



# Surface Water Quality Resource Assessments



## Georgia's **State Water Plan**

[www.georgiawaterplanning.org](http://www.georgiawaterplanning.org)



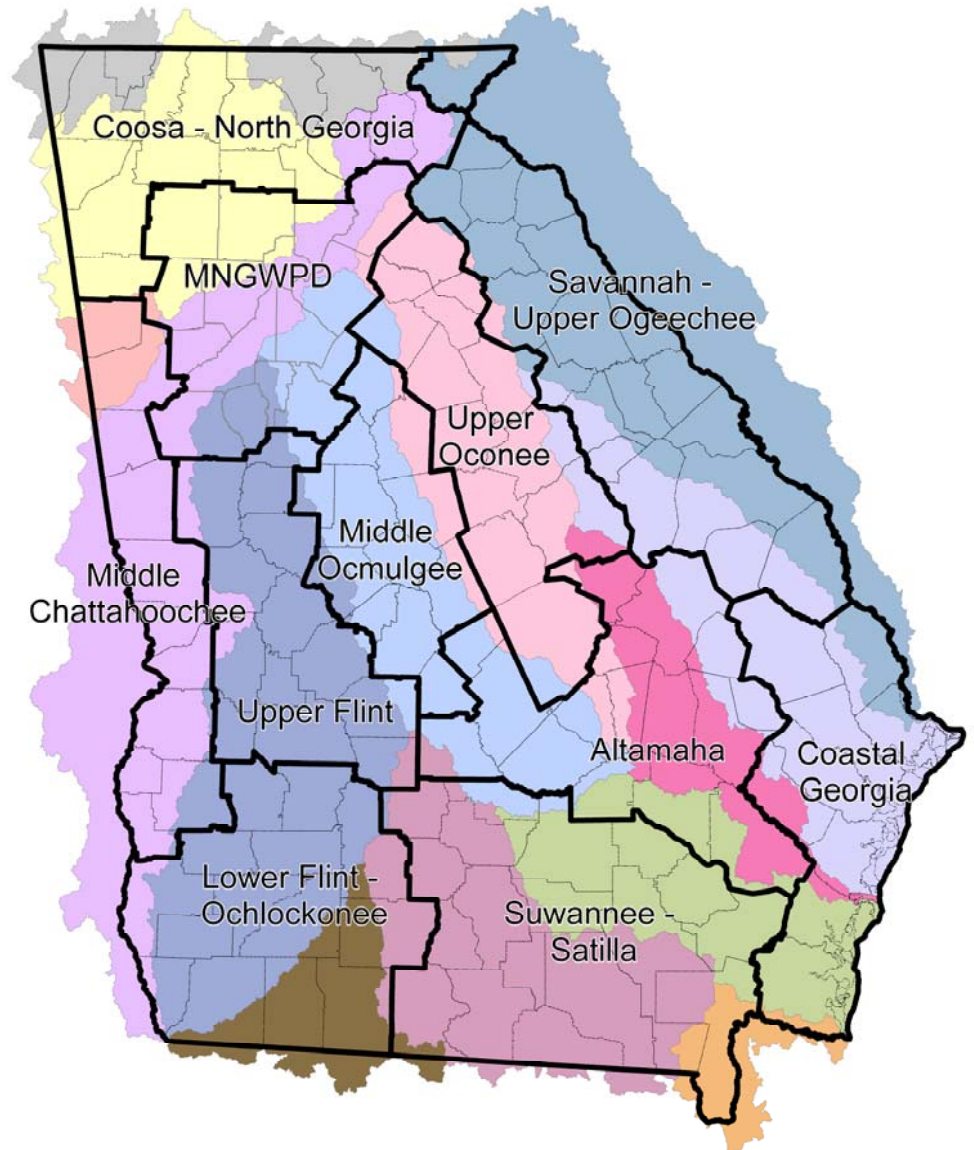
# Presentation Overview

- Overview of Results
- Process
- Detailed Results

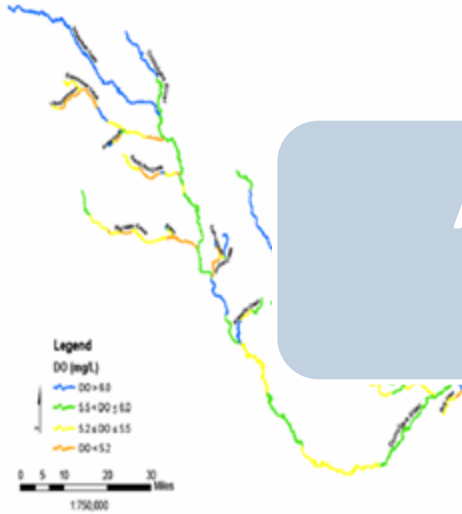


# River Basins

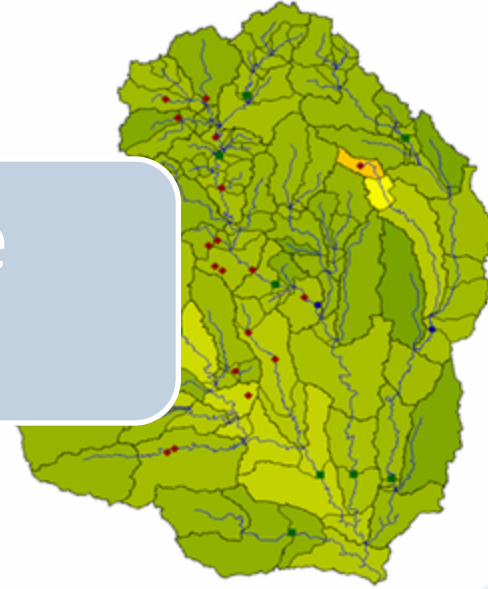
- Flint River Basin
- Ochlockonee River Basin
- Chattahoochee River Basin
- Suwannee River Basin



DOSAG Results for the Ocrúgee River and Tributaries



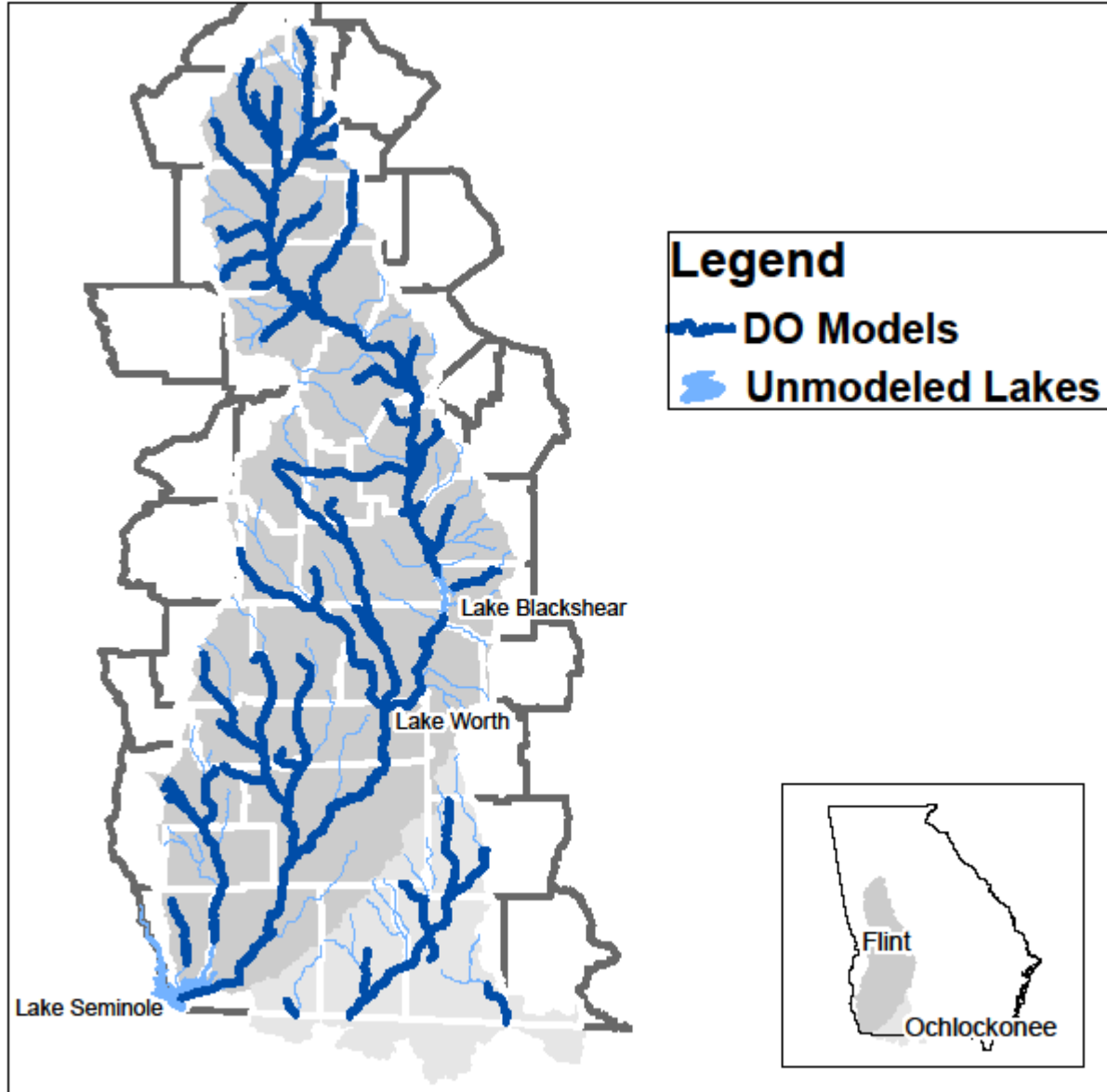
Assimilative  
Capacity



Dissolved Oxygen

Nutrients

# Flint and Ochlockonee Modeled Streams





# Data Input

- Streamflow
- Stream Monitoring
- Wastewater Discharge
- Water Withdrawal
- Land Application Systems
- Weather
- Landuse
- Stream Hydrology
- Topography
- Water Quality Standards



