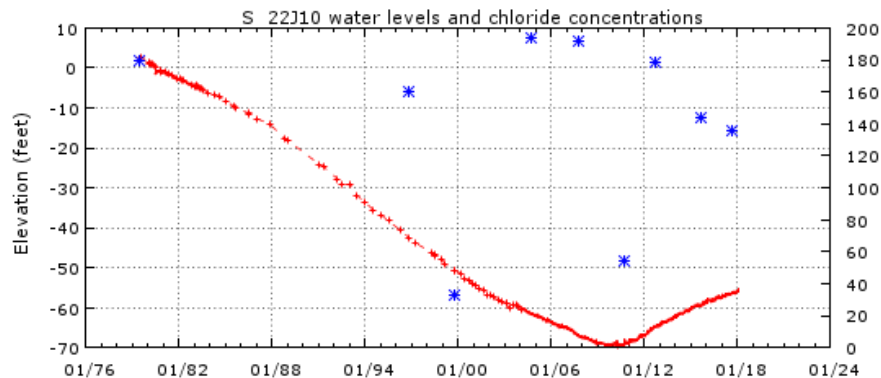


Upper Cape Fear Aquifer (2002, 2007, 2012 & 2017)

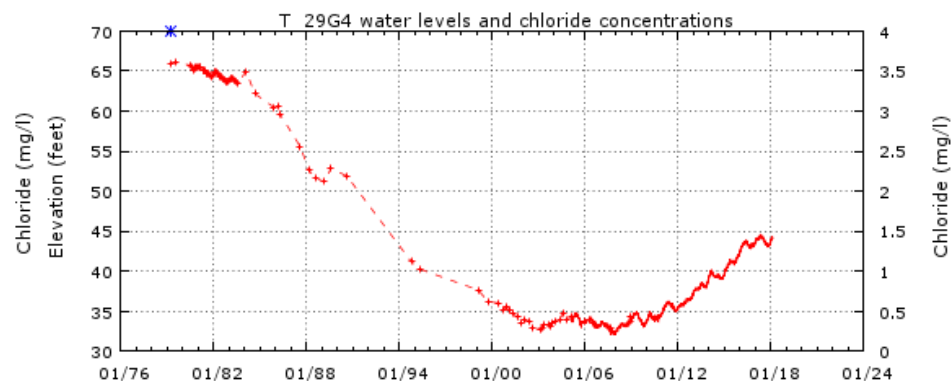


Black Creek Aquifer Hydrographs

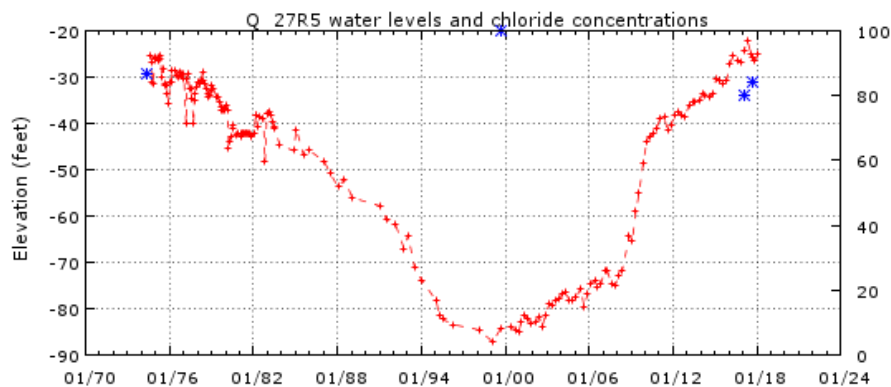
Clarks Station, Craven County



