



Surface Water Quality Resource Assessments



Georgia's **State Water Plan**

www.georgiawaterplanning.org



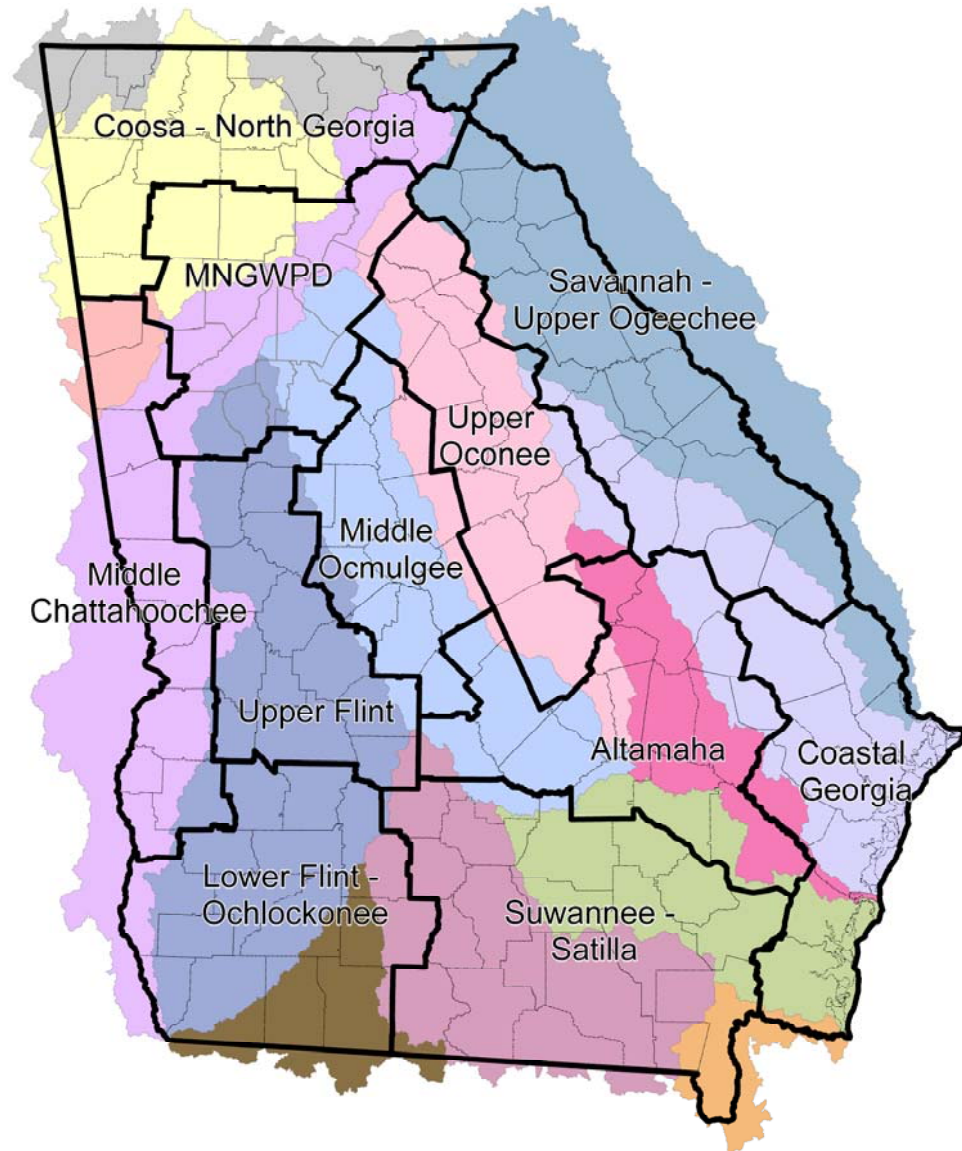
Presentation Overview

- Overview of Results
- Process
- Detailed Results

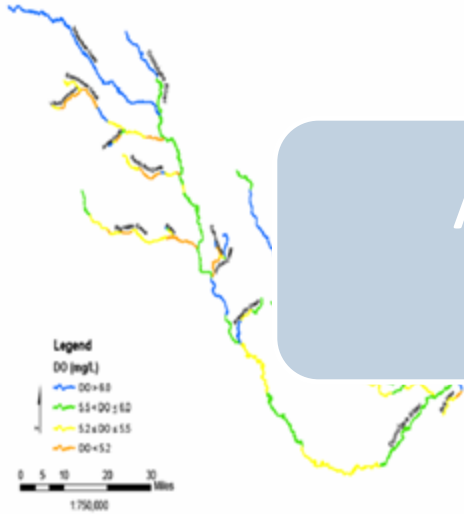


River Basins

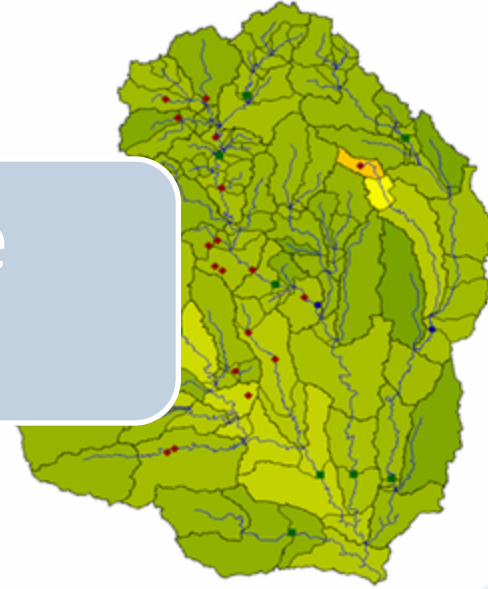
- Chattahoochee River Basin
- Tallapoosa River Basin
- Flint River Basin