# Methodology

- Models are run at “critical conditions” with the dischargers at their current discharge levels
- Watershed models account for both wastewater discharges and storm water runoff from various land uses
- Lake models look at the impacts of nutrients
- Models identify “unacceptable impacts”
  - not meeting state standards for dissolved oxygen and/or nutrients
- Not directly tied to impaired waters or total maximum daily loads (TMDLs)



# Checking the Model

- Discussions with the Scientific and Engineering Advisory Panel (SEAP)
- Calibrated the model to real world data
  - Streamflow
  - EPD Sampling Data
  - Wet and Dry Years



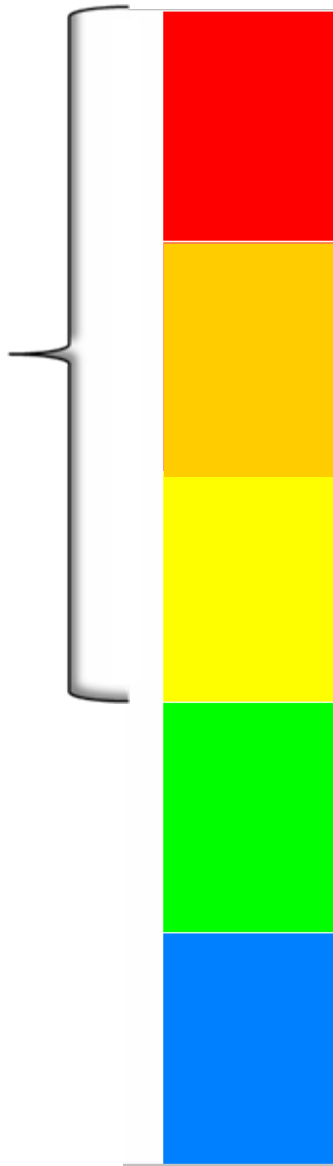


# Dissolved Oxygen Standards

- Freshwater Cold Water Fishing (Trout) Dissolved Oxygen Standard
  - Daily average of 6.0 mg/L
  - Not less than 5.0 mg/L
  
- Freshwater Warm Water Fishing Dissolved Oxygen Standard
  - Daily average of 5.0 mg/L
  - Not less than 4.0 mg/L
  
- Naturally Low Dissolved Oxygen Permitting Policy
  - Allows for a 10% deficit to 3.0 mg/L and then allows for a 0.1 mg/L deficit

# Dissolved Oxygen Results

Available  
DO in  
Naturally  
Low DO  
Streams



$\leq 0.0$  mg/L DO available for assimilative capacity  
None or exceeded capacity

$> 0.0$  mg/L to  $\leq 0.2$  mg/L of DO available  
Limited

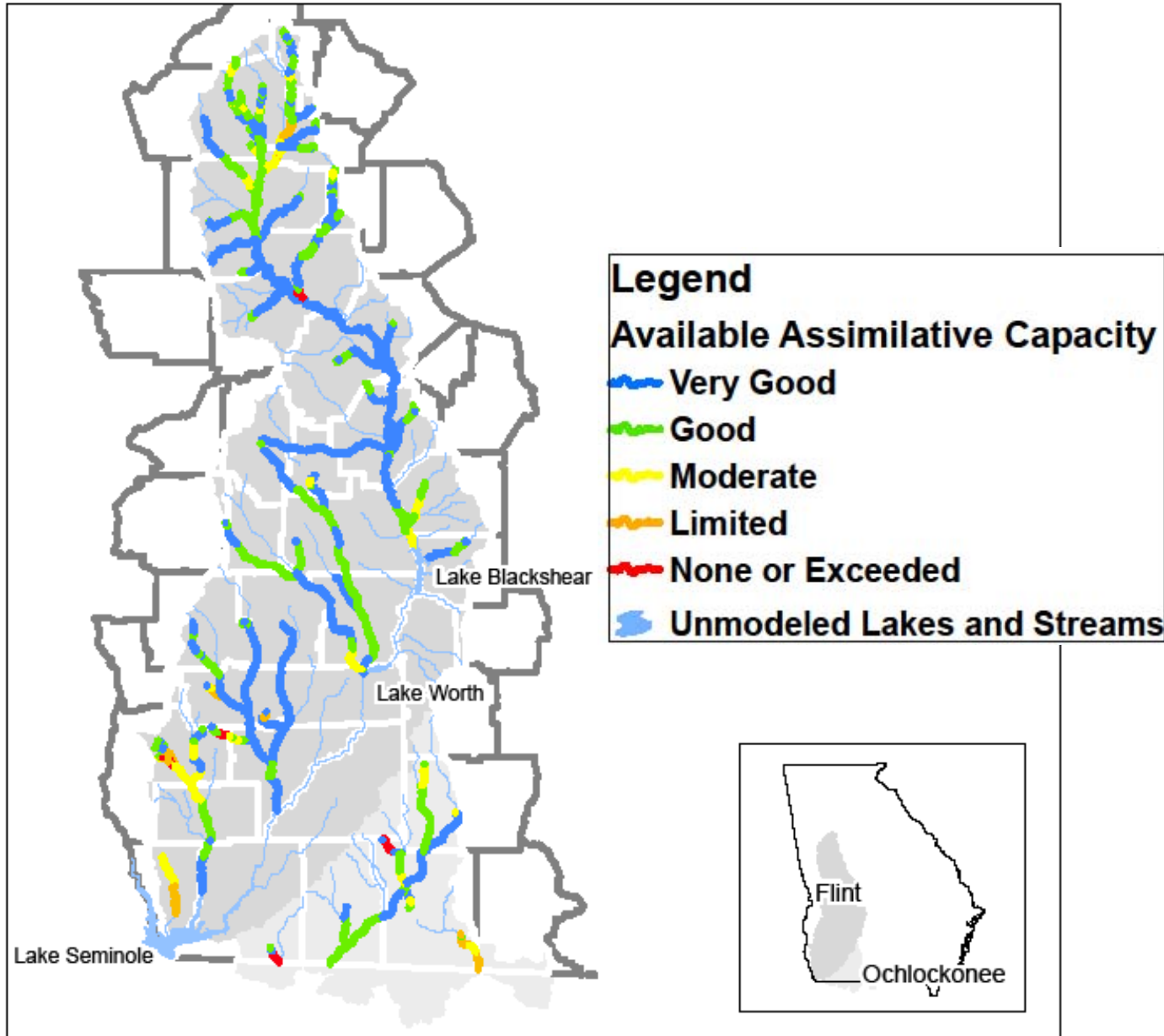
$> 0.2$  mg/L to  $\leq 0.5$  mg/L of DO Available  
Moderate