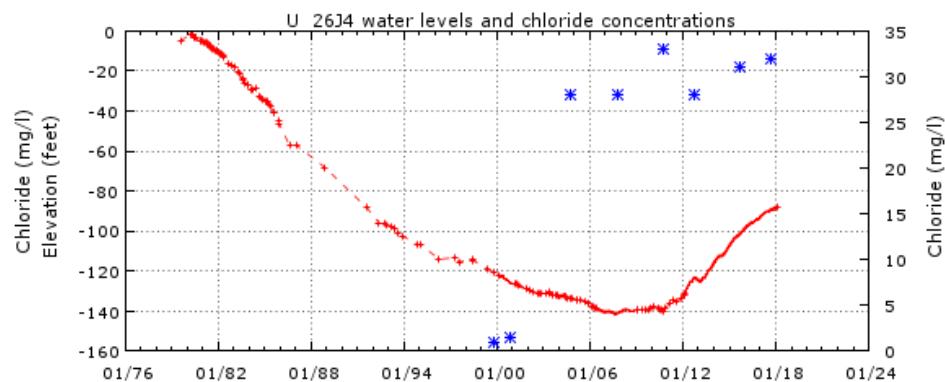
Pink Hill Station, Duplin County



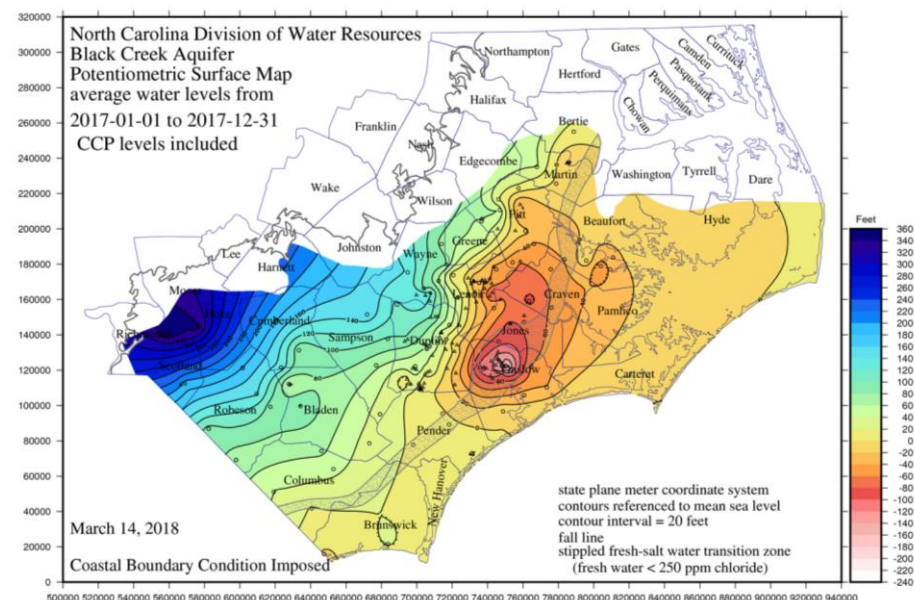
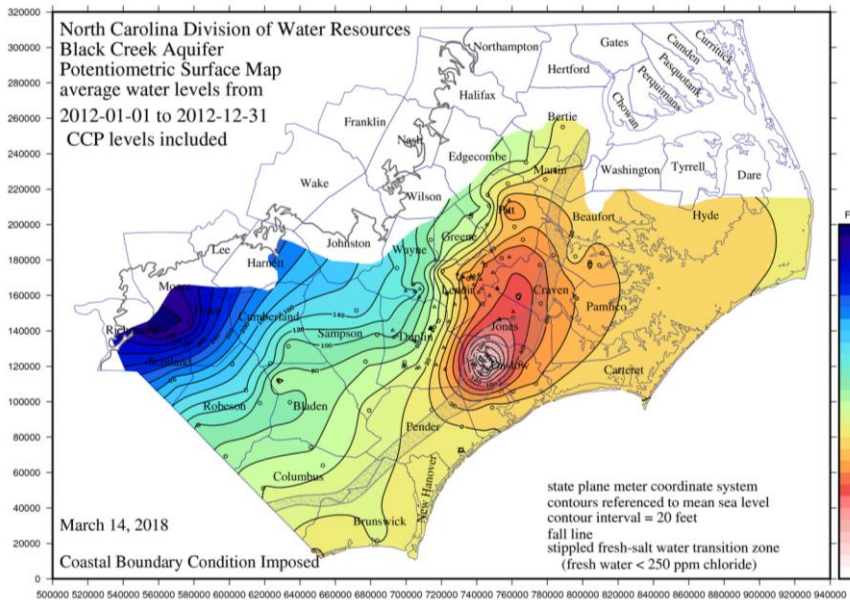
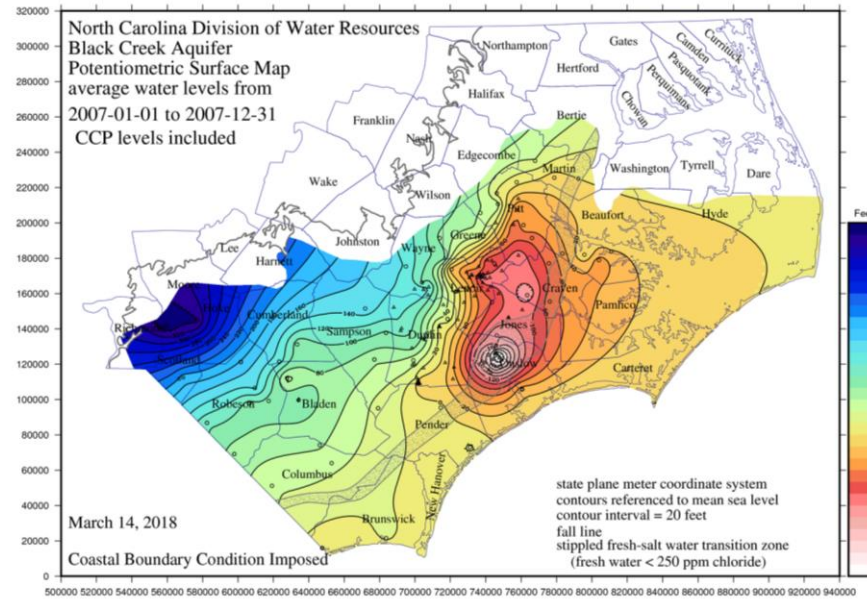
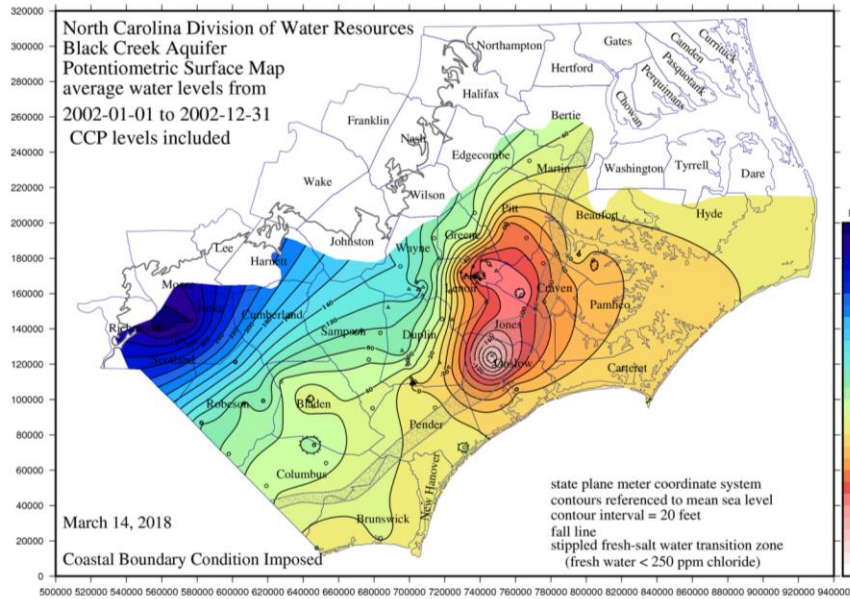
Kinston Yard Station, Lenoir County