DOSAG Results for the Ocrúgee River and Tributaries



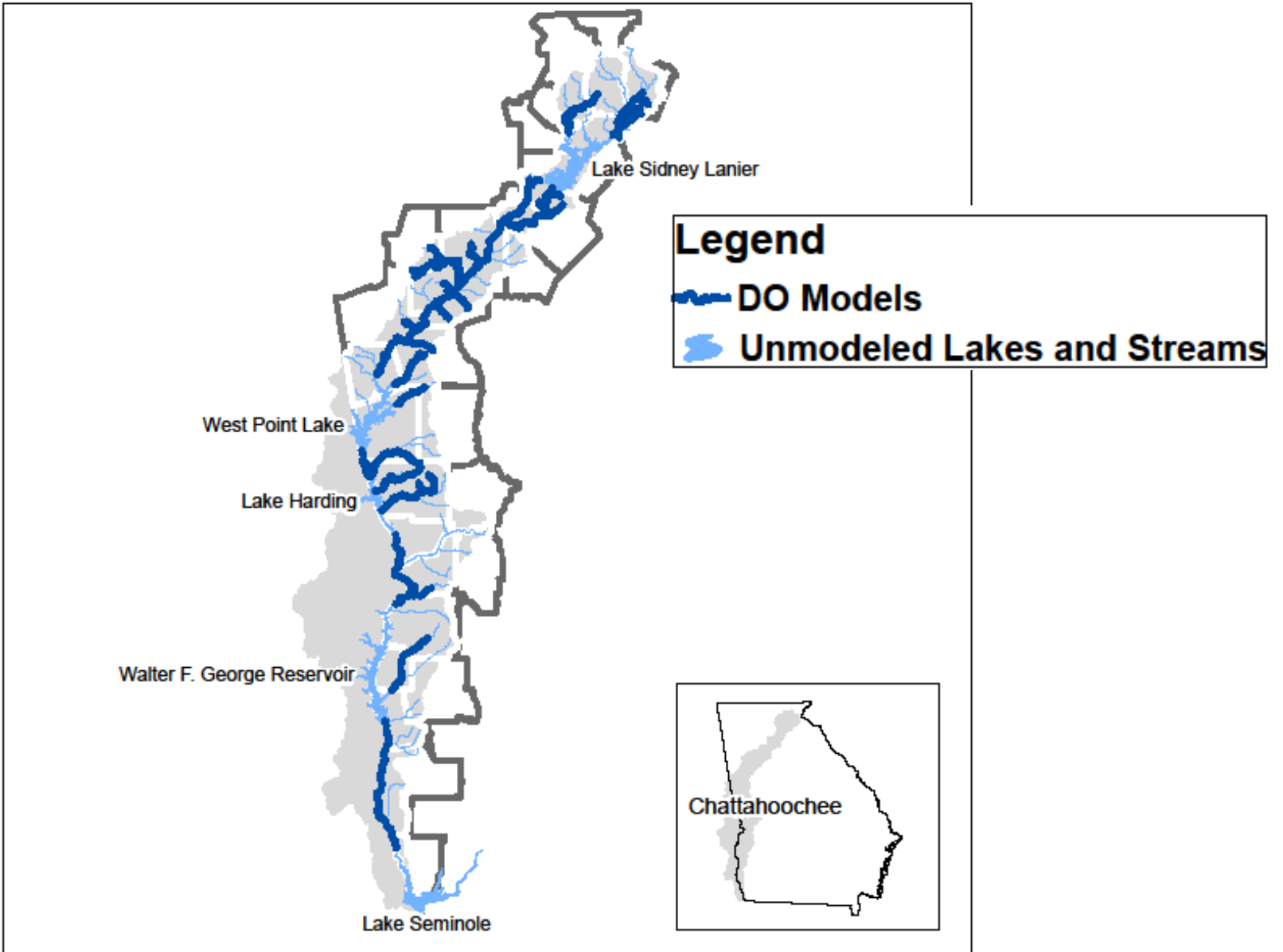
Assimilative
Capacity



Dissolved Oxygen

Nutrients

Chattahoochee 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

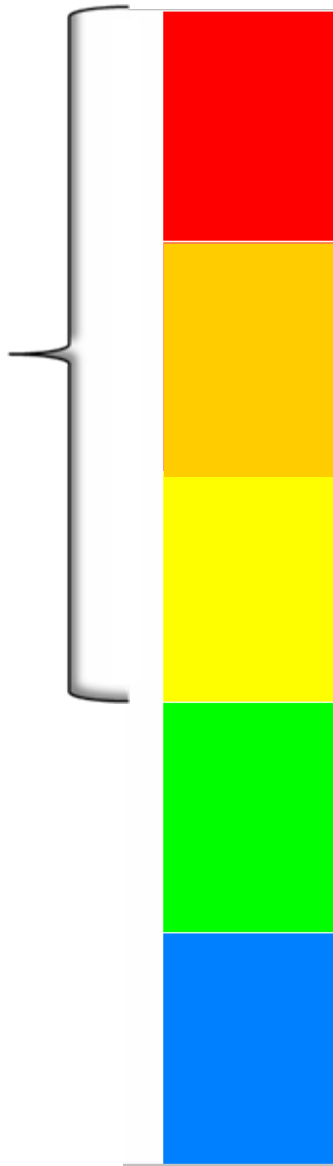
- Freshwater Cold Water Fishing (Trout) Dissolved Oxygen Standard
 - Daily average of 6.0 mg/L
 - Not less than 5.0 mg/L

- 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



≤ 0.0 mg/L DO available for assimilative capacity
None or exceeded capacity

> 0.0 mg/L to ≤ 0.2 mg/L of DO available
Limited

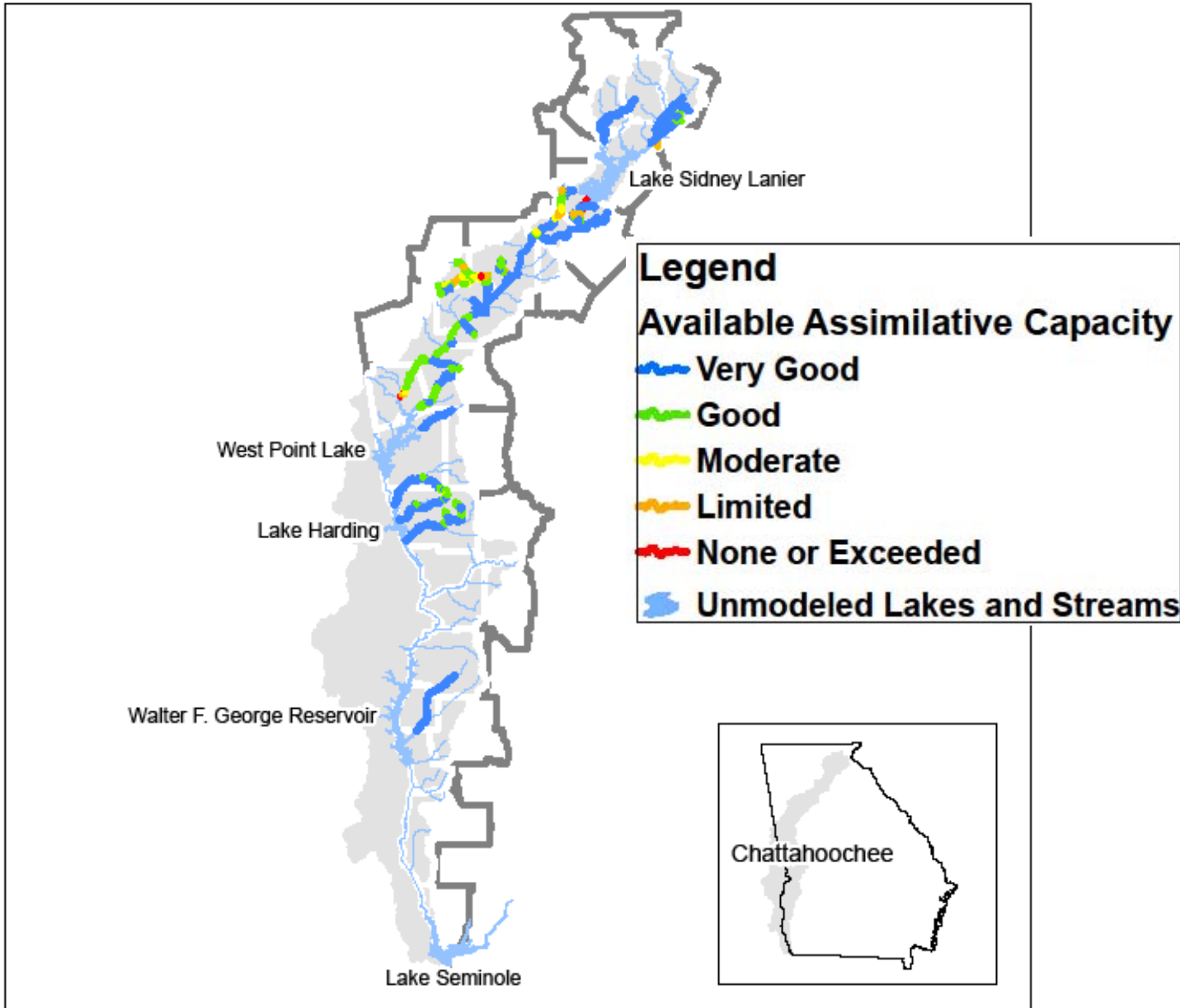
> 0.2 mg/L to ≤ 0.5 mg/L of DO Available
Moderate