$> 0.5$  mg/L to 1.0 mg/L of DO Available  
Good

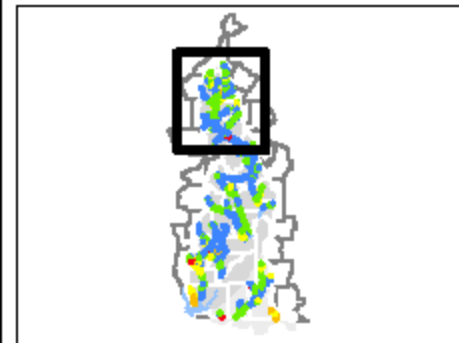
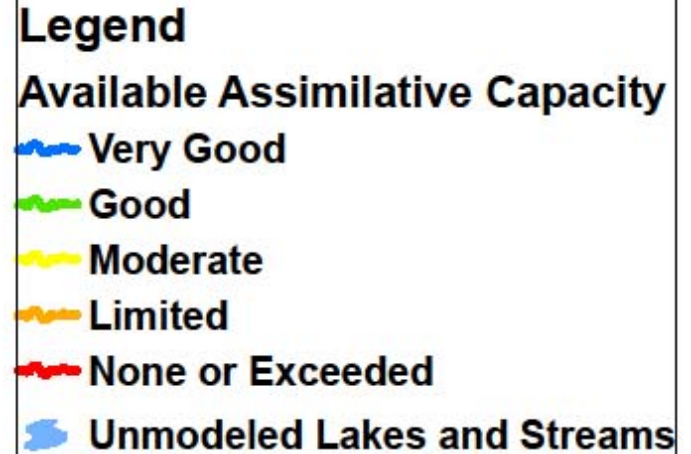
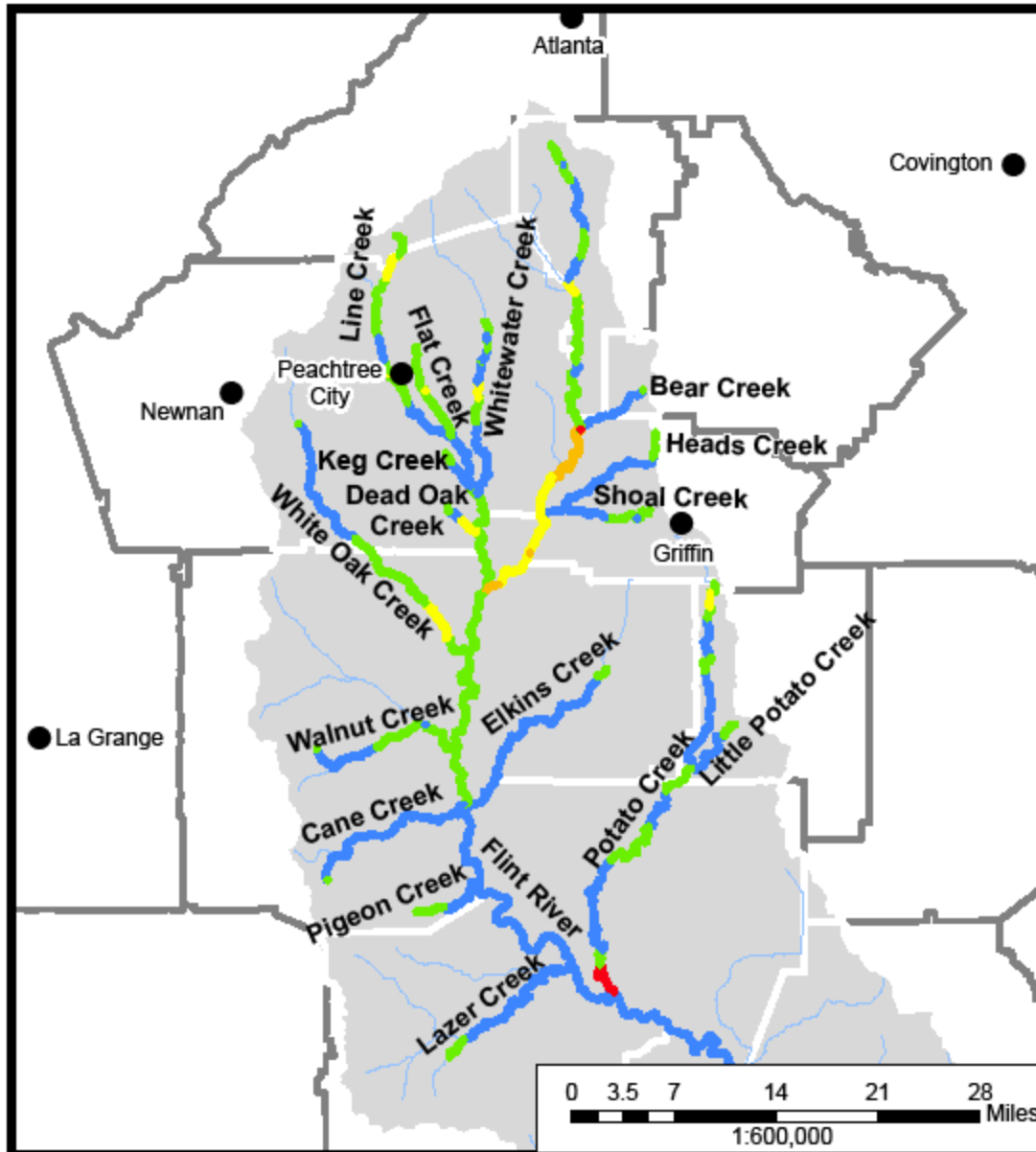
$\geq 1.0$  mg/L of DO available  
Very Good



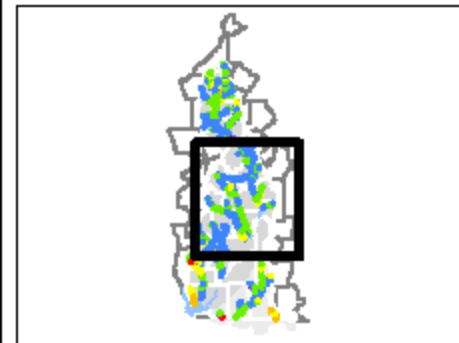
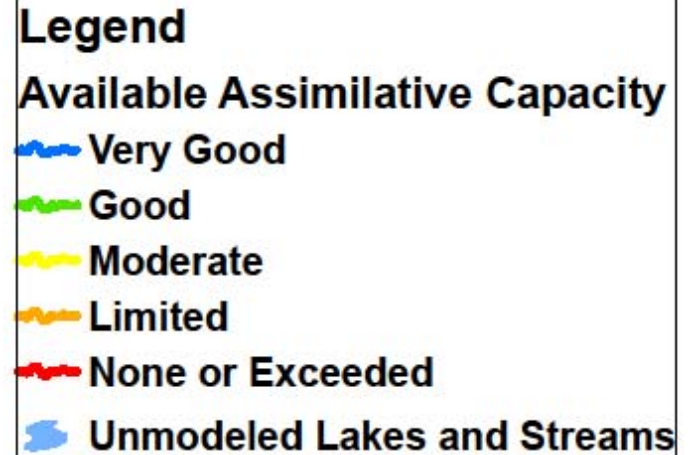
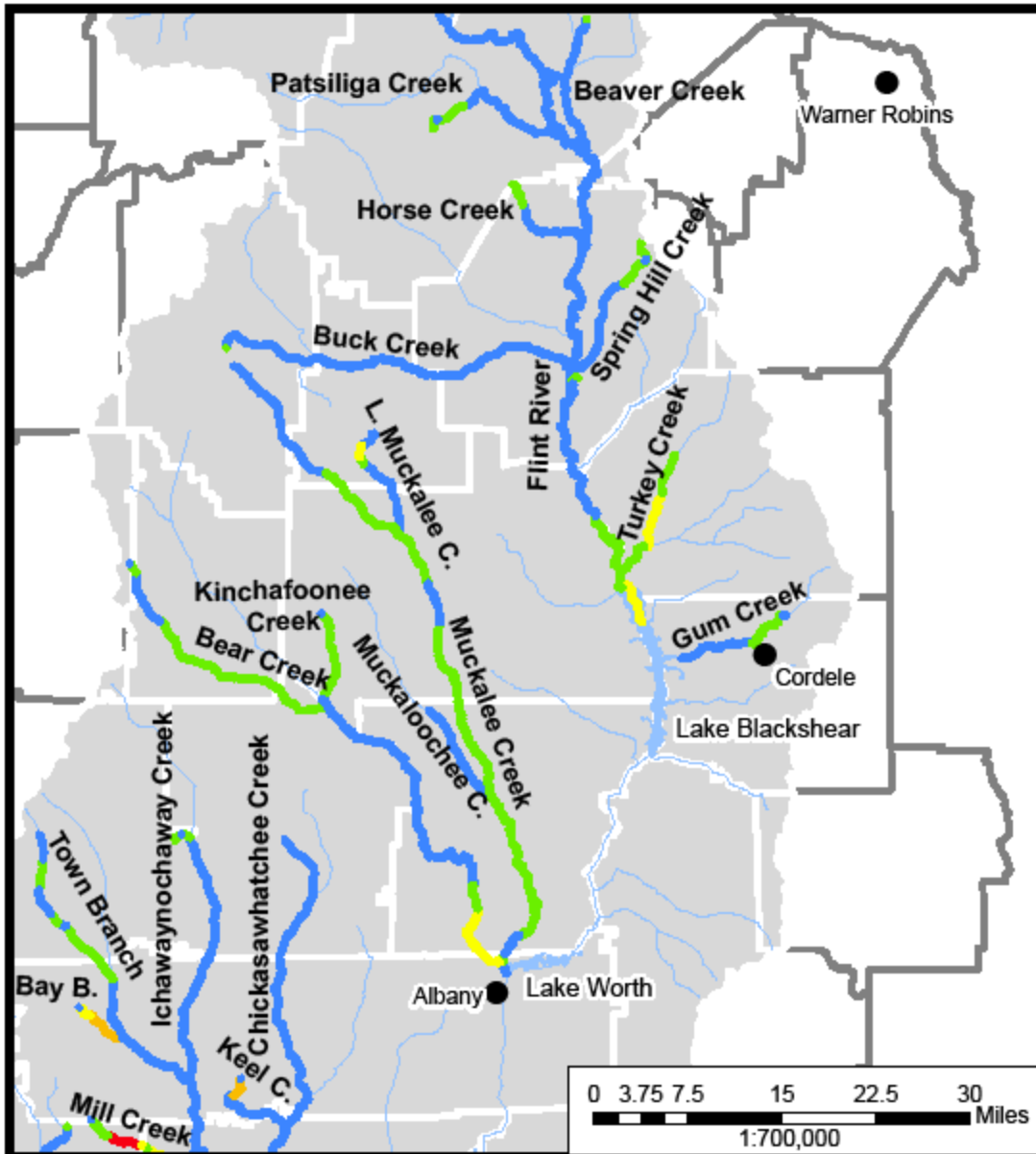
# Flint Ochlockonee Model Results



