



Surface Water Quality Resource Assessments



Georgia's **State Water Plan**

www.georgiawaterplanning.org



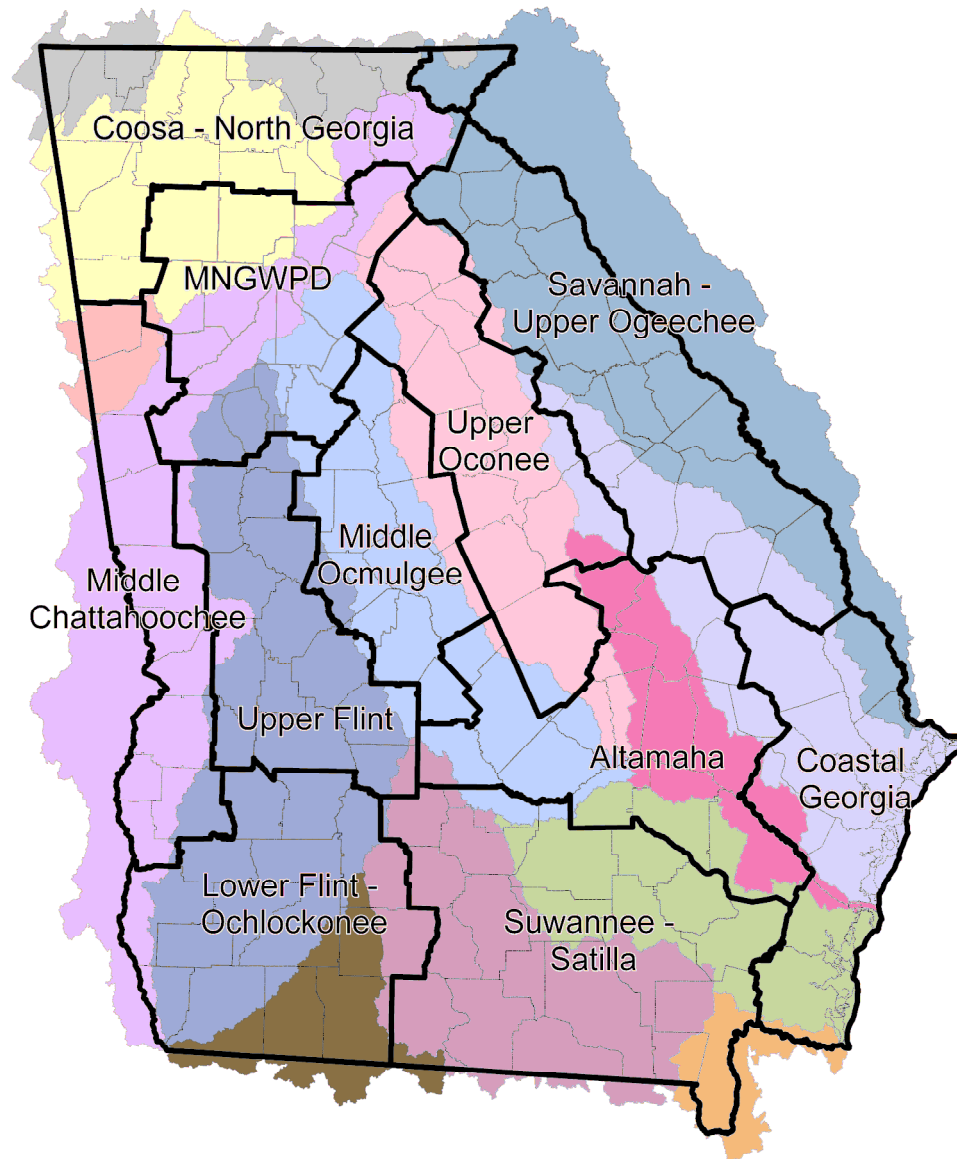
Presentation Overview

- Overview of Results
- Process
- Detailed Results