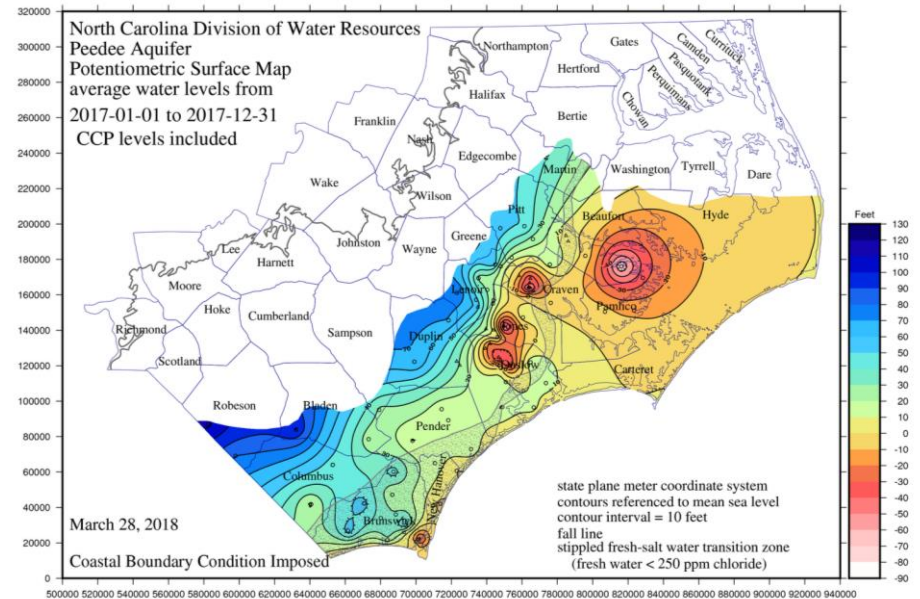
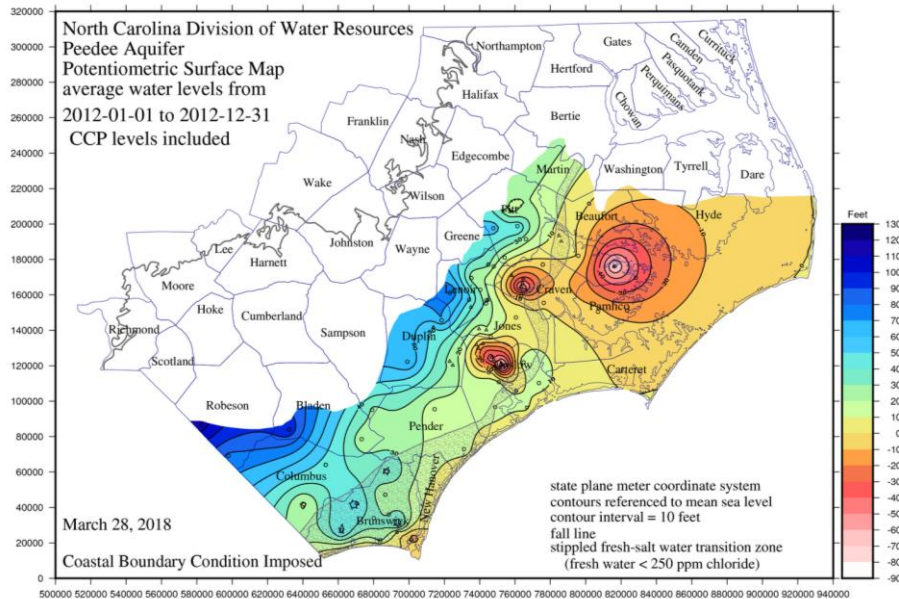