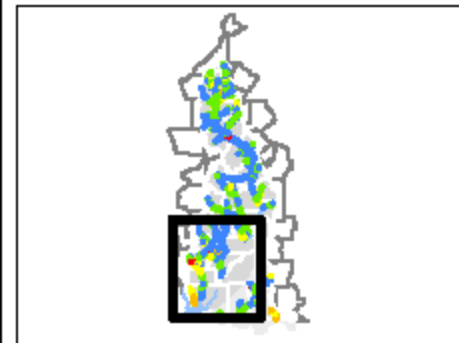
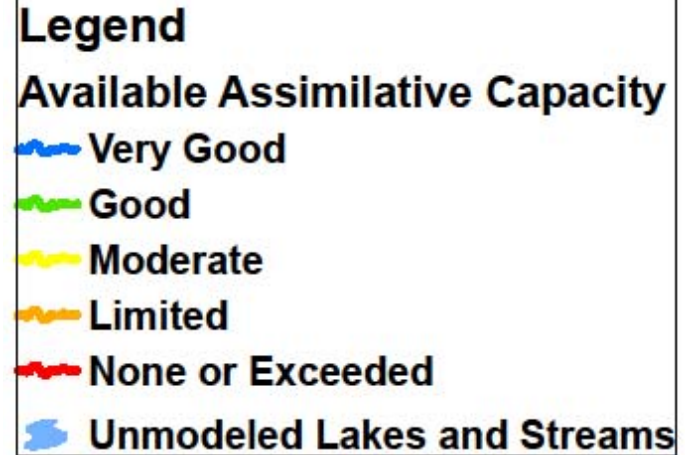
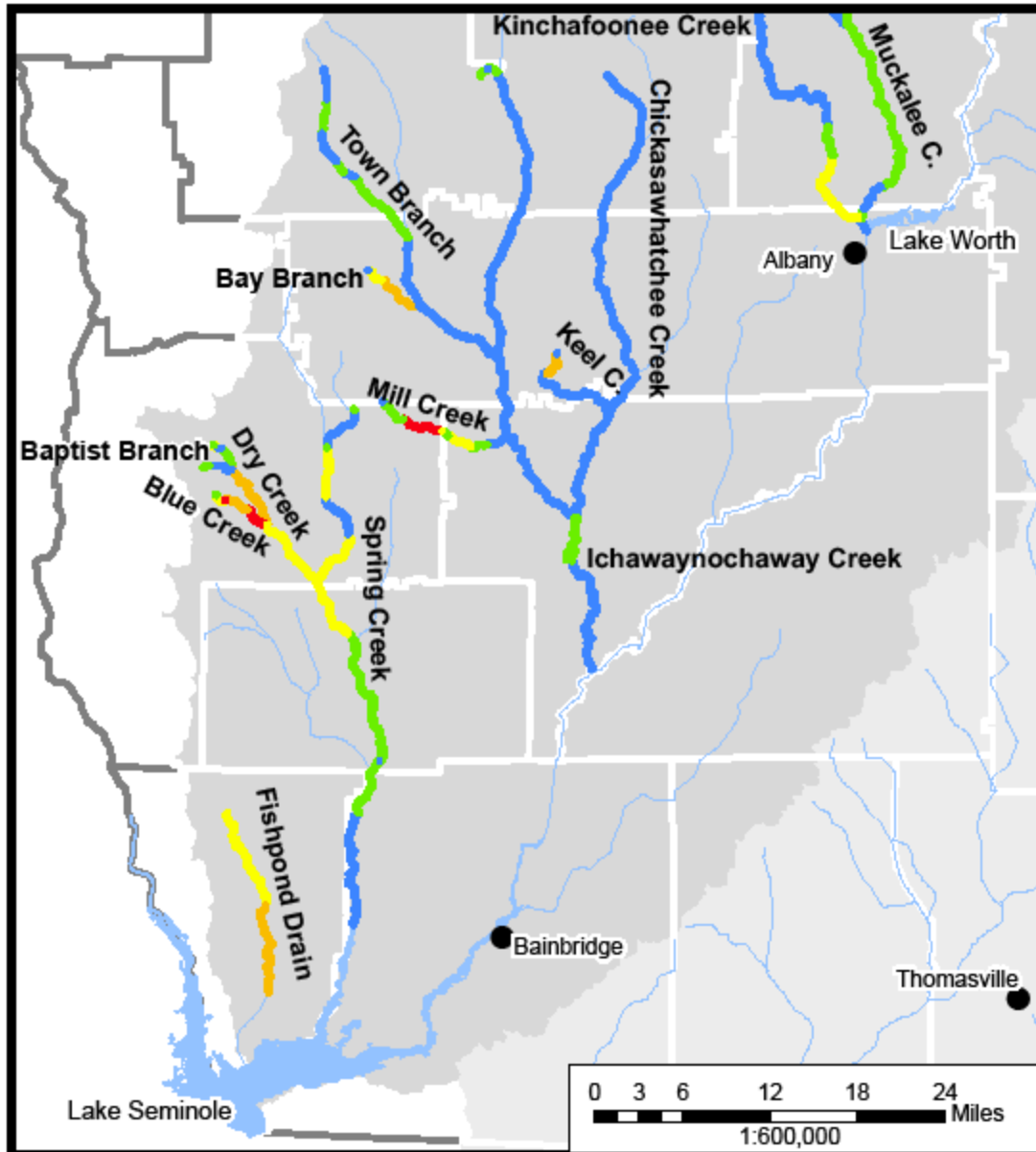
# Flint Model Results



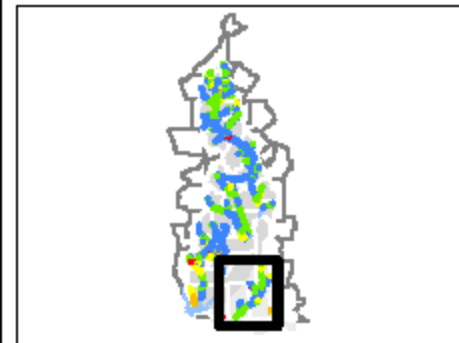
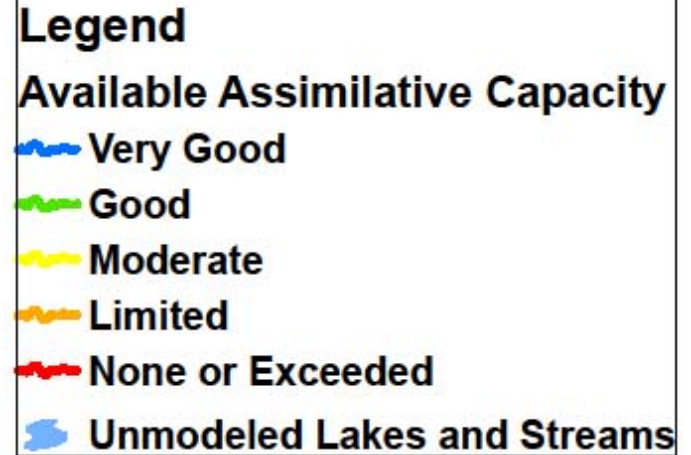
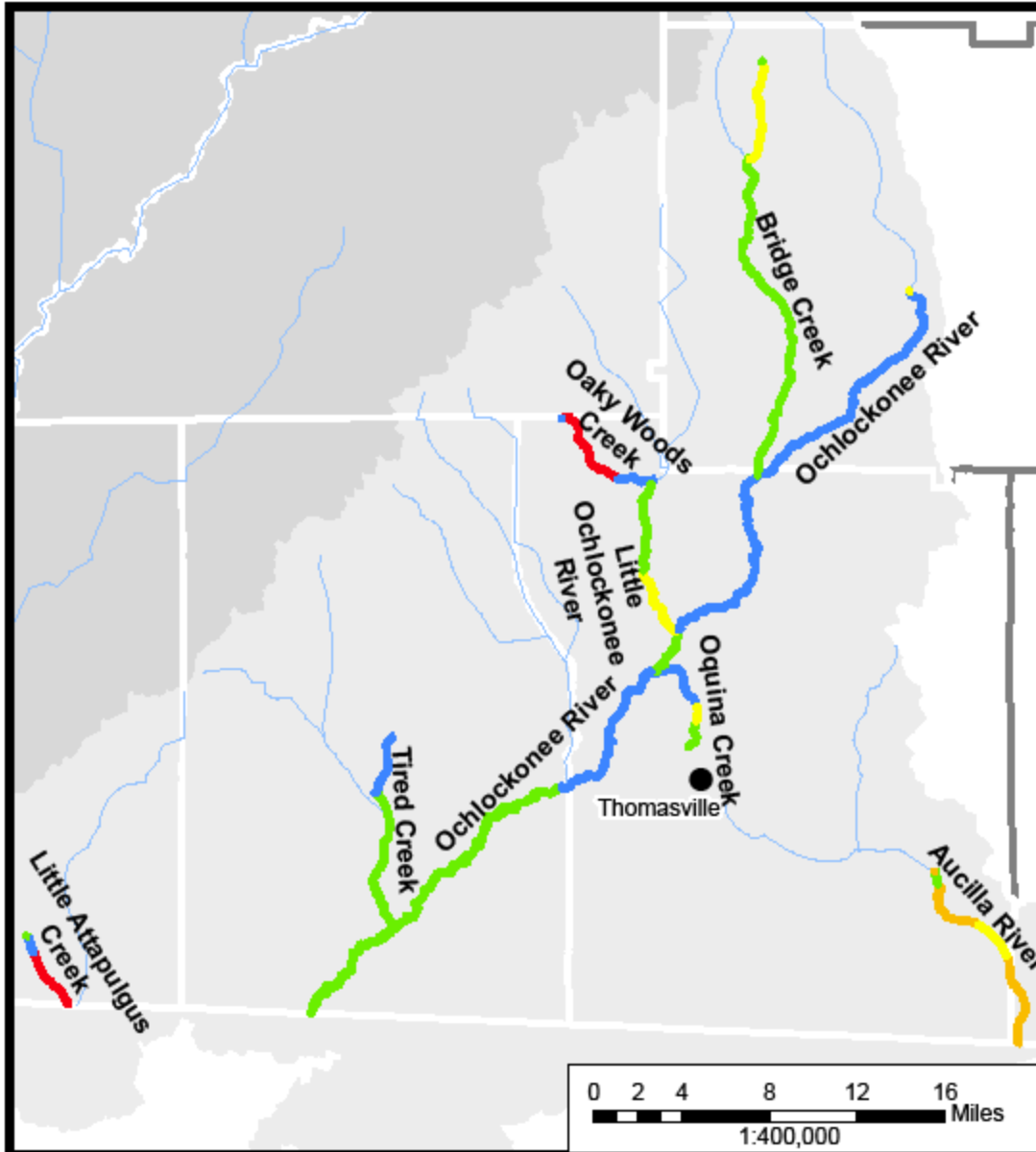
# Flint Model Results