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

≥ 1.0 mg/L of DO available
Very Good

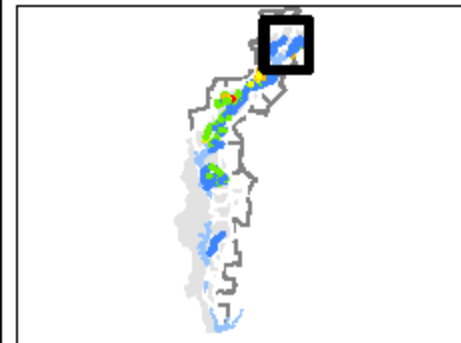
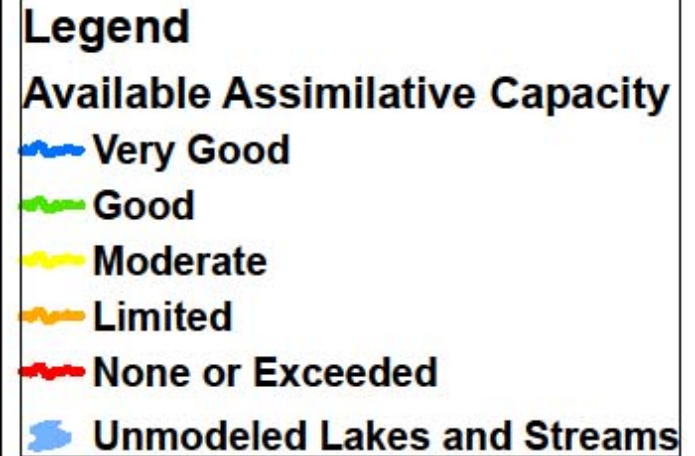
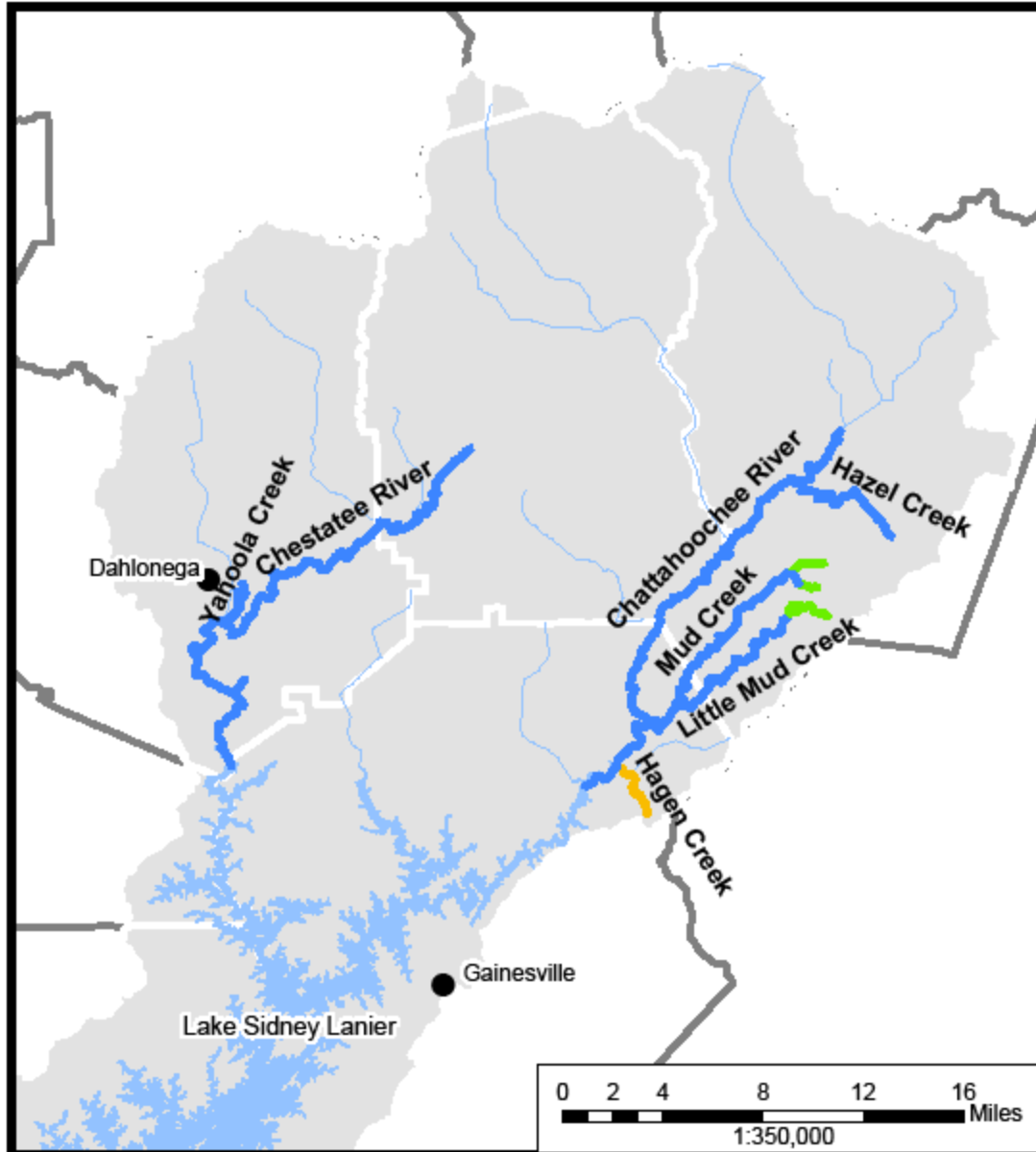


Chattahoochee Model Results



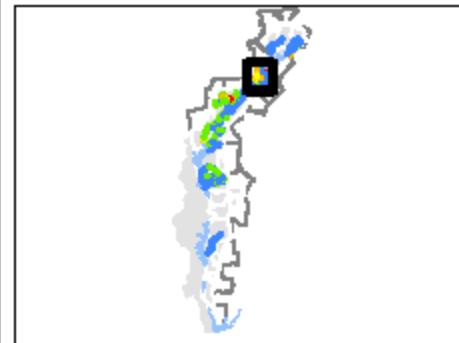
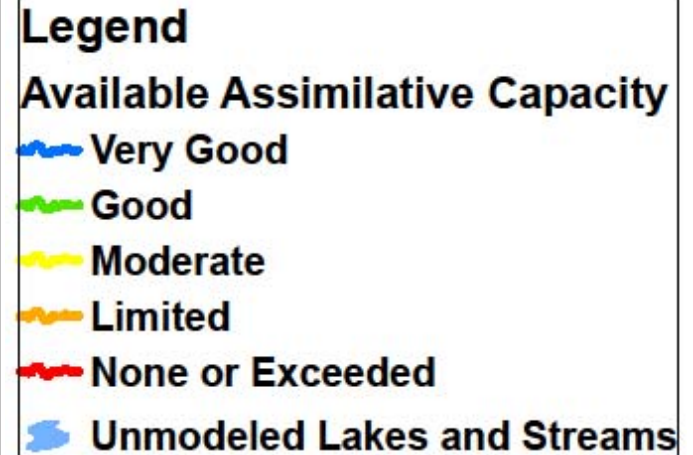
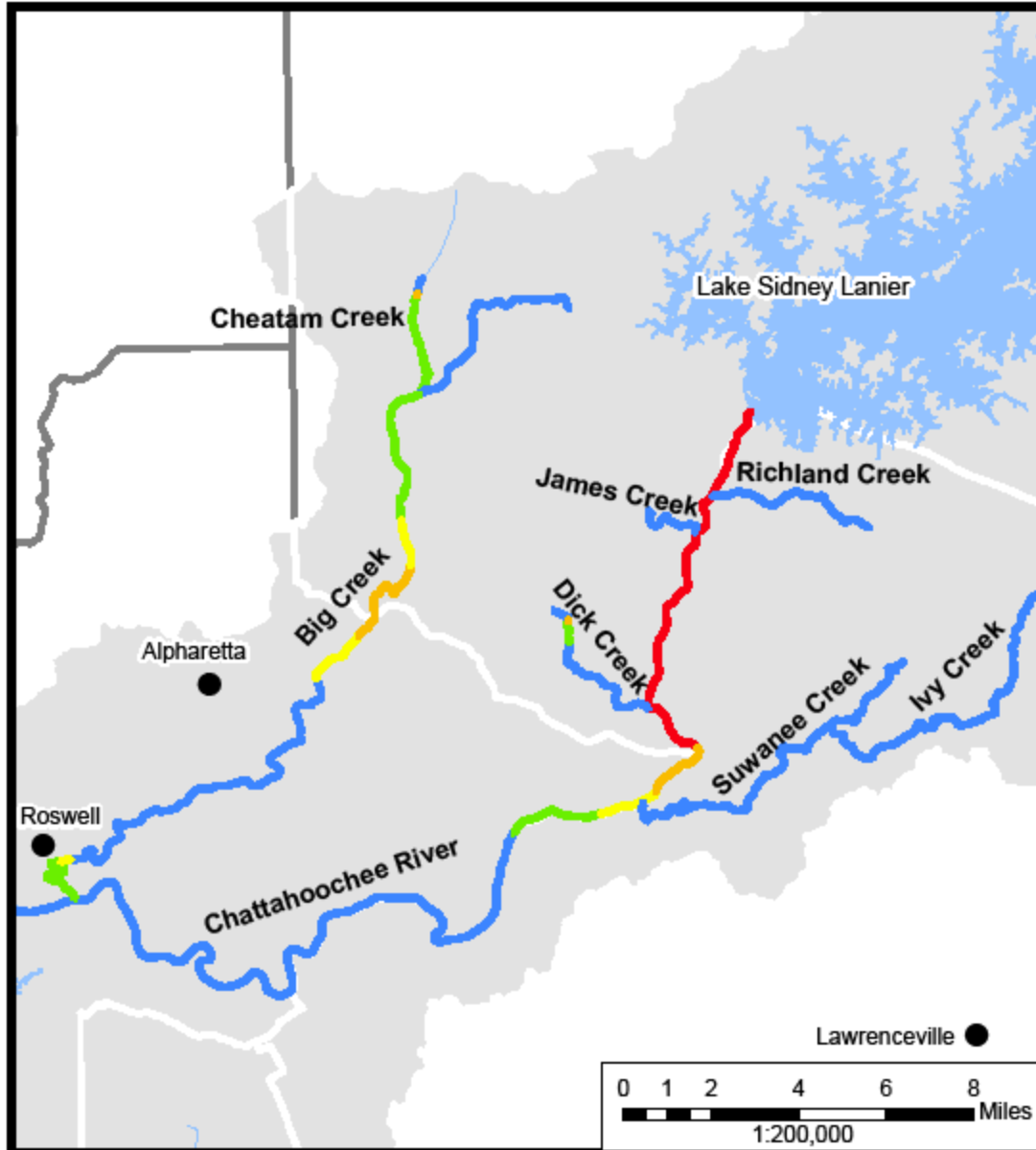