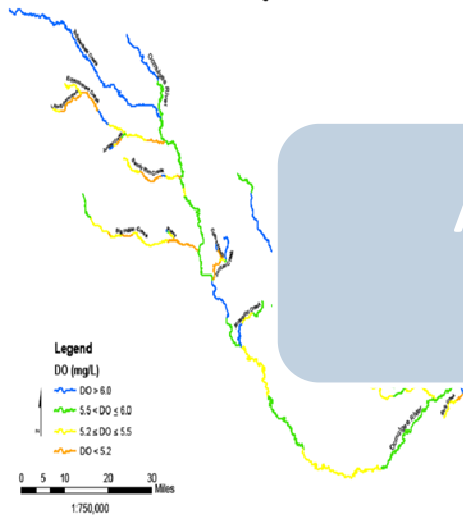


River Basins

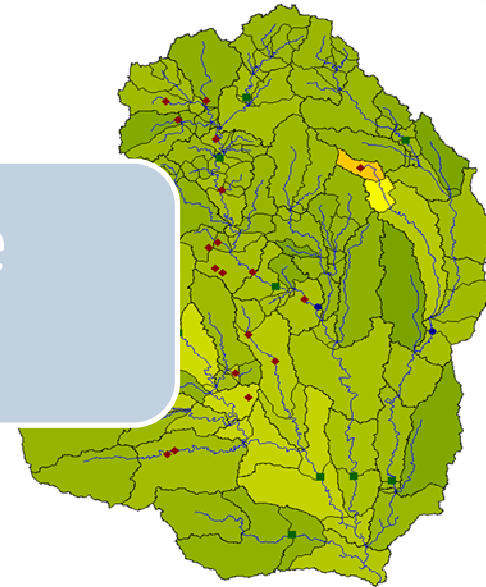
■ Chattahoochee River Basin



DOSAG Results for the Ocmulgee River and Tributaries



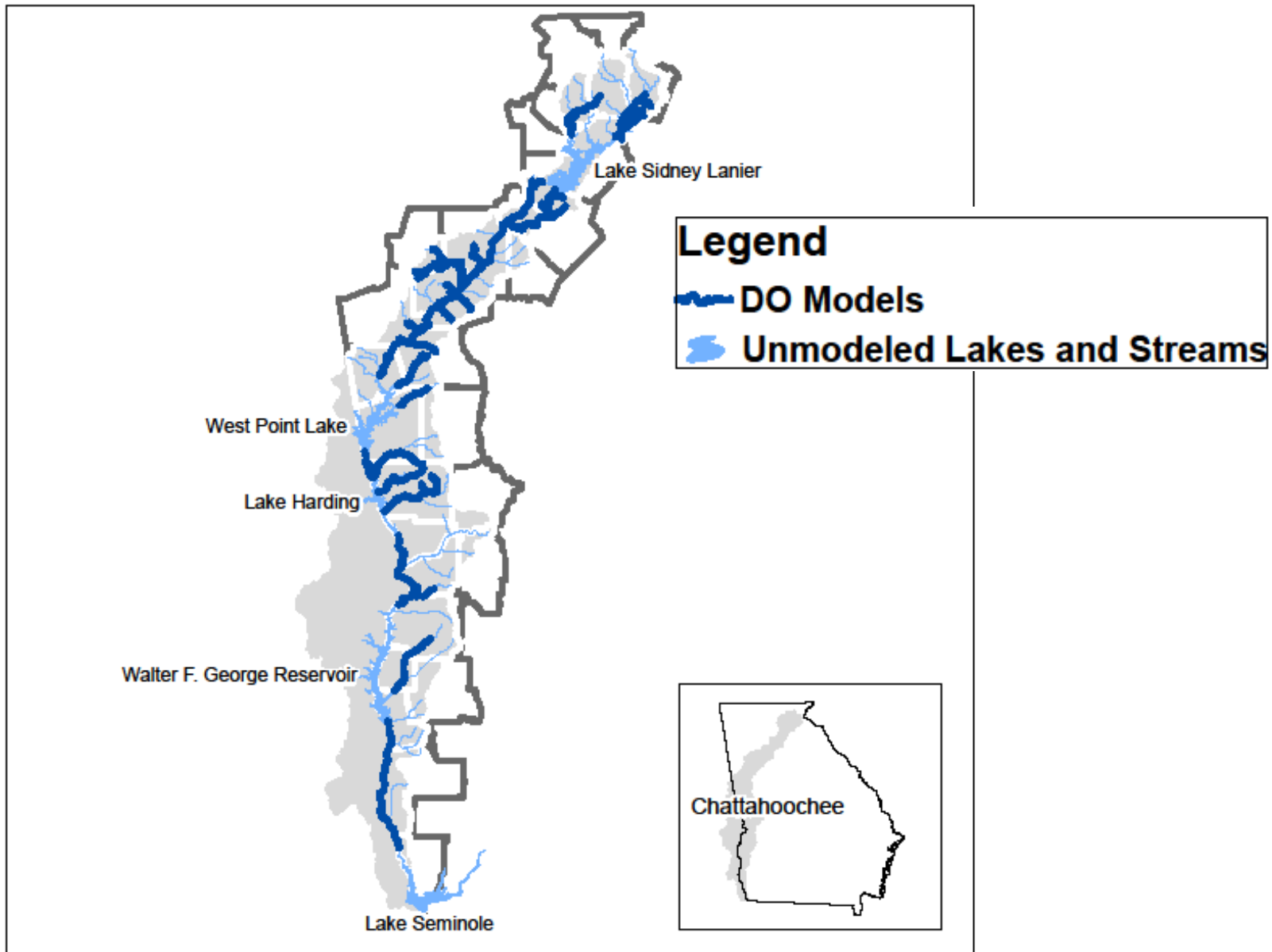
Assimilative