# Flint Model Results



# Ochlockonee Model Results





# Future Work to be done

- Flint Watershed Model for nutrients (Nov 2010)
- Flint River Model for nutrients and DO (Nov 2010)
- Lake Blackshear Model for nutrients (Nov 2010)
- Lake Worth/Chehaw Model for nutrients (Nov 2010)



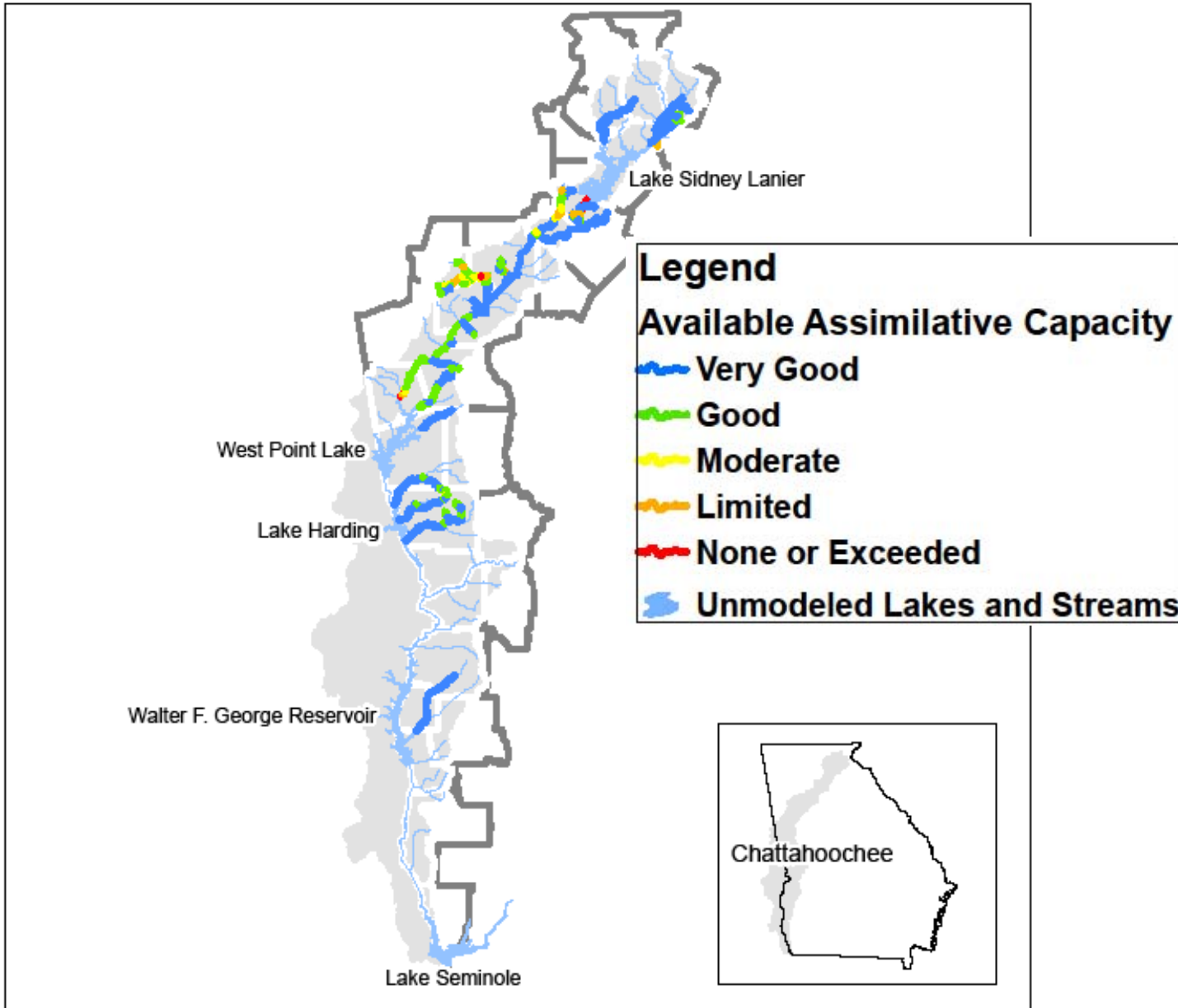


# Council Considerations

- Florida nutrient standards
- Significant Natural Resource Waters
  - Increase the level of protection on a waterbody

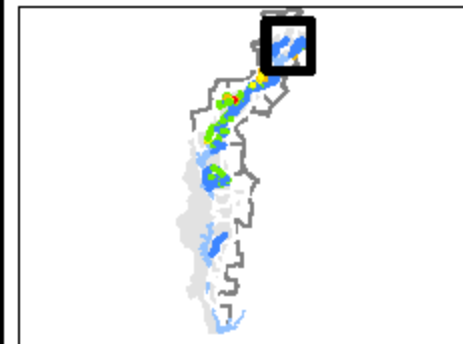
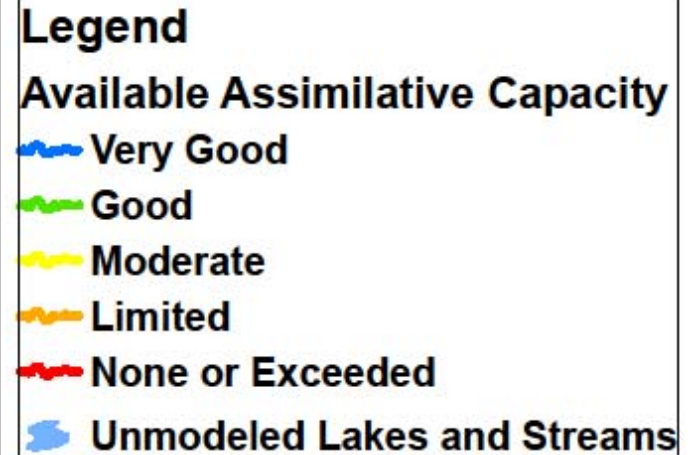
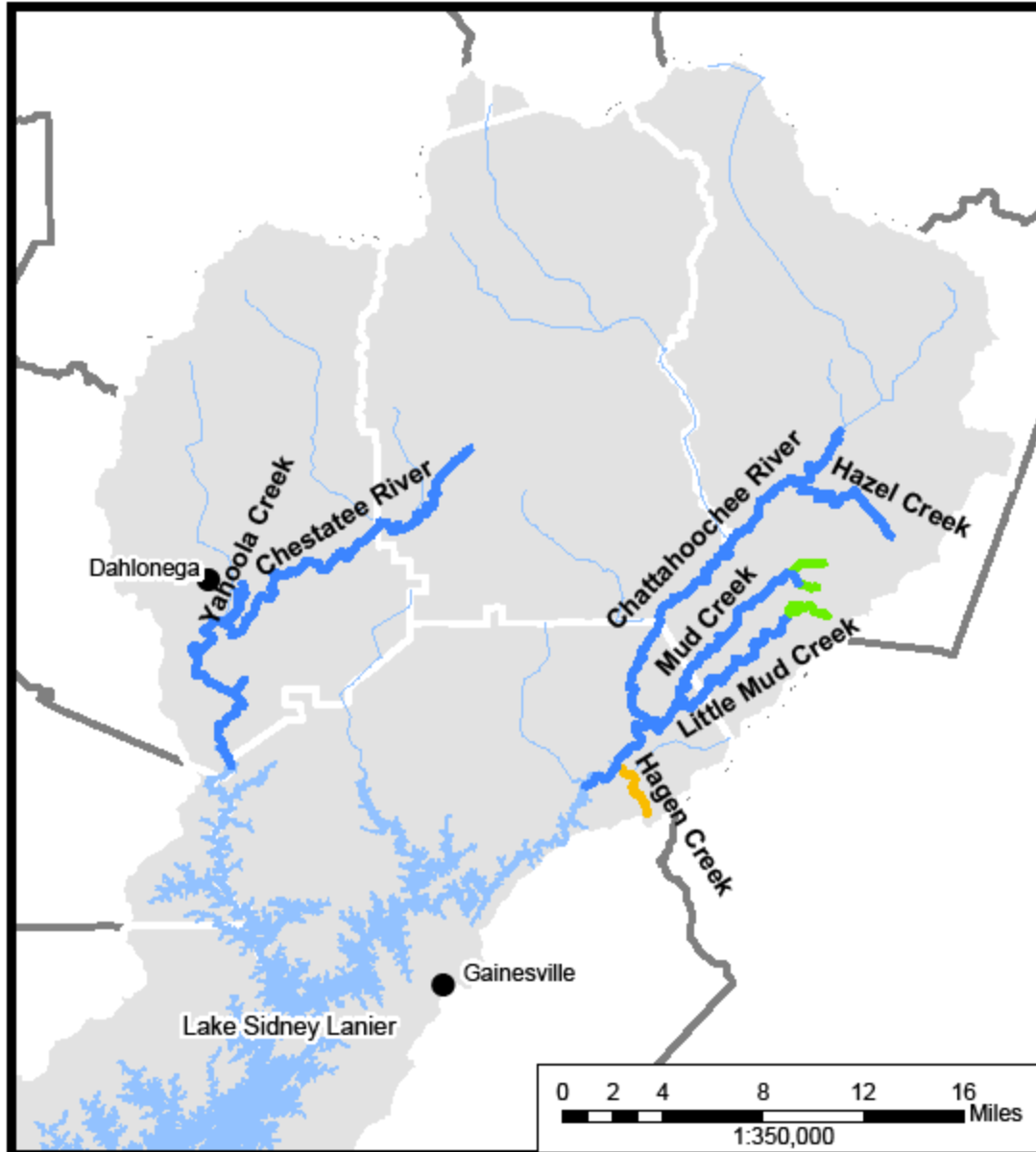