Chattahoochee Model Results



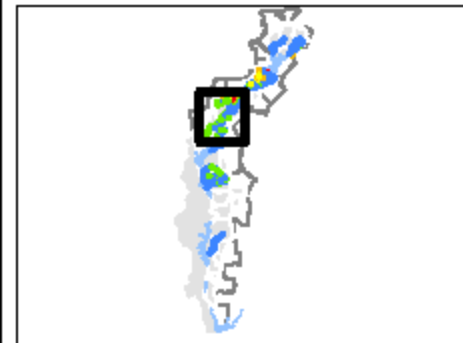
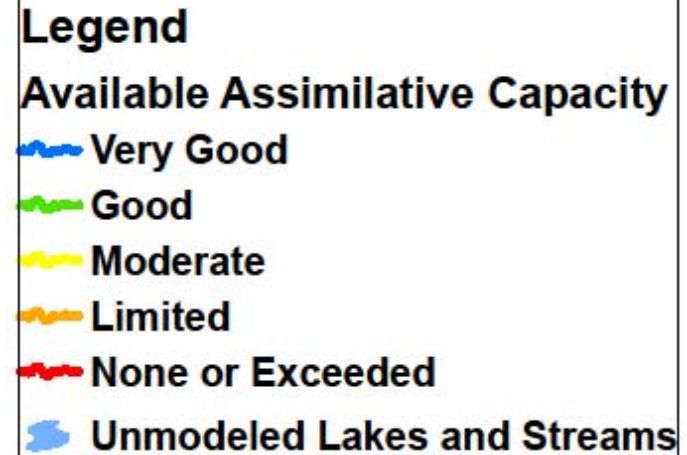
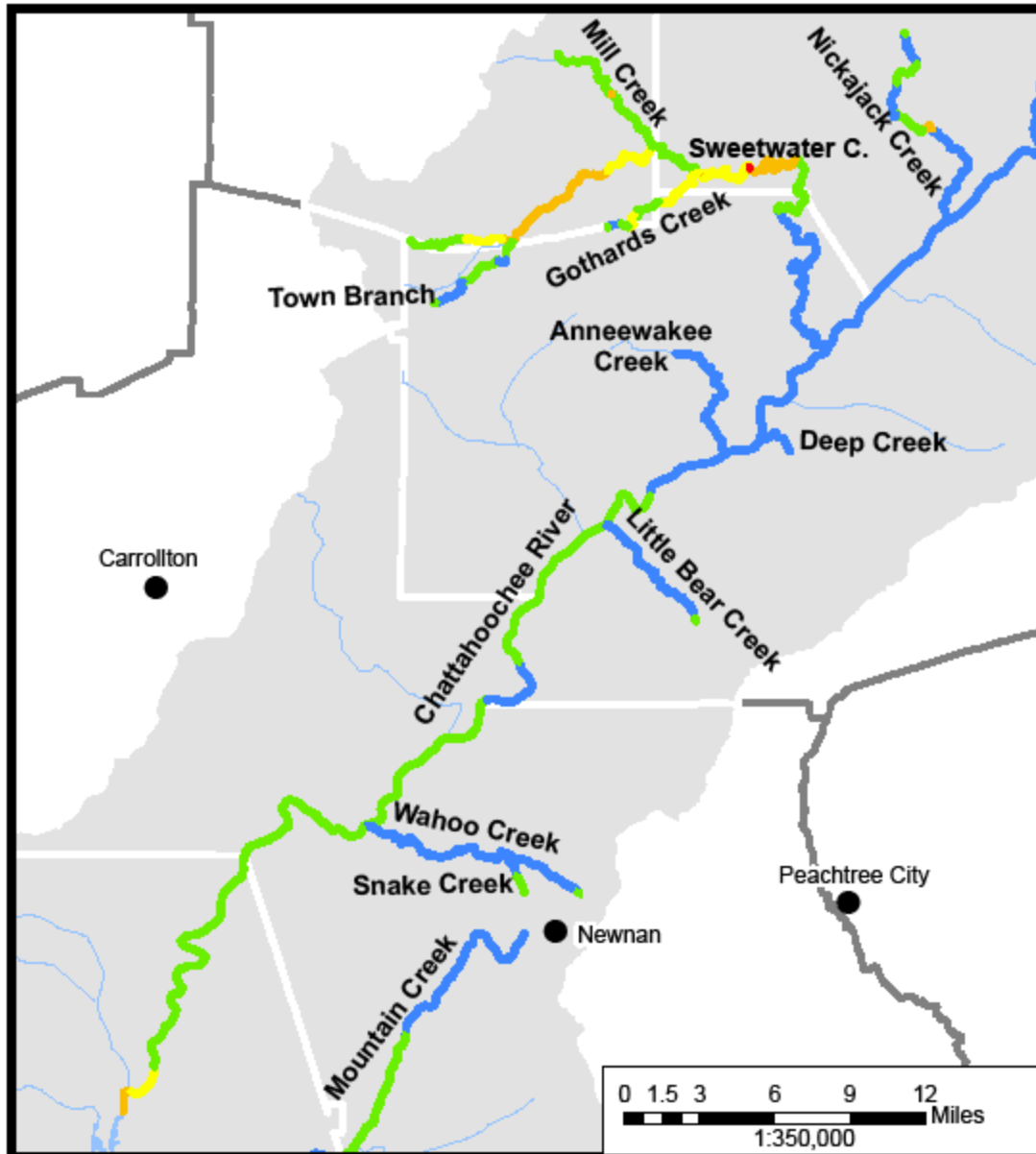