Capacity



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

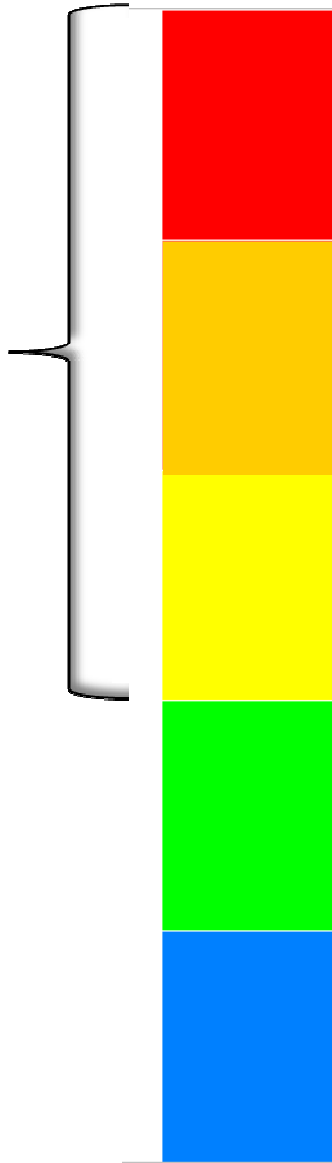
- Freshwater Cold Water Fishing (Trout) Dissolved Oxygen Standard
 - Daily average of 6.0 mg/L
 - Not less than 5.0 mg/L