# Chattahoochee Model Results



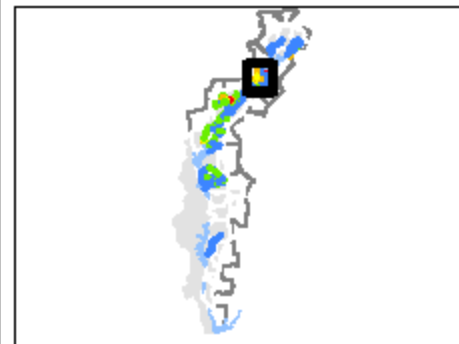
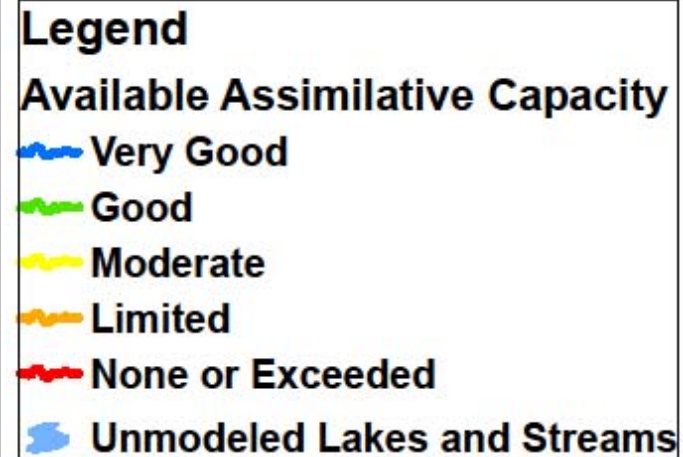
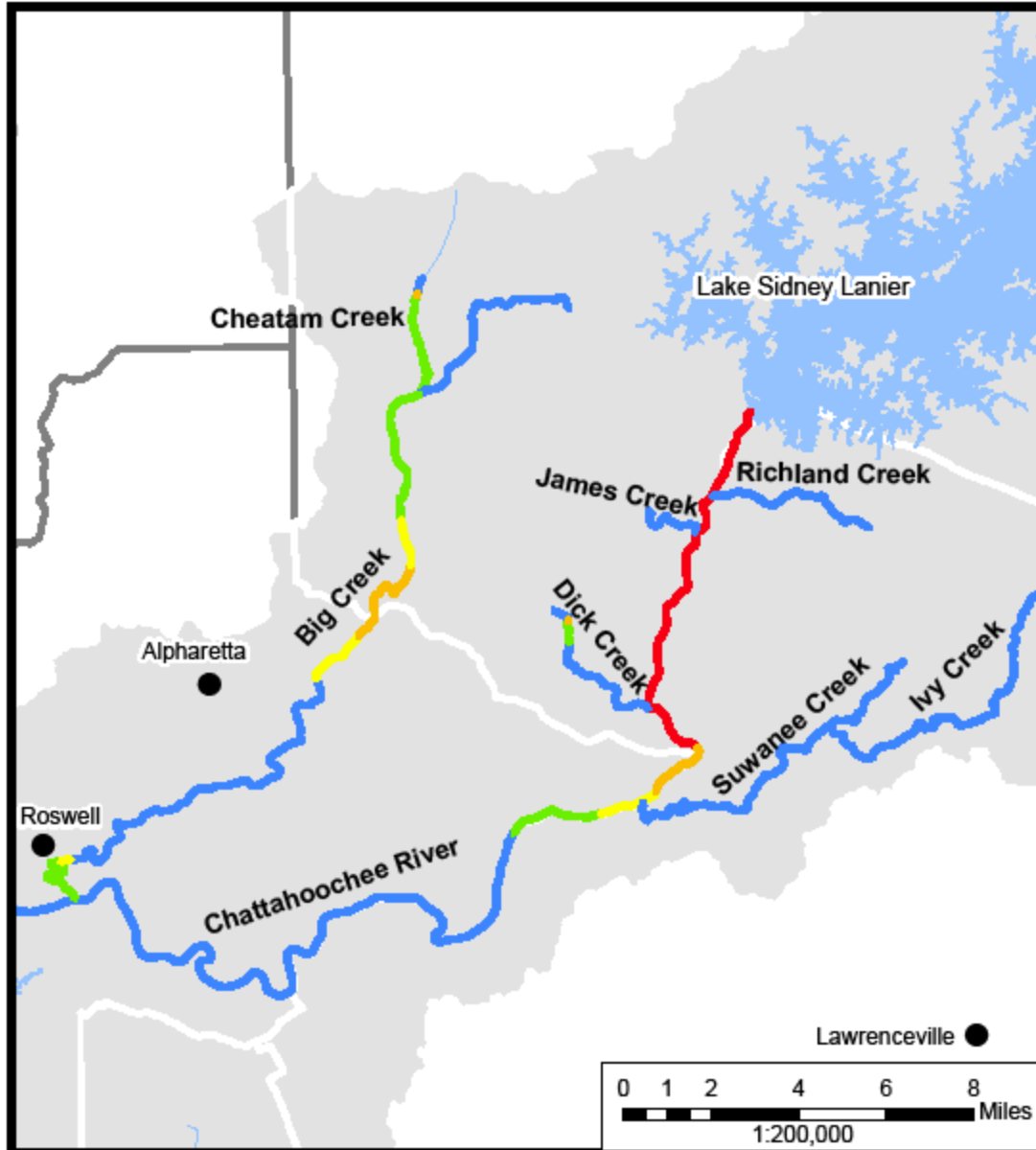


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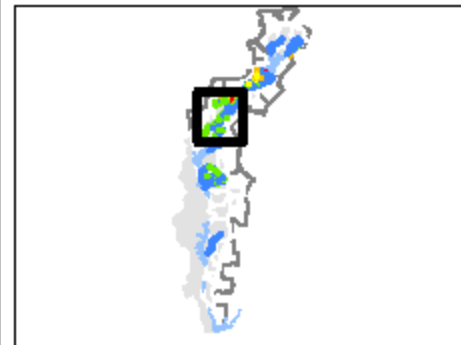
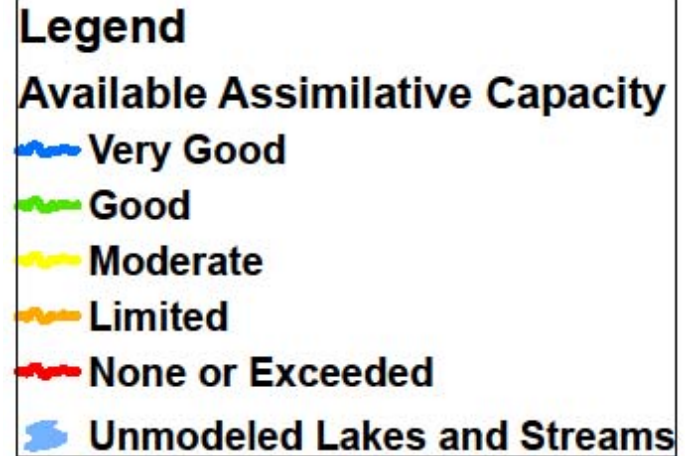
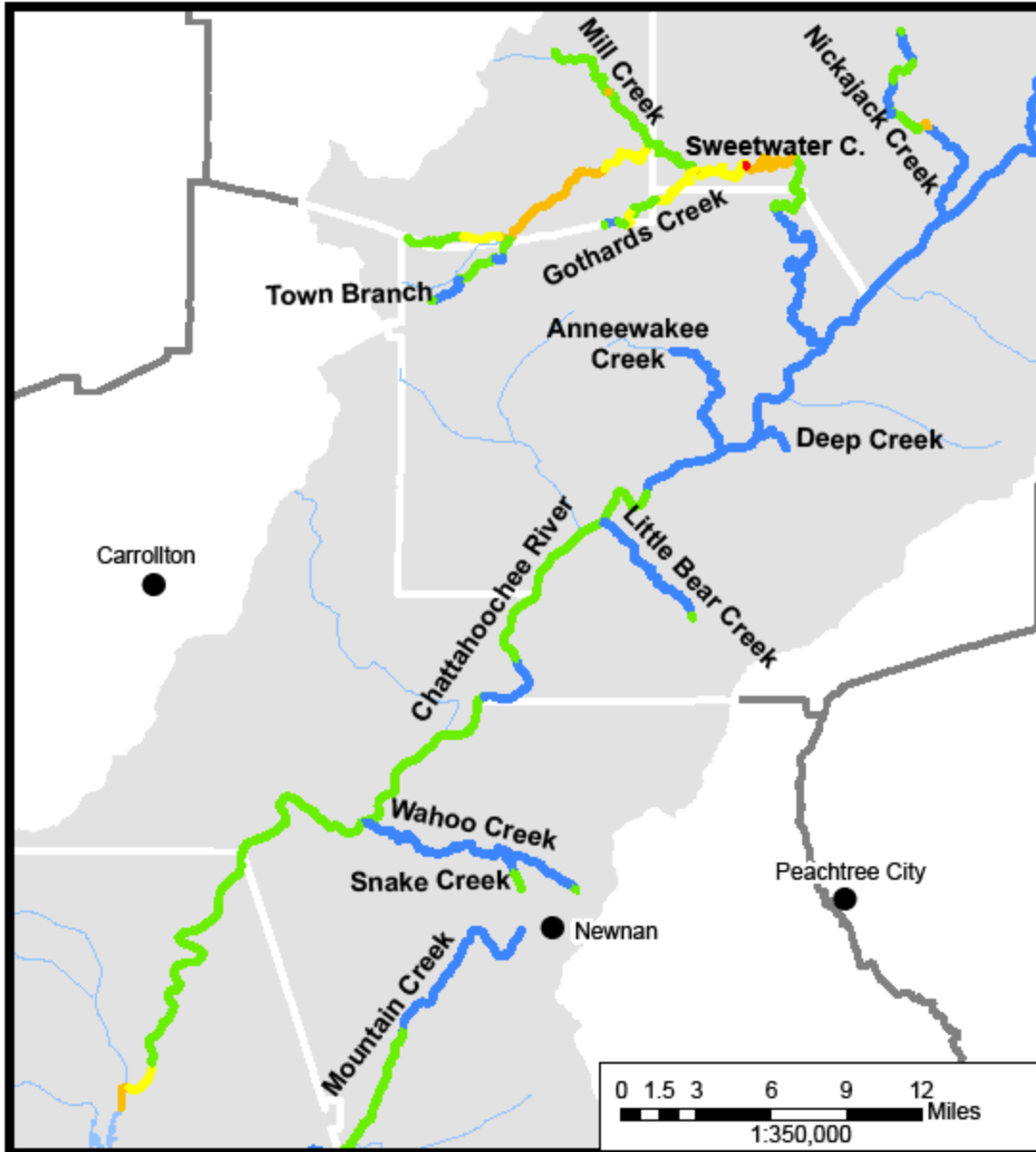