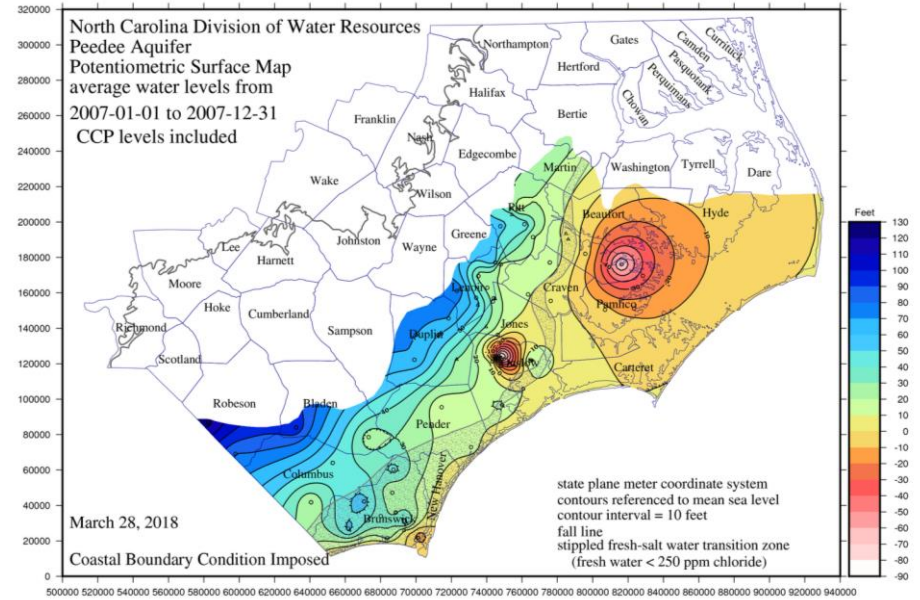
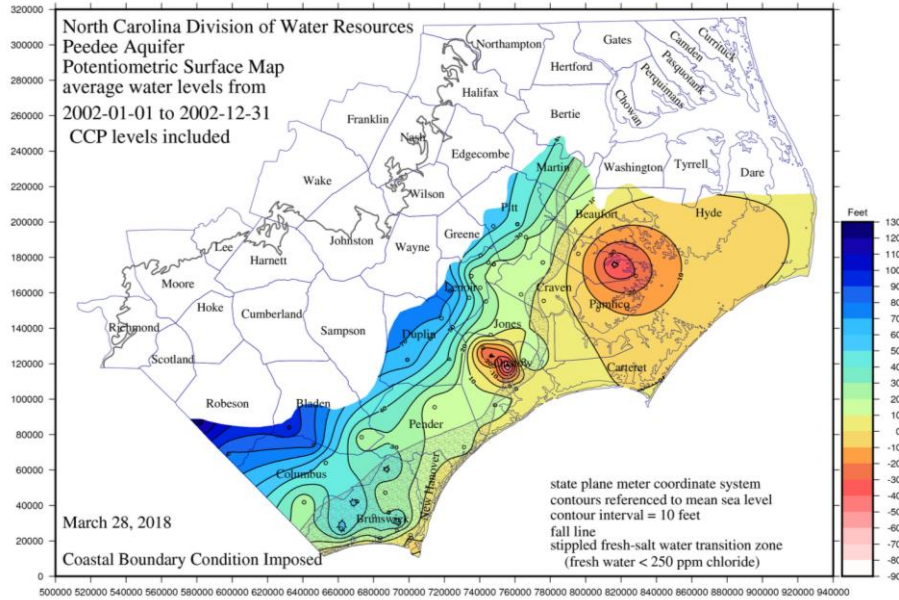
Comfort Station, Jones County