- Freshwater 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

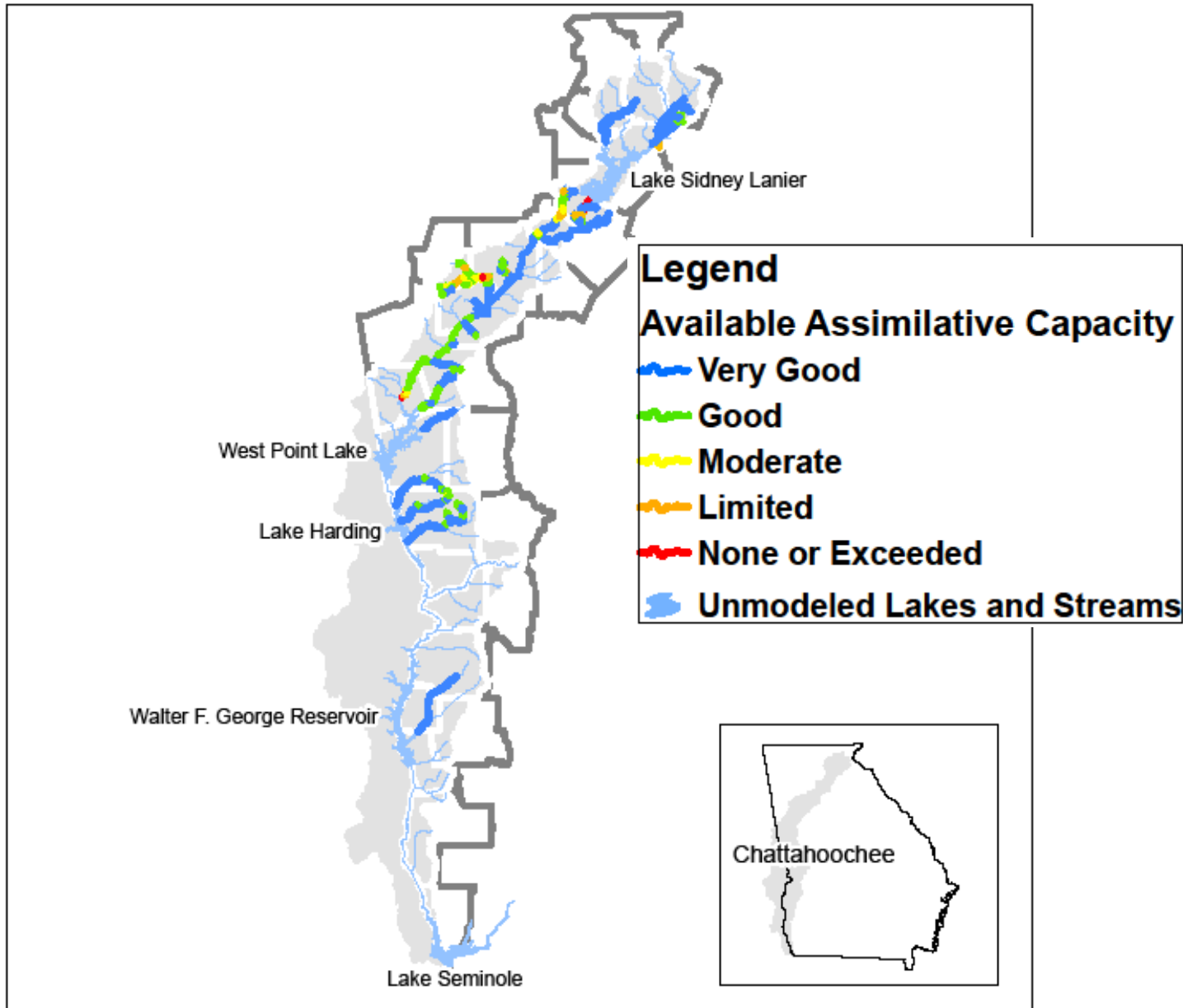
> 0.0 mg/L to ≤ 0.2 mg/L of DO available
Limited