# Chattahoochee Model Results



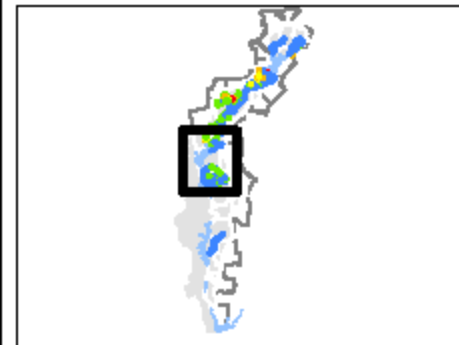
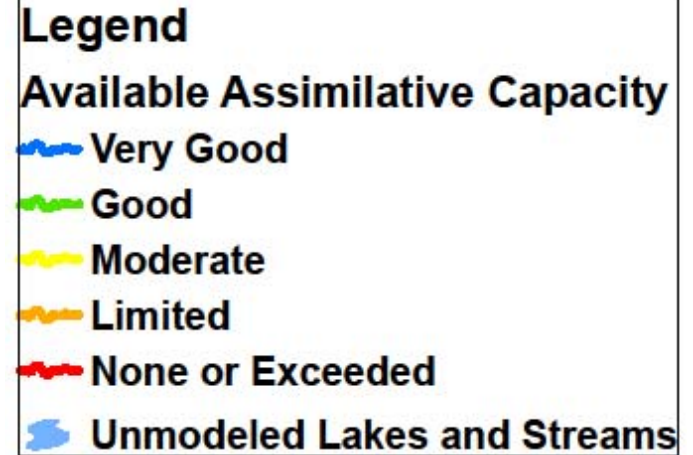
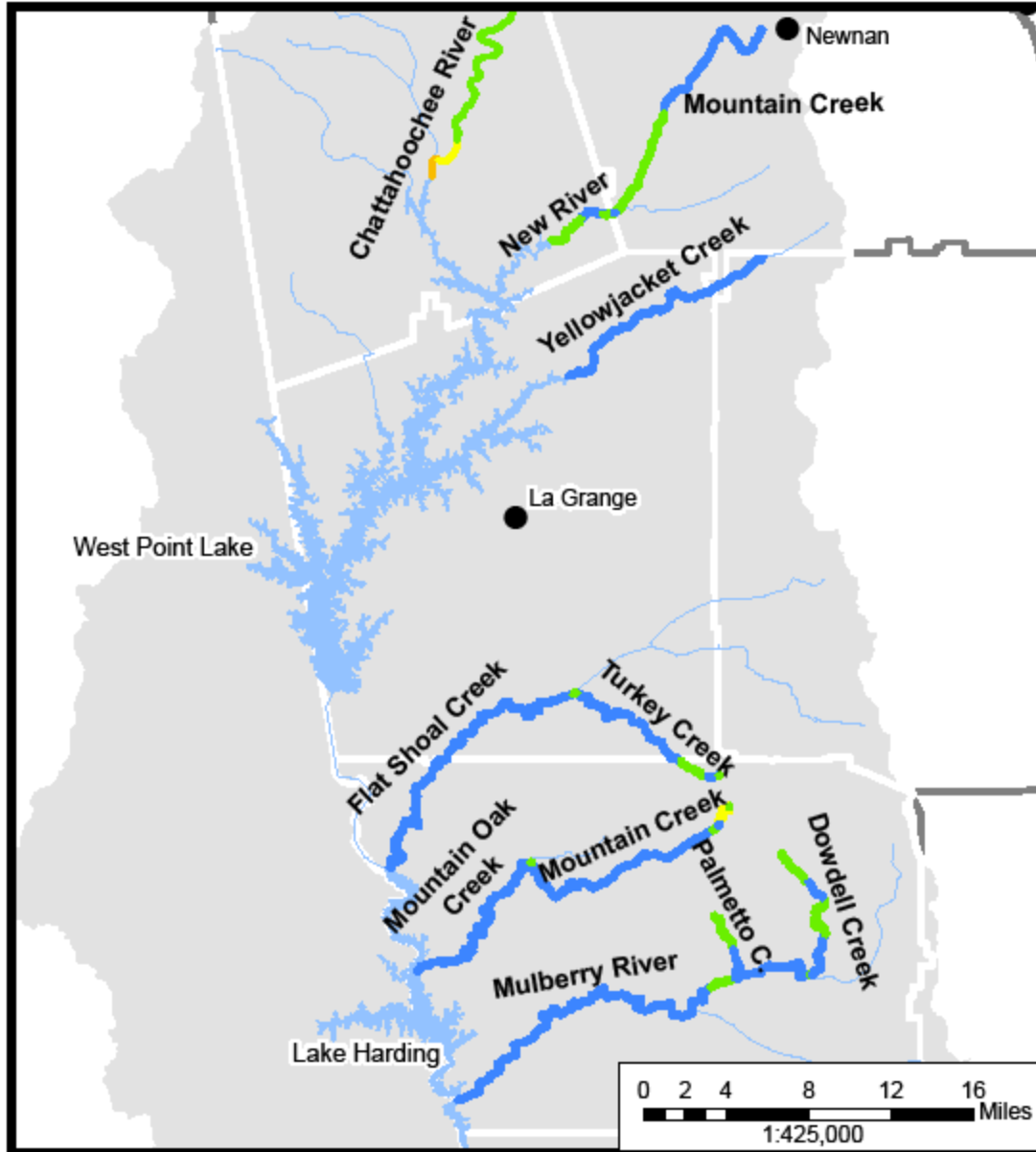


# Chattahoochee Model Results



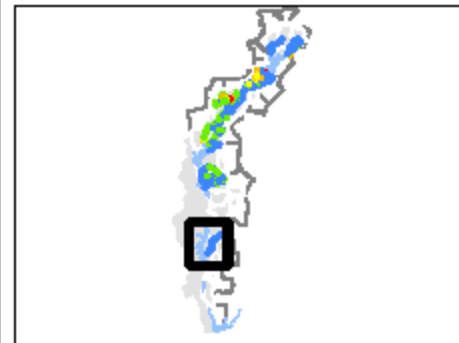
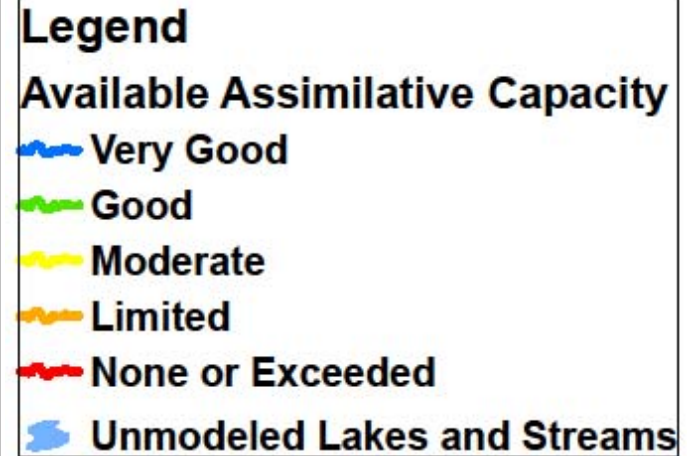


# Chattahoochee Model Results





# Chattahoochee Model Results





# Future Work to be done

- Upper Chattahoochee Watershed Model for nutrients being developed for the Lake Lanier TMDL (Fall 2010)
- Lake Lanier Model for nutrients being developed for the Lake Lanier TMDL (Fall 2010)





# Future Work to be done

- Chattahoochee Watershed Models for nutrients (Nov 2010)
- Chattahoochee River Models lower sections for nutrients and DO (Nov 2010)
- Lake models for nutrients (Nov 2010)
  - West Point Lake
  - Lake Walter F. George
  - Lake Seminole