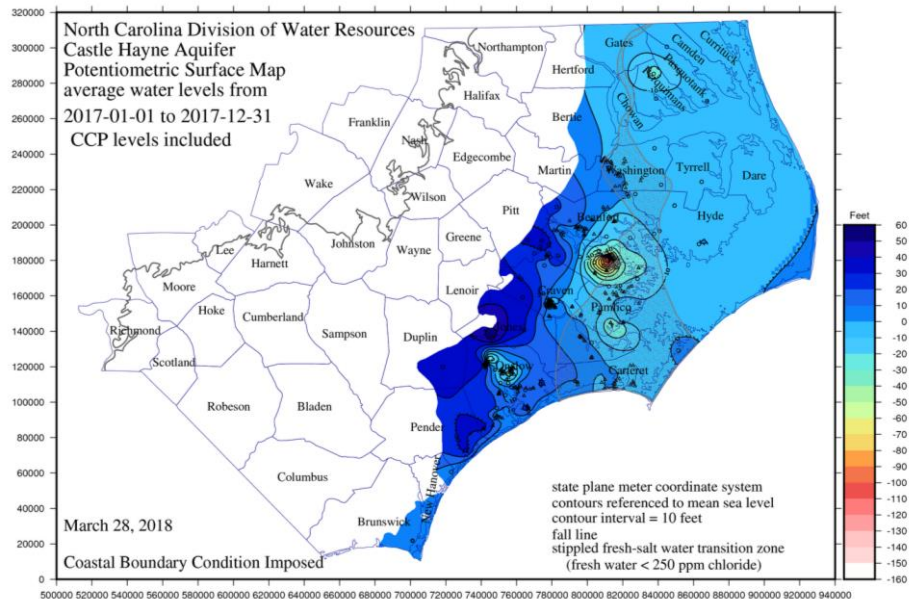
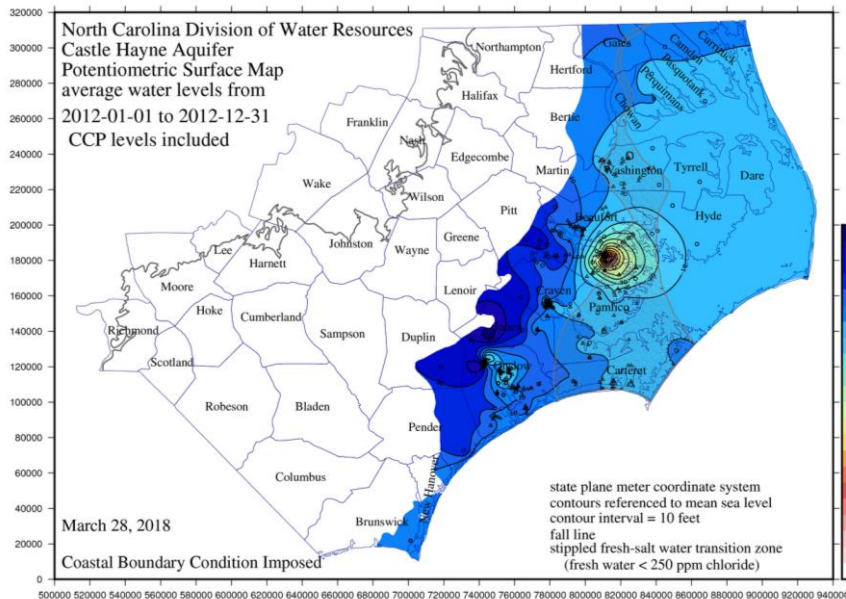
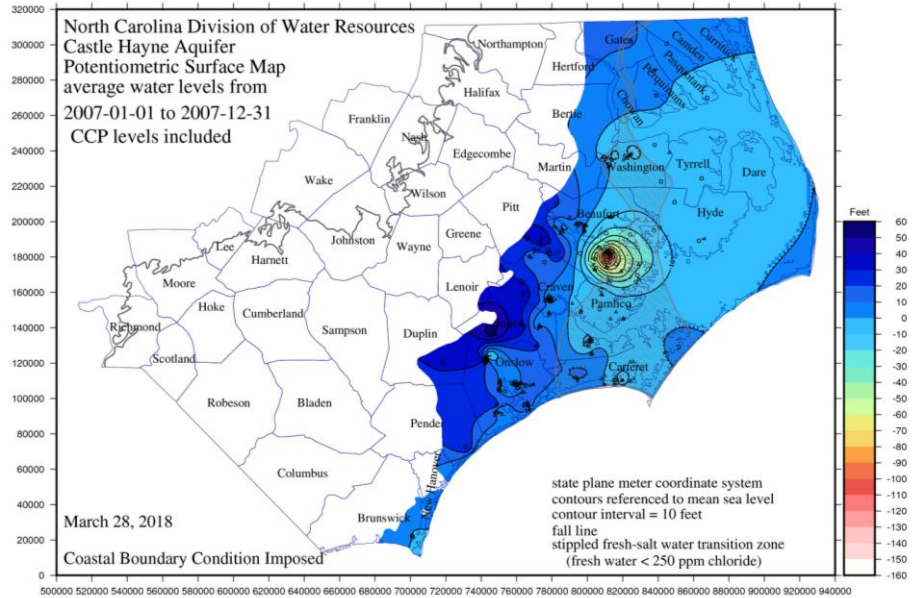
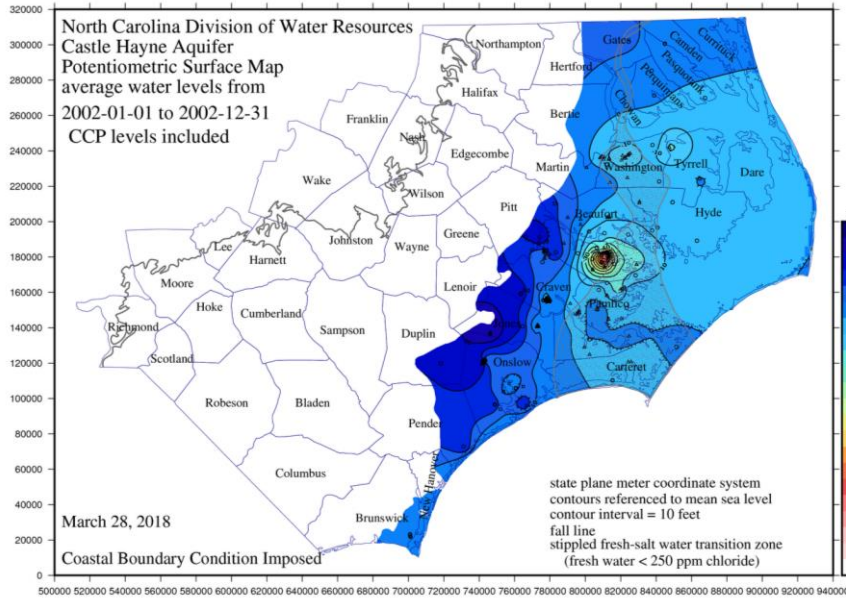
Black Creek Aquifer (2002, 2007, 2012 & 2017)