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

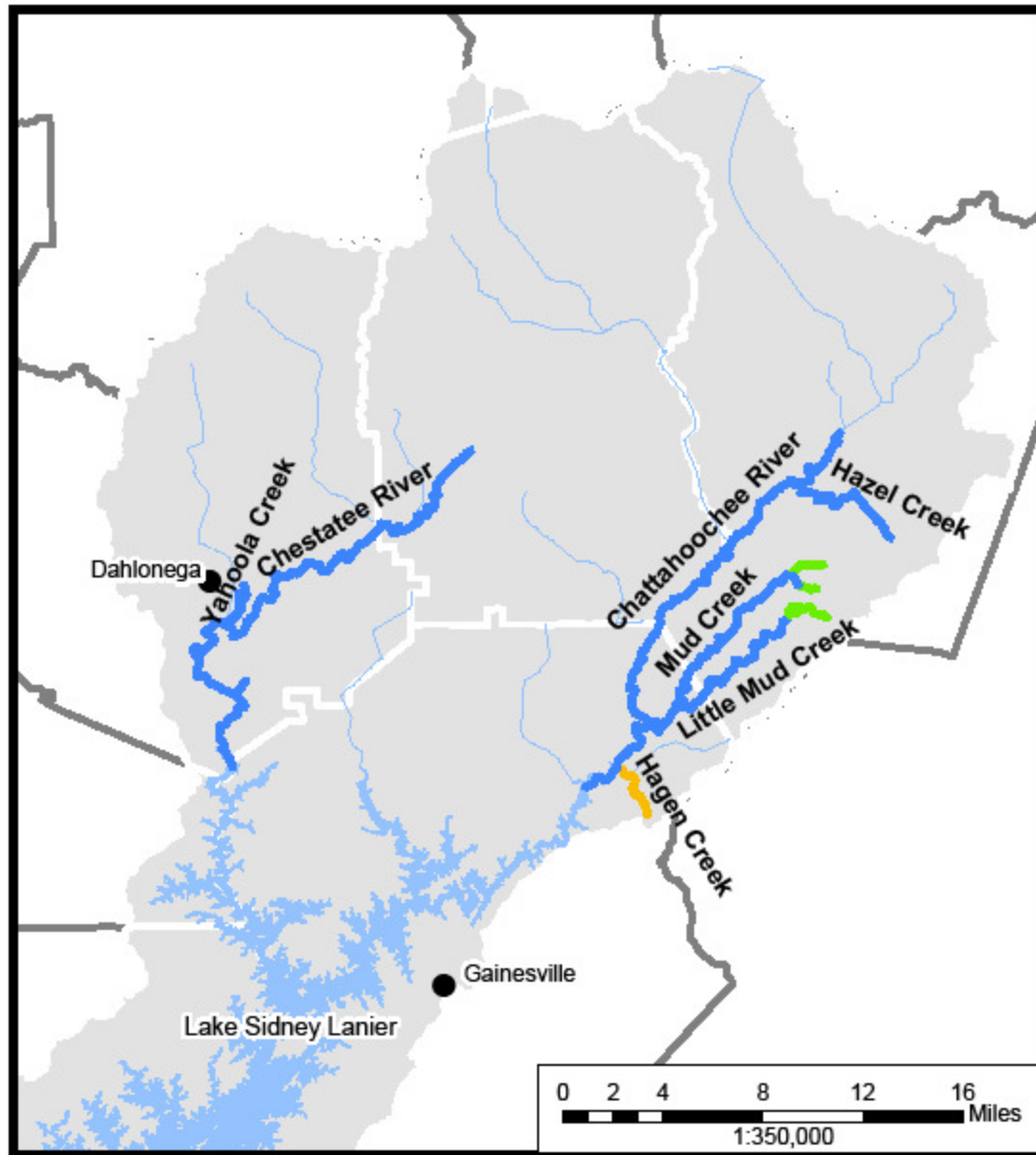
> 0.5 mg/L to 1.0 mg/L of DO Available
Good