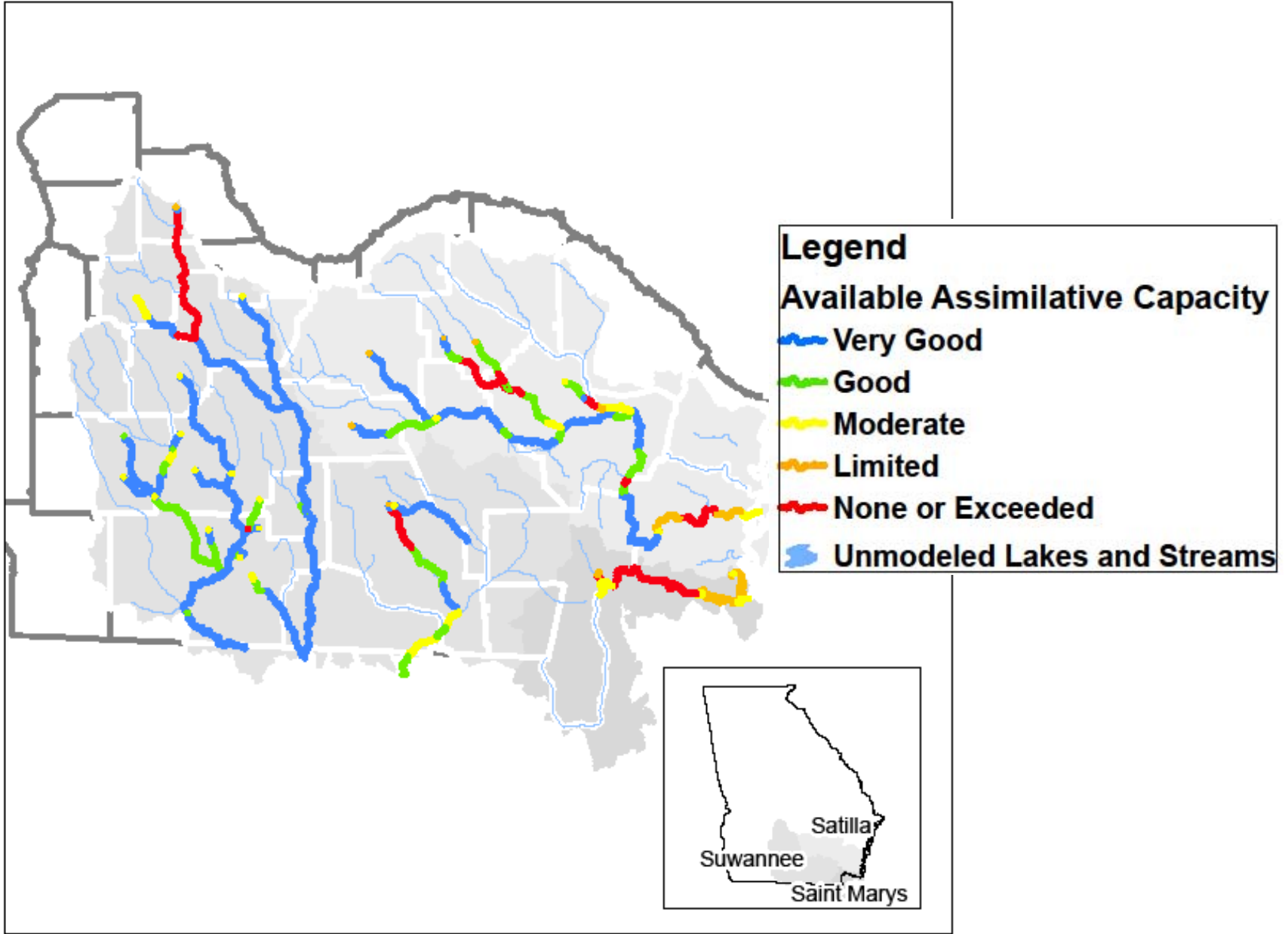


# Council Considerations

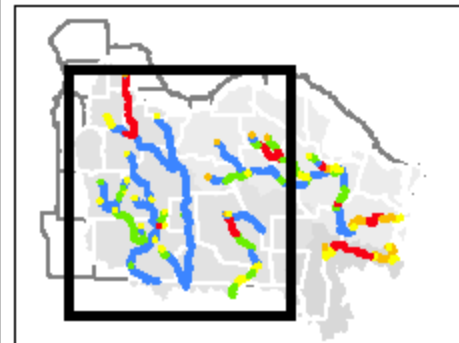
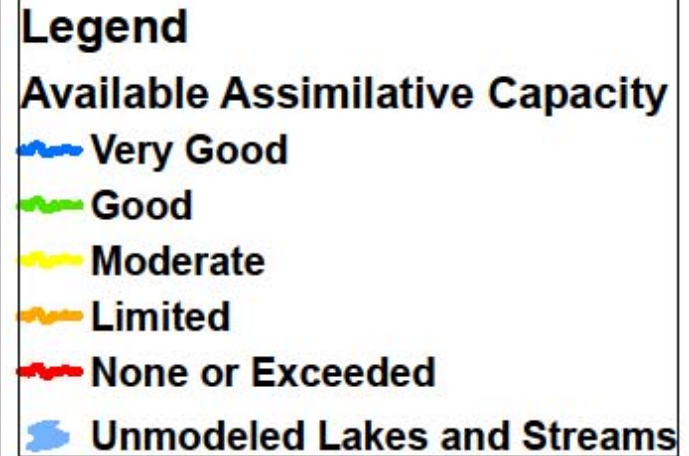
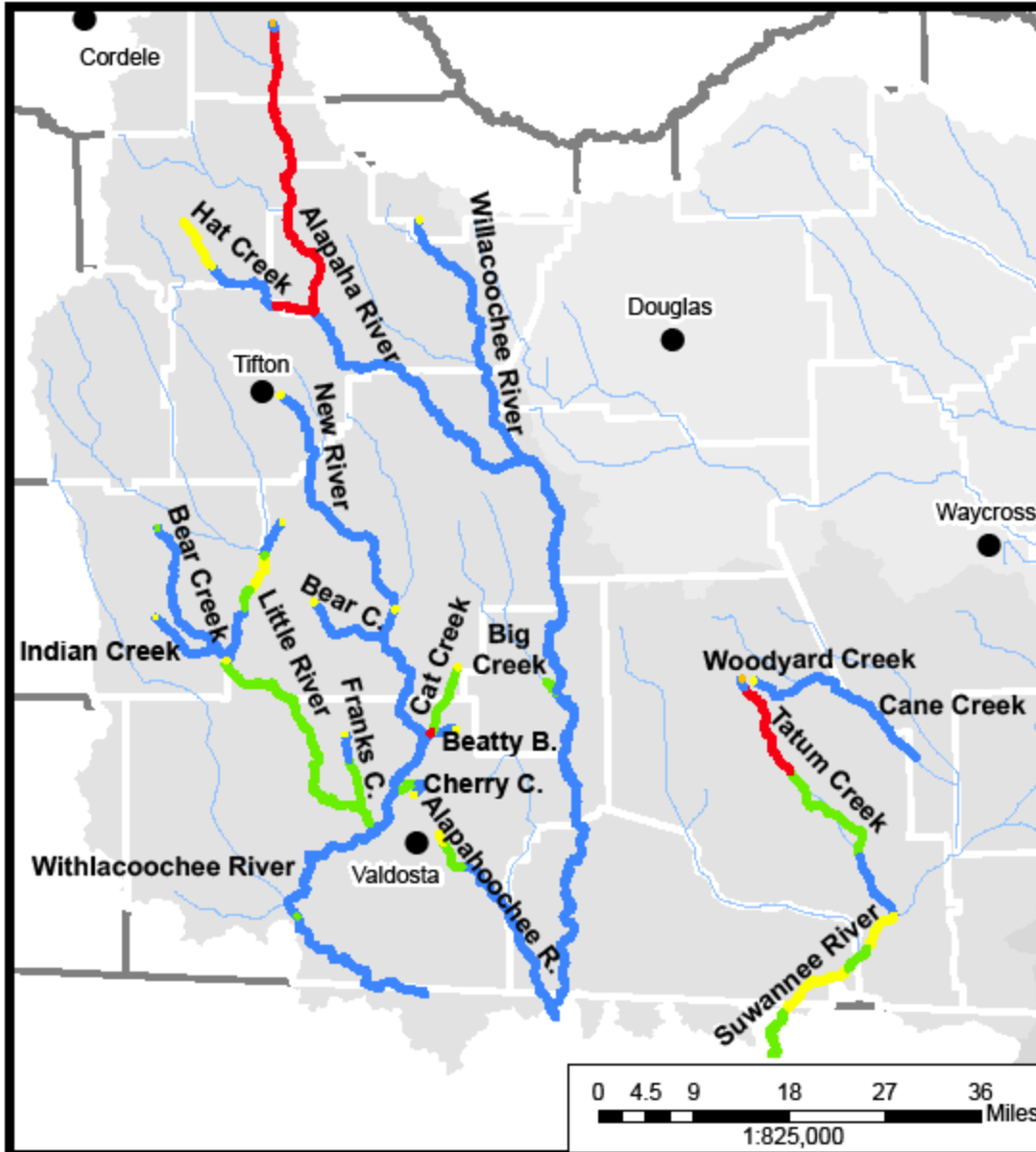
- Nutrients
  - Lake Lanier TMDL
  - Florida nutrient standards
- Discharges into trout streams and their heat loads
- Significant Natural Resource Waters
  - Increase the level of protection on a waterbody



# Satilla, St. Mary's, and Suwannee Model Results



# Suwannee Model Results





# Council Considerations

- Florida nutrient standards
- Significant Natural Resource Waters
  - Increase the level of protection on a waterbody

# Resource Assessment Process