Chattahoochee Model Results



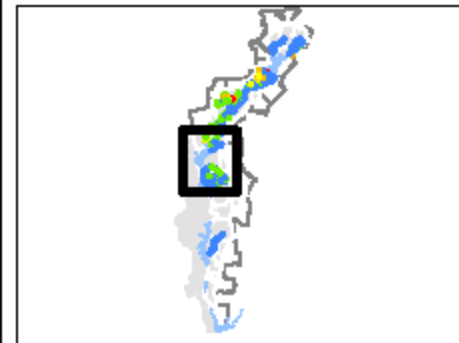
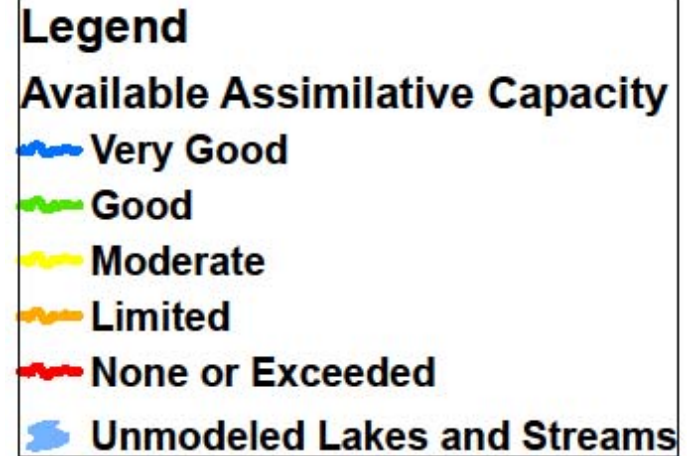
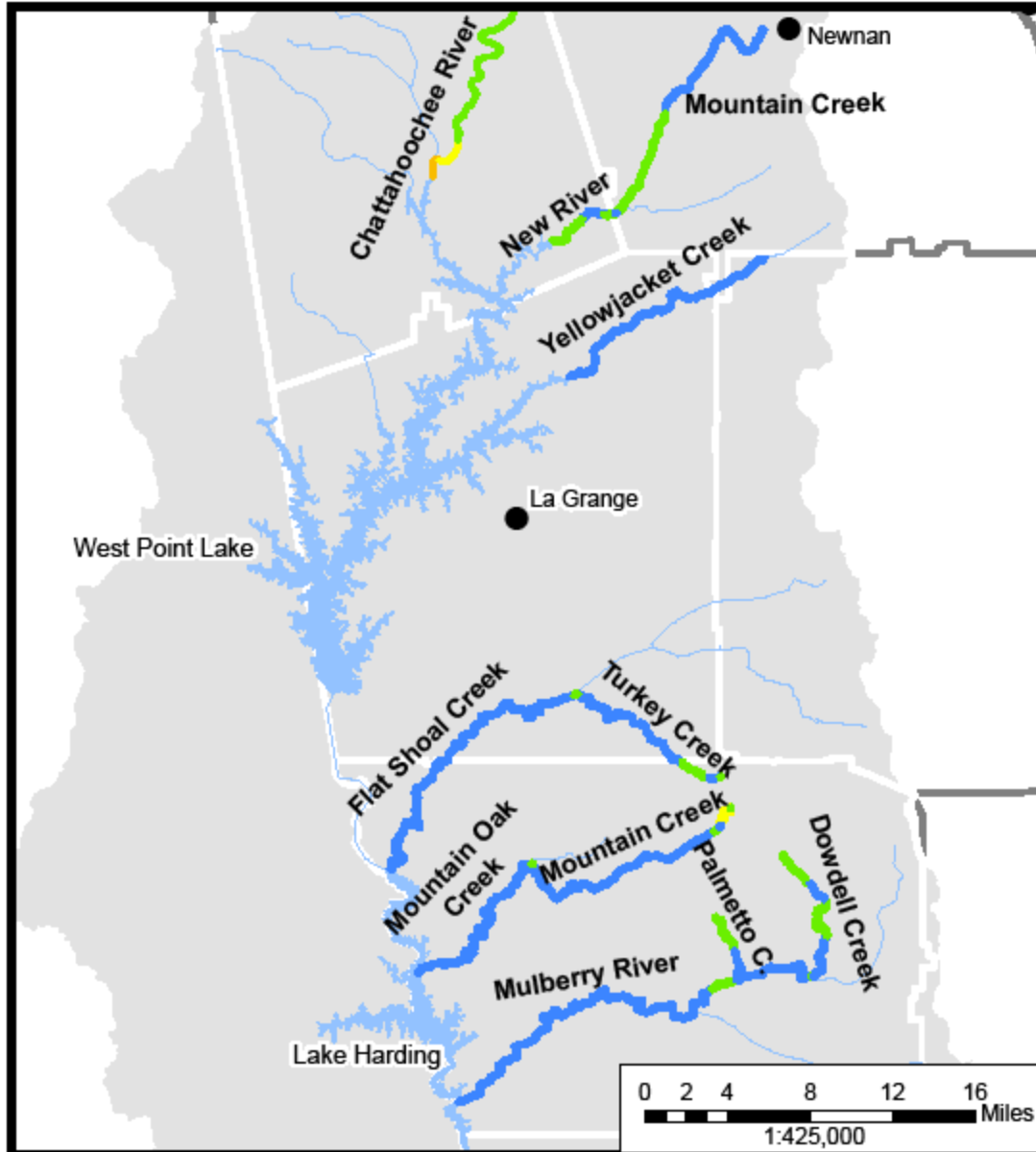


Chattahoochee Model Results



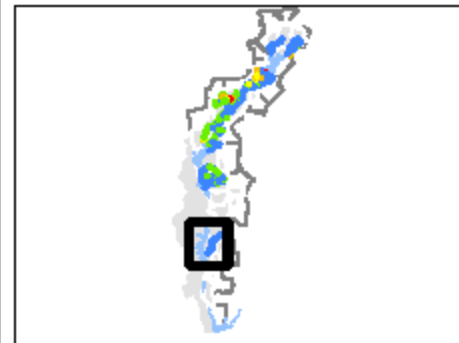
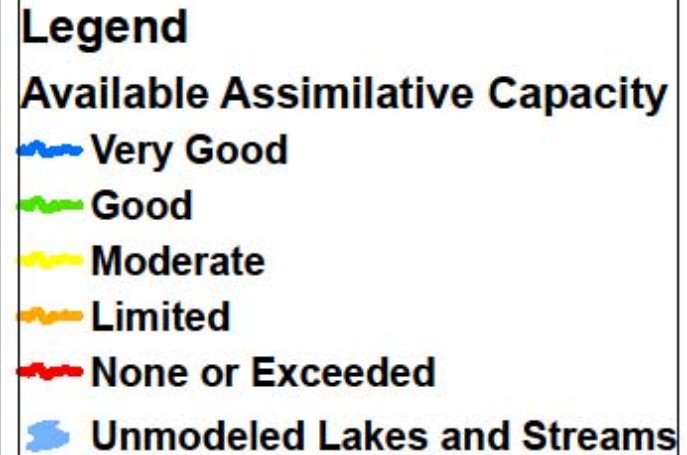