≥ 1.0 mg/L of DO available
Very Good

Chattahoochee Model Results




Chattahoochee Model Results



Legend


Available Assimilative Capacity

 Very Good

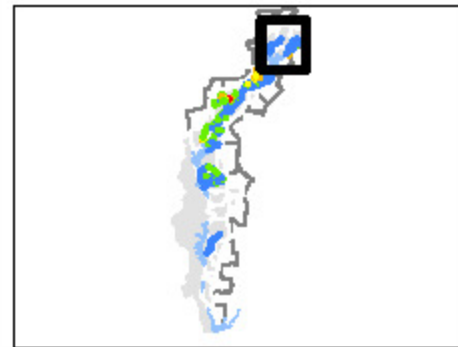
 Good

 Moderate

 Limited

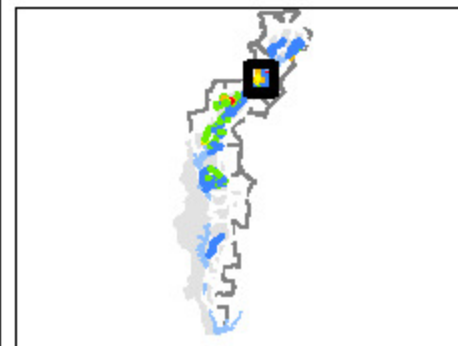
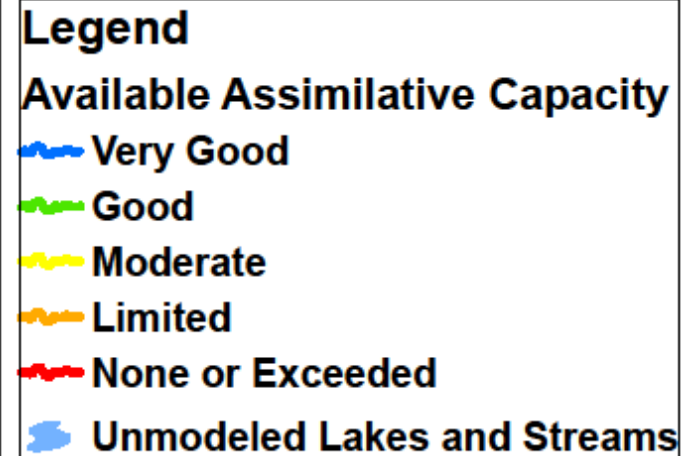
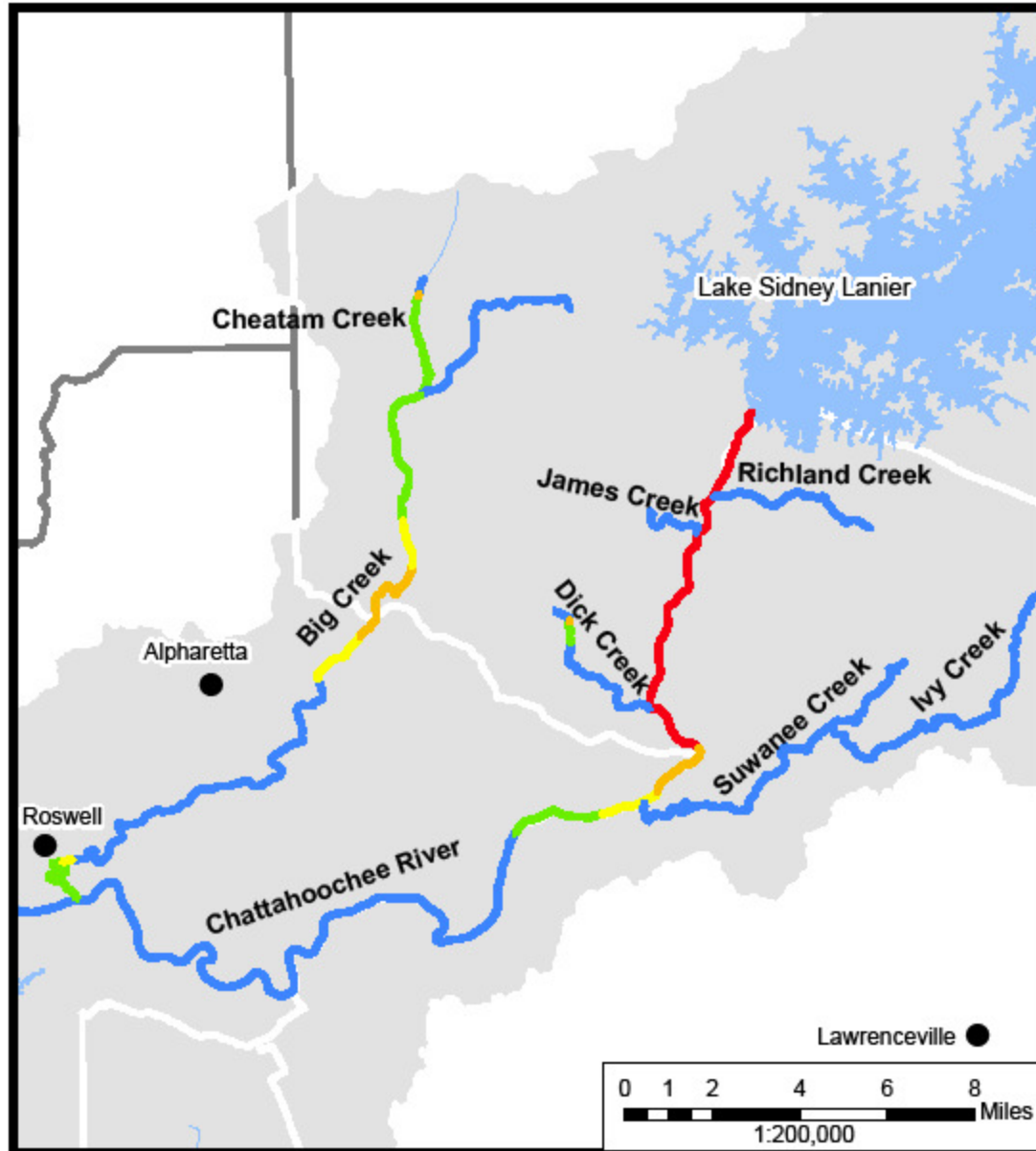
 None or Exceeded