Peedee Aquifer (2002, 2007, 2012 & 2017)

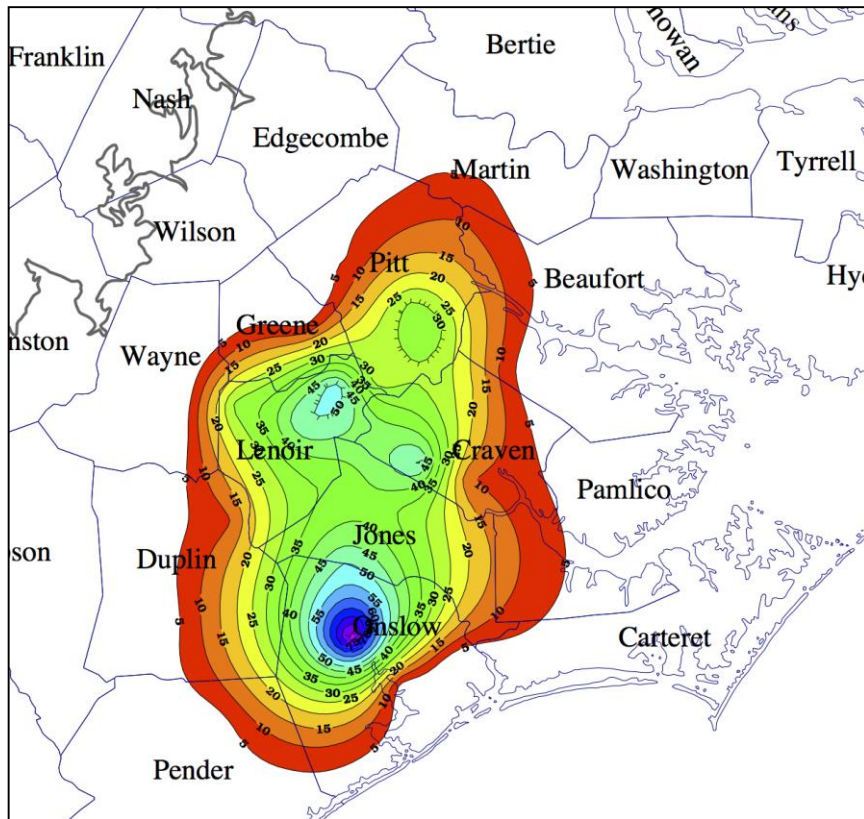


Castle Hayne Aquifer (2002, 2007, 2012 & 2017)