Chattahoochee Model Results





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

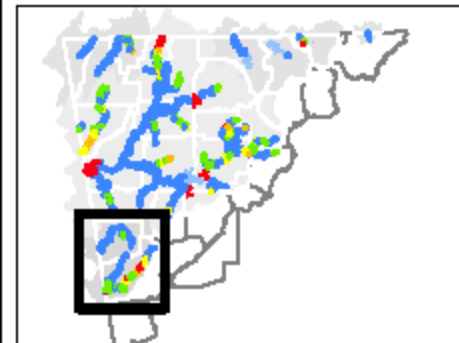
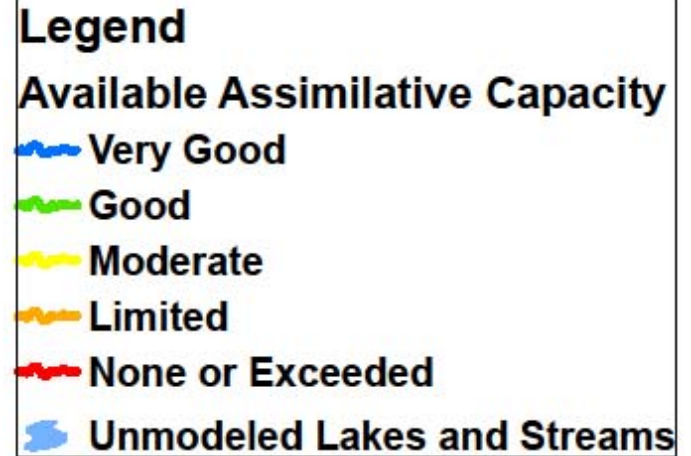
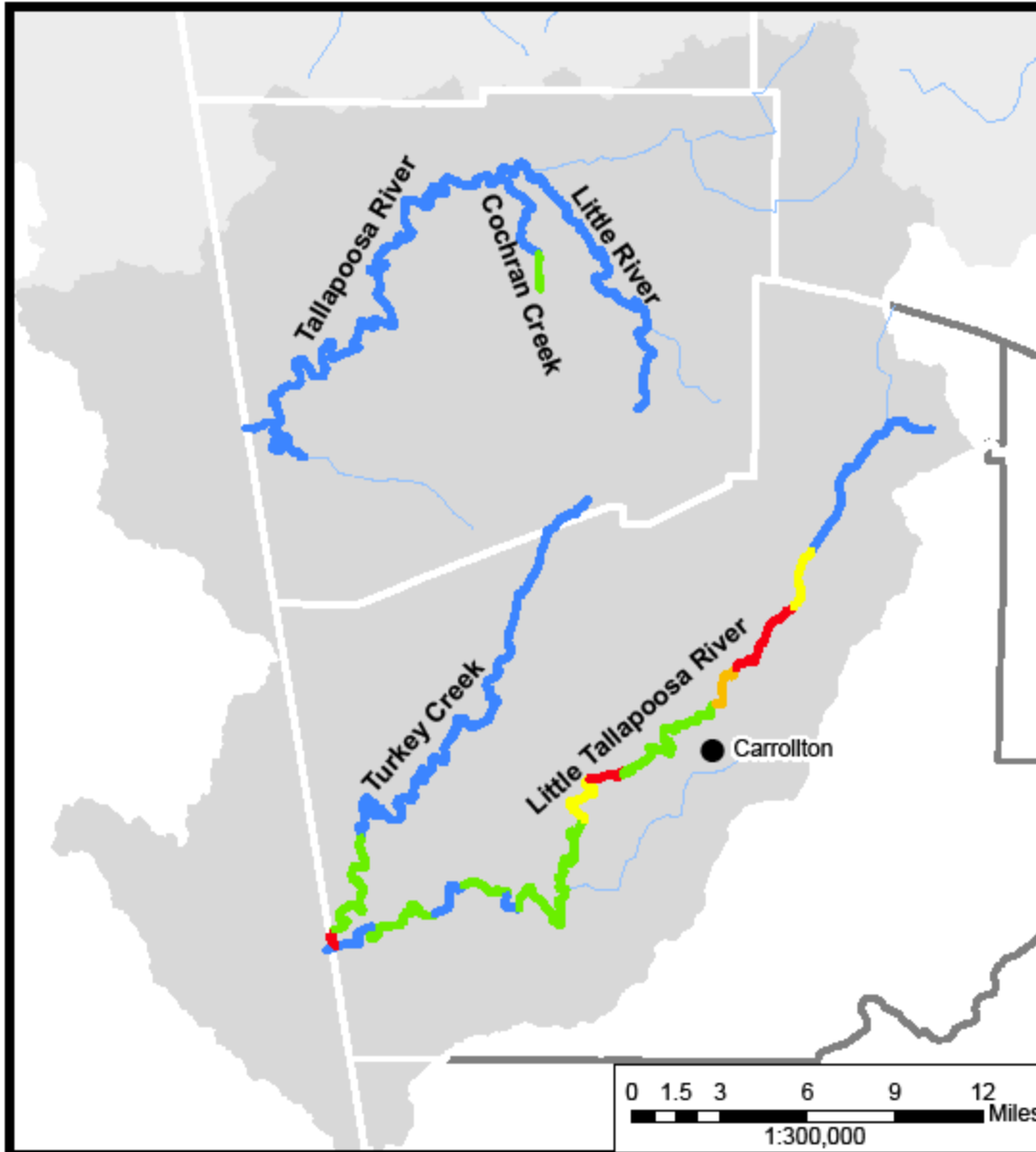