 Unmodeled Lakes and Streams

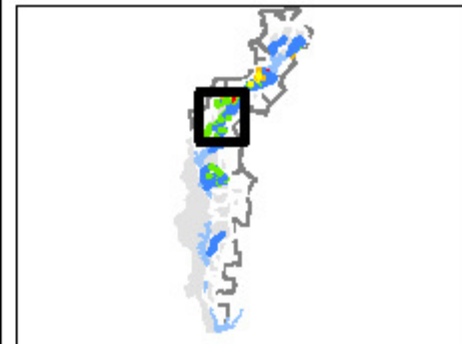
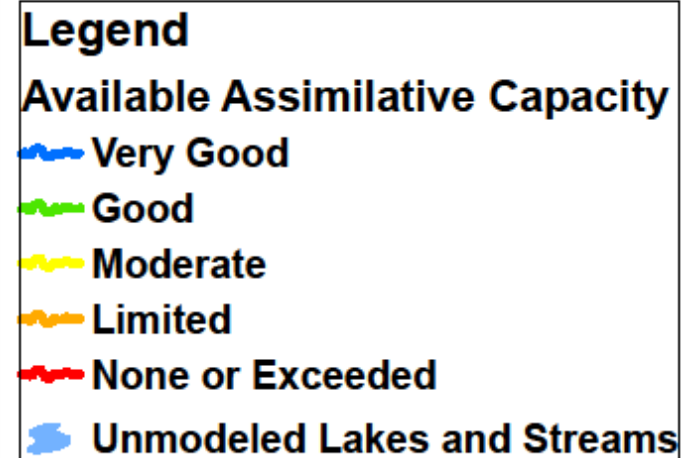
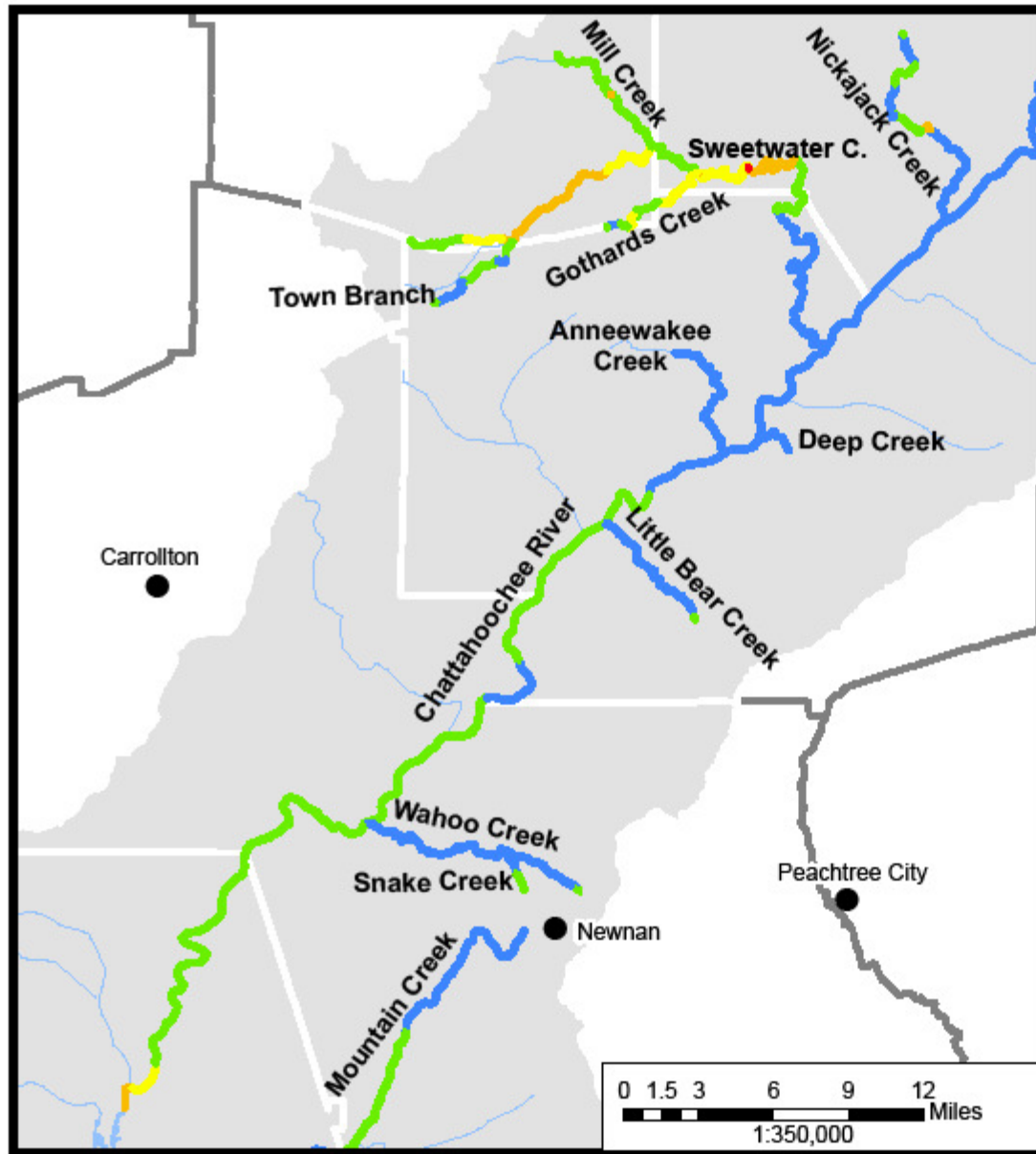