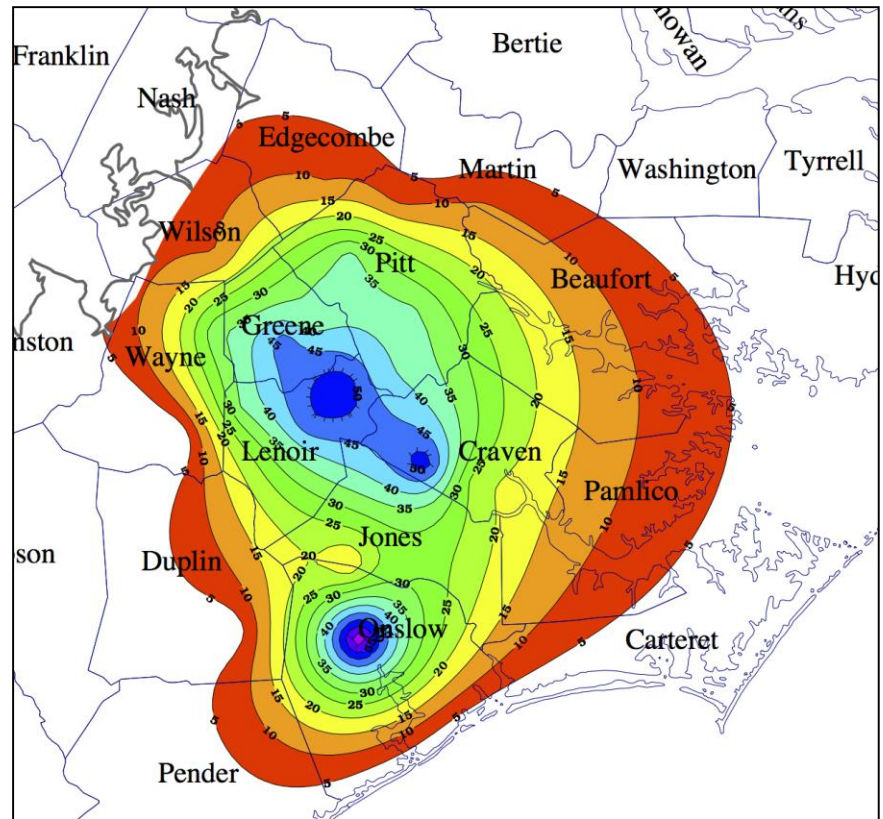


Cretaceous Aquifer Rebound

Nov 2007 through Nov 2017



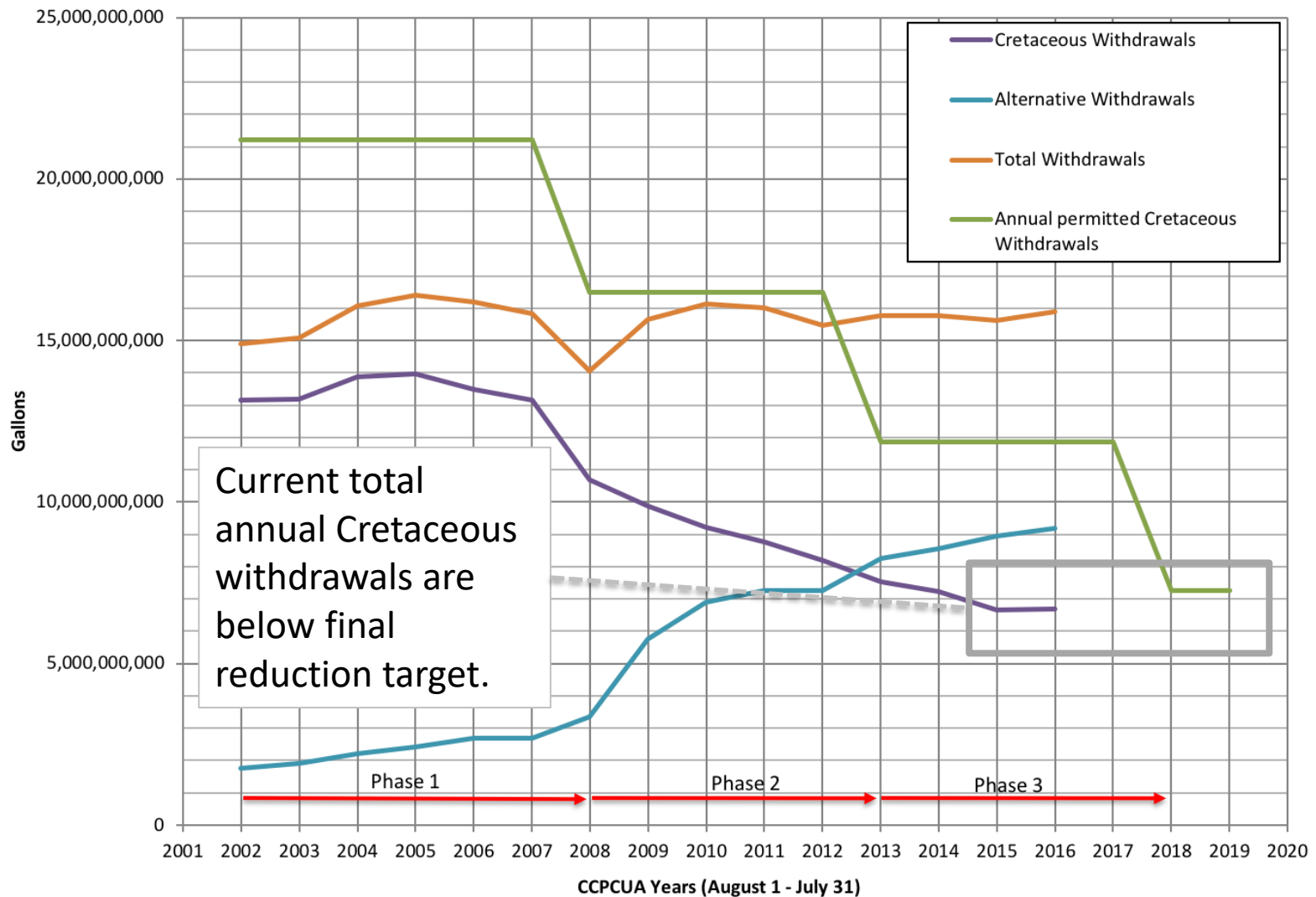
Black Creek Aquifer



Upper Cape Fear Aquifer

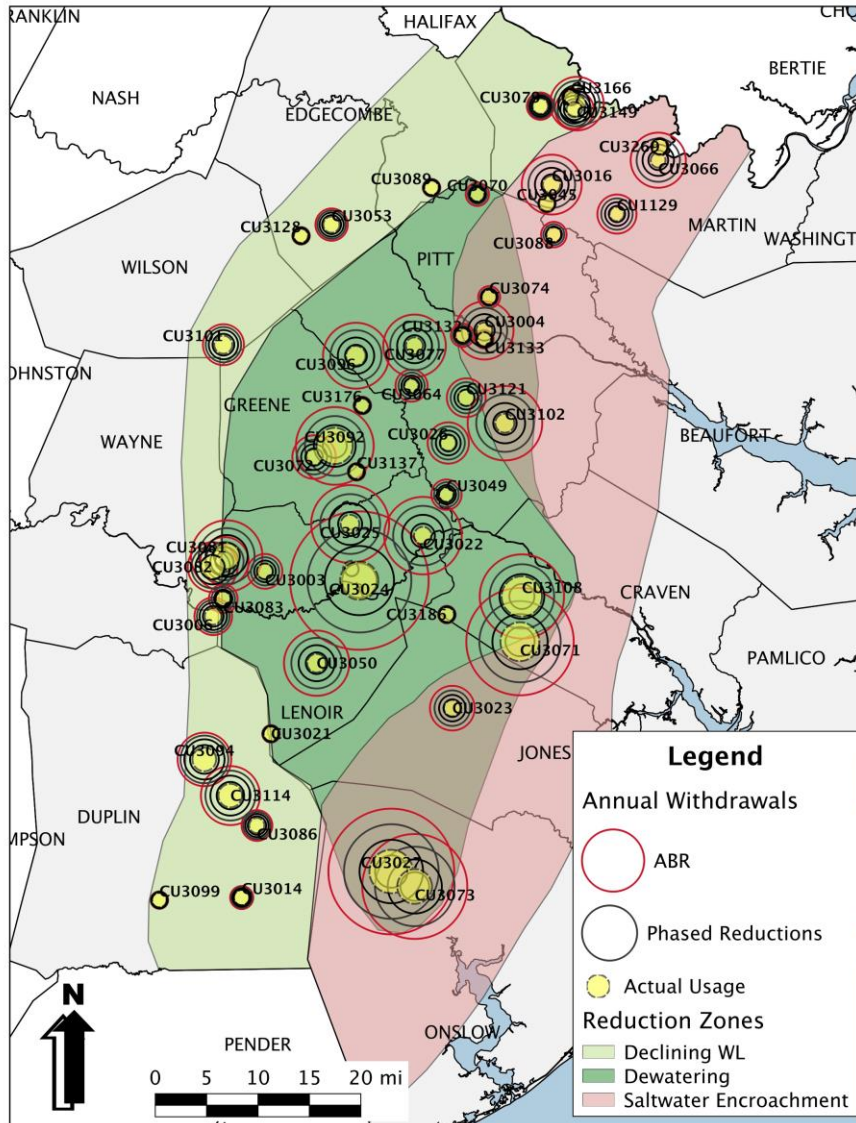
Annual Withdrawals

Yearly CCPCUA Withdrawals (.0503 permit holders)



Ground Water Level Improvements

CCPCUA Comparative Cretaceous Aquifer Withdrawals
Year 2016 (2016-08-01 thru 2017-07-31)



DWR 2018-01-10

- Data sources
 - Hydrographs
 - Potentiometric surface maps
 - Rebound maps
 - Comparative usage map
 - Annual withdrawals
- The center of the rebound area is stable
- A large portion of water demand has switched to other sources
- Overall withdrawal outside the saltwater encroachment zone appears to be sustainable

2013 Assessment Outcome

- As recommended by DWR, no action was taken by the EMC to change reduction zone boundaries or rule language.
- DWR began using temporary permits where aquifer conditions meet specific requirements. Nine are issued.
- Temporary permits allowed relaxation of reduction standards for individual permit holders where we're seeing sustainable aquifer use.
- Temporary permit status can be removed if aquifer conditions don't continue to meet criteria and permit holder would be held to reduction schedule withdrawals.

2018 Recommendation

- Public notice of the 2018 CCPCUA Assessment was mailed and draft report became available on our website on April 18, 2018.
- Over 1,400 document downloads occurred in the succeeding weeks, but no comments have been received.
- Based on our assessment, no action needs to be taken by the EMC to change the CCPCUA reduction zone map or reduction percentages.