Council Considerations

- 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



Tallapoosa Model Results



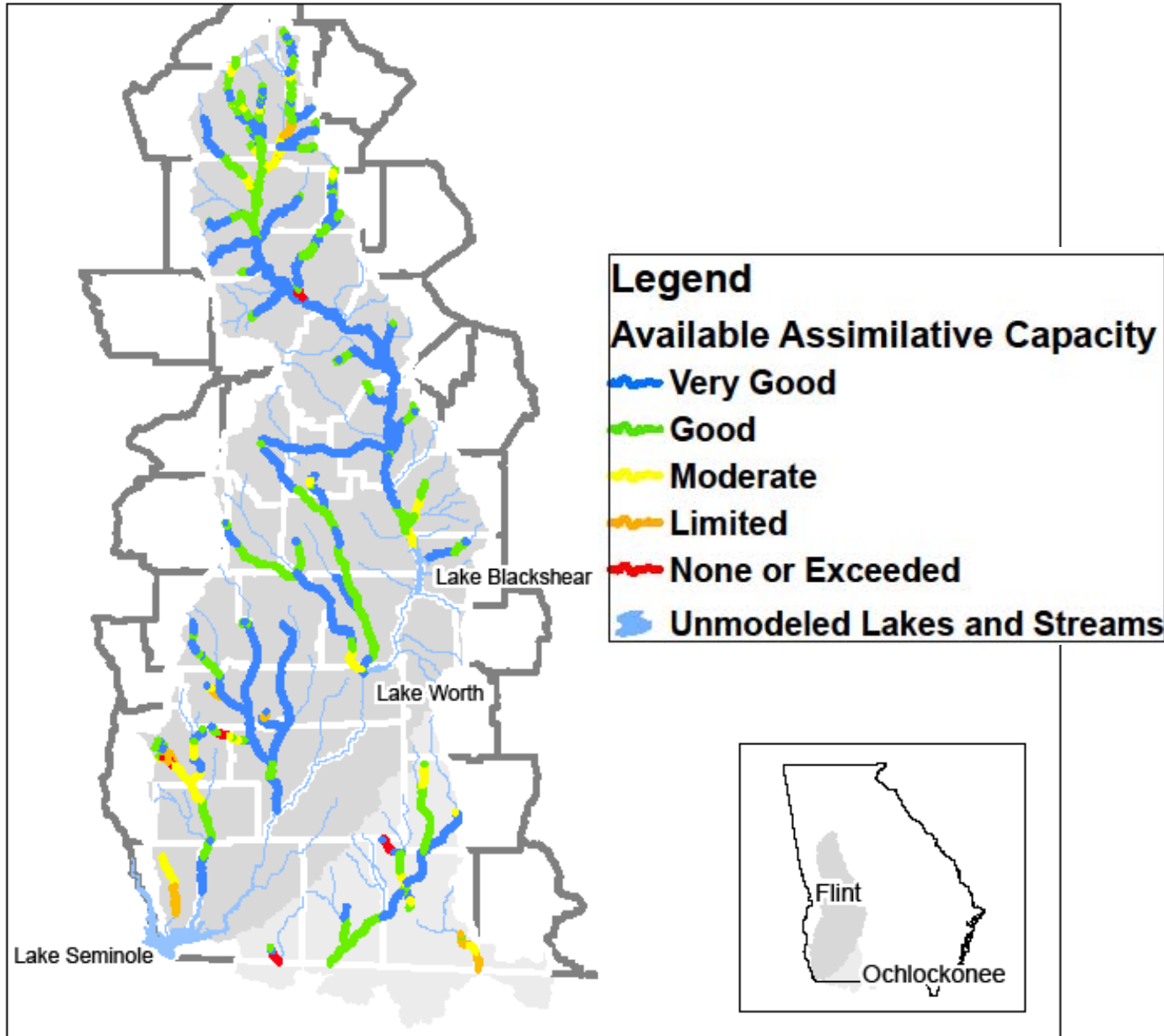


Council Considerations

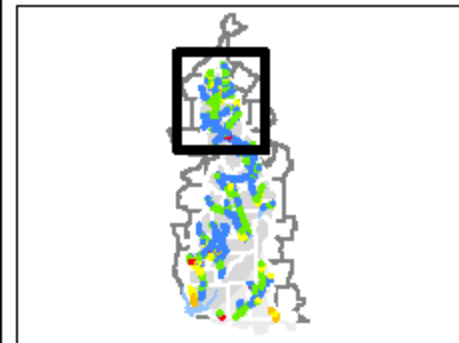
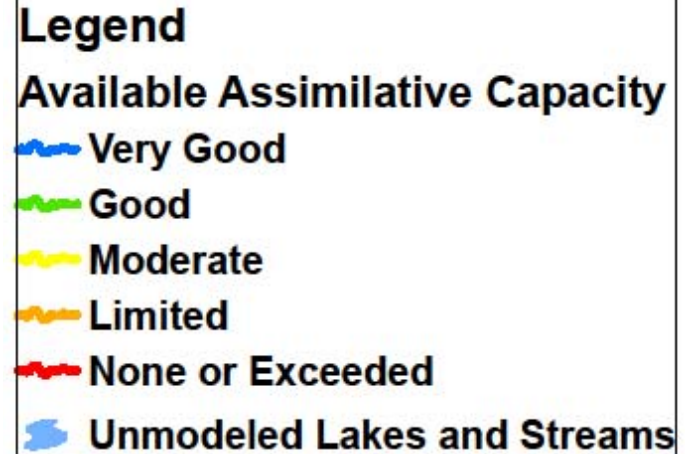
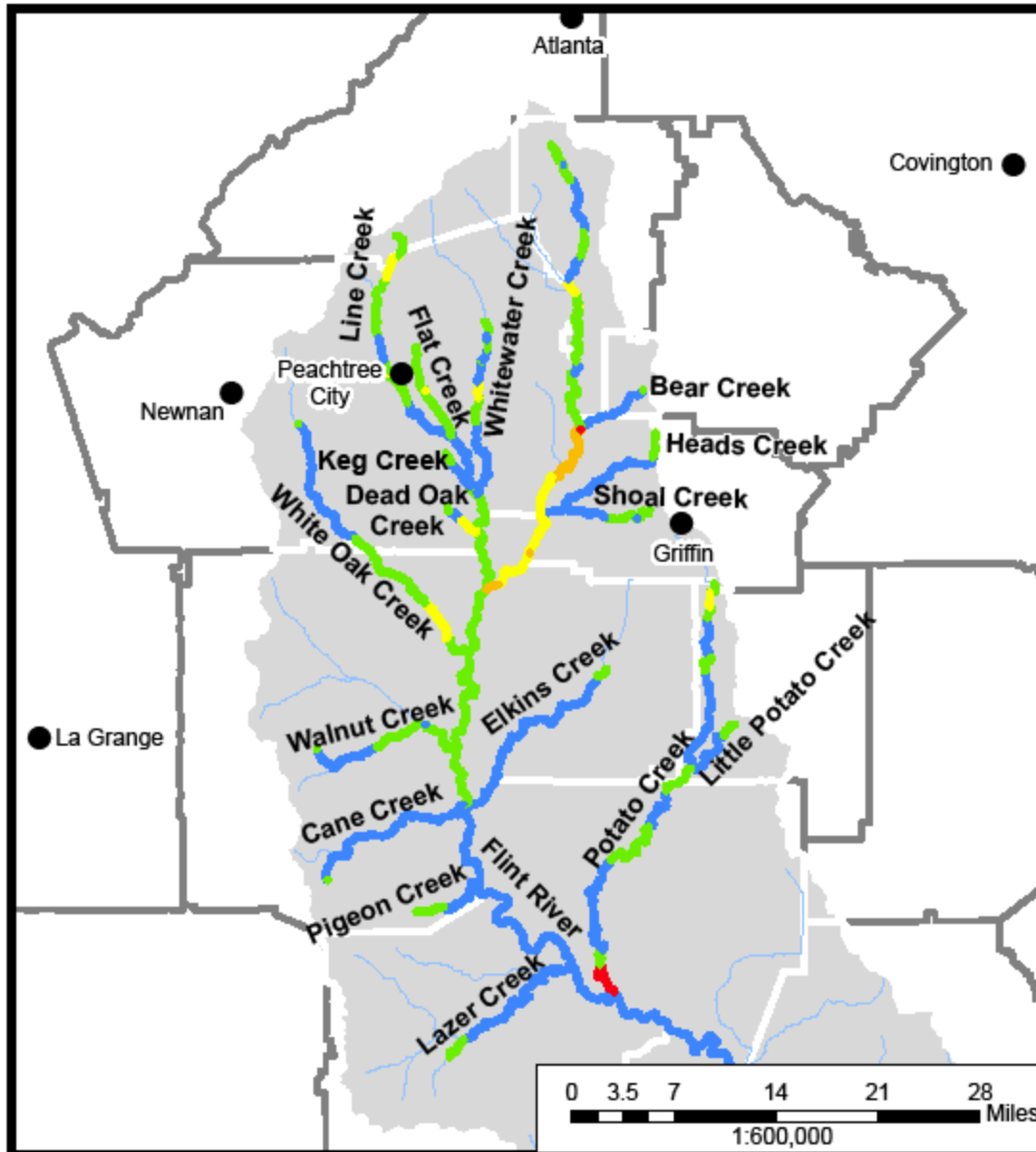
- Nutrients
- Discharges into Primary trout streams and their heat load
- Discharges into stream with threatened and endangered species
- Outstanding resource
 - Increase the level of protection on a waterbody



Flint Ochlockonee Model Results

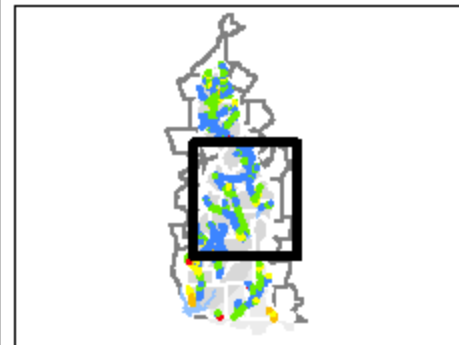
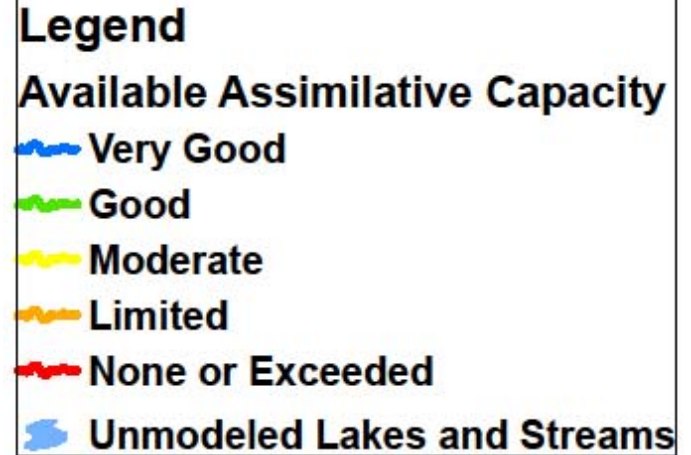
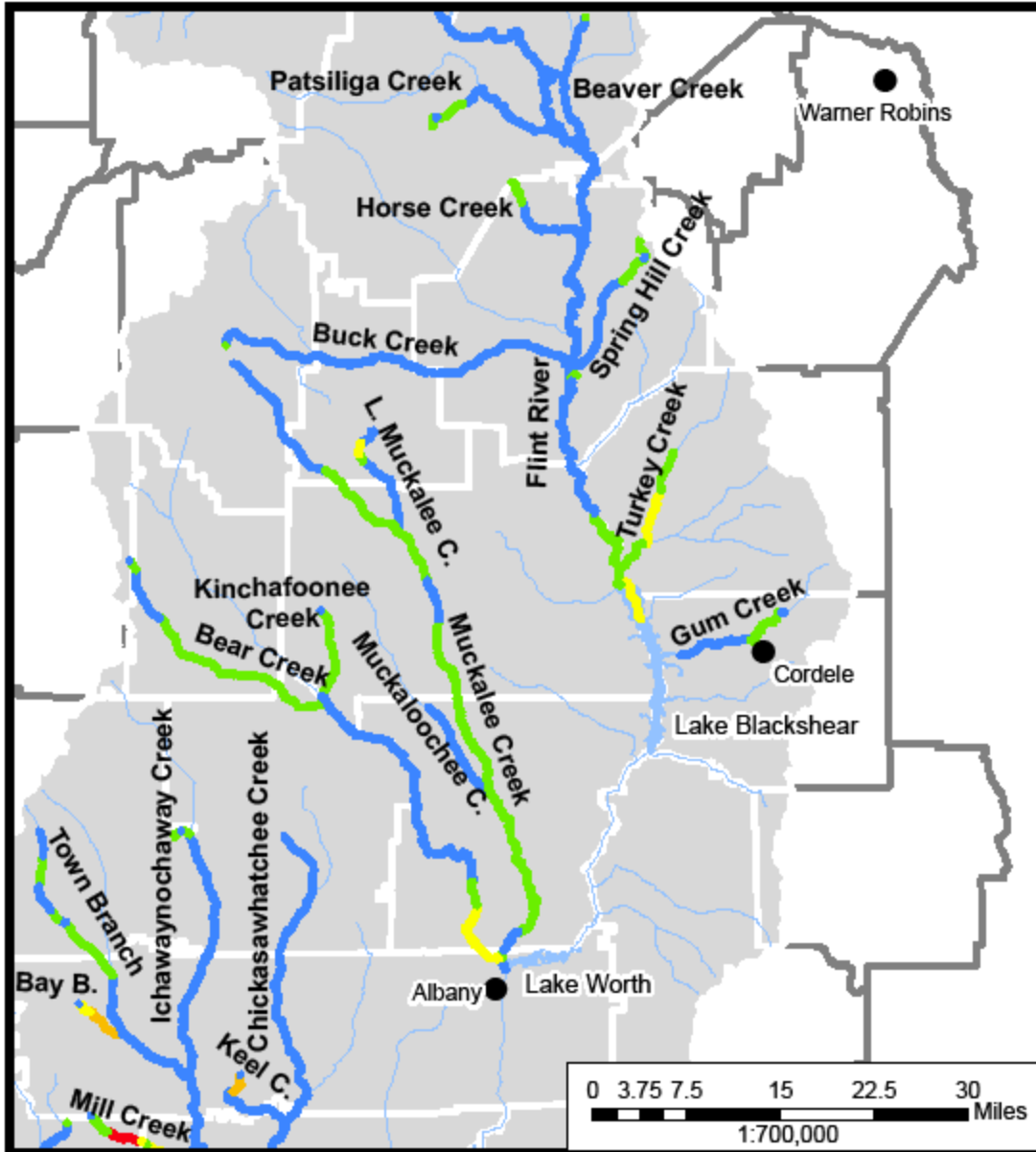


Flint Model Results

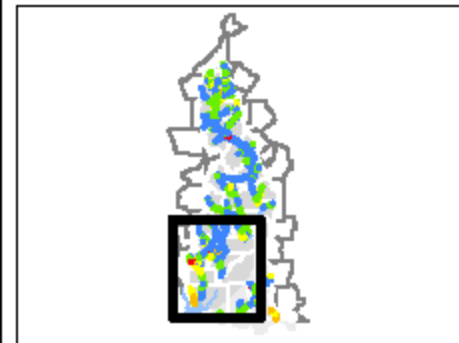
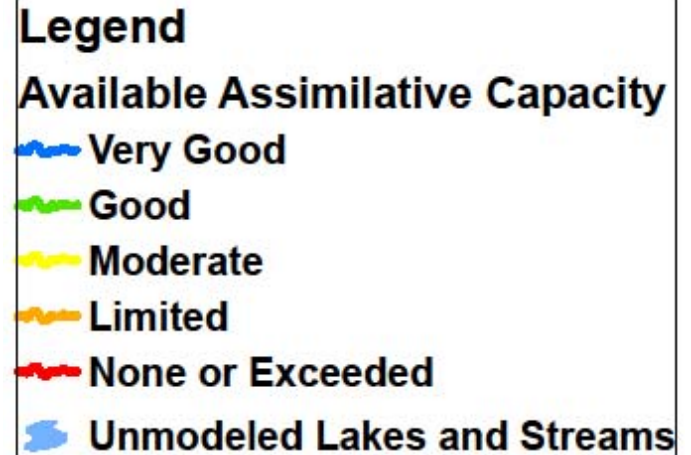
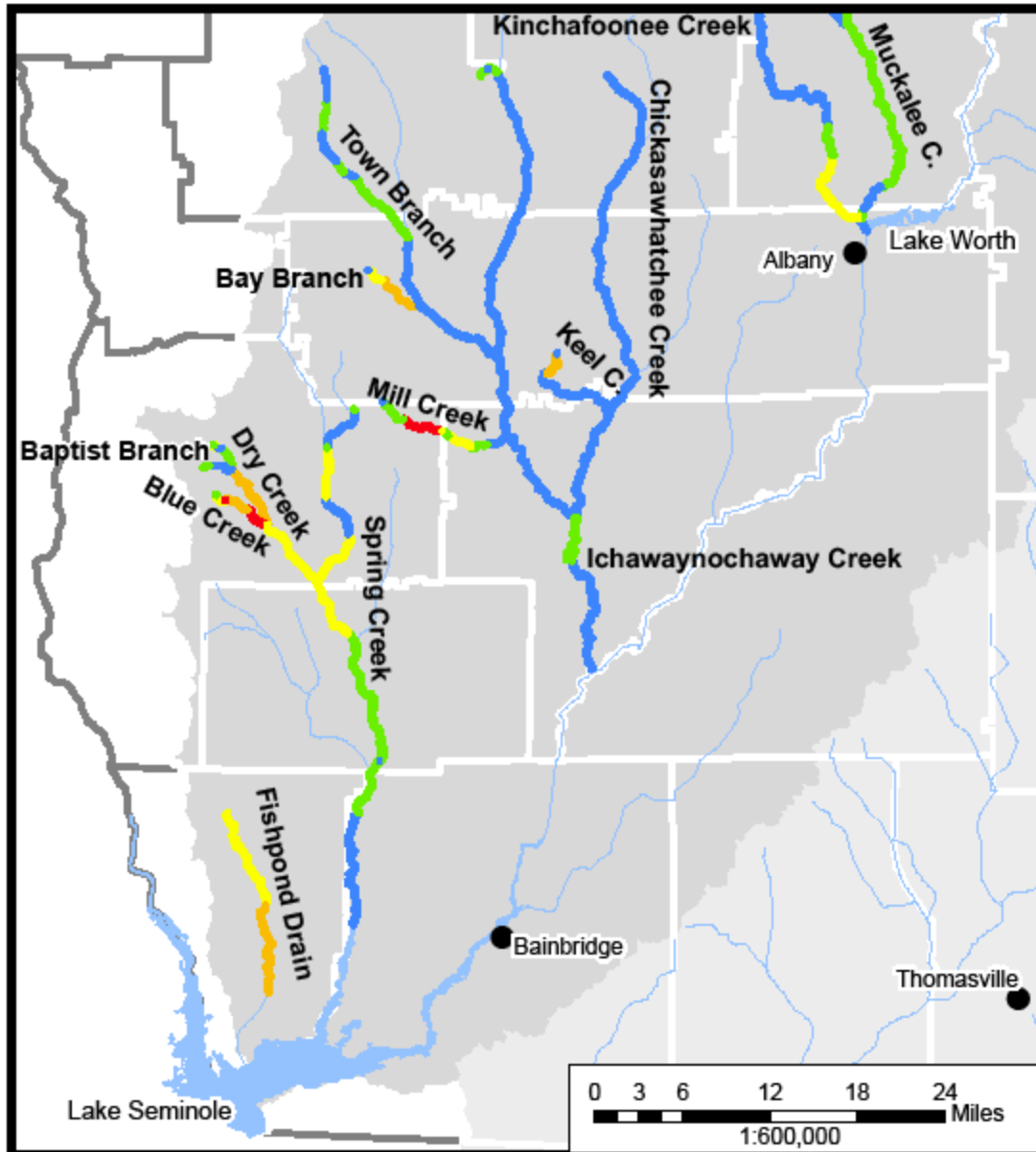




Flint Model Results



Flint 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

Resource Assessment Process