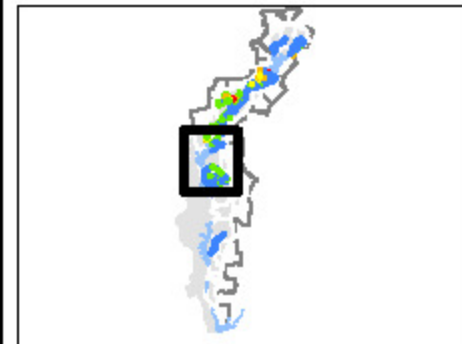
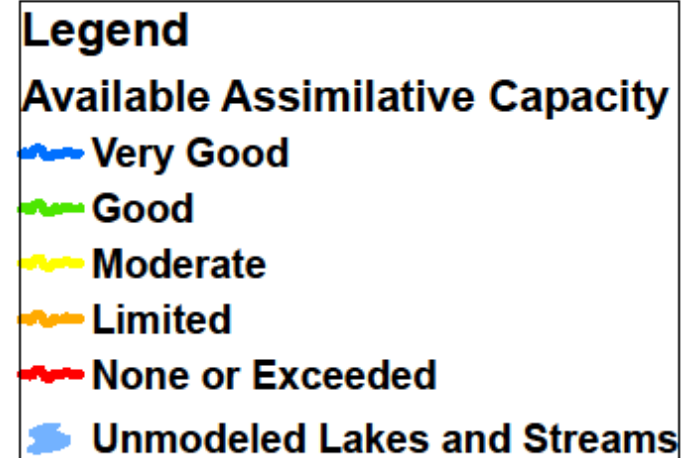
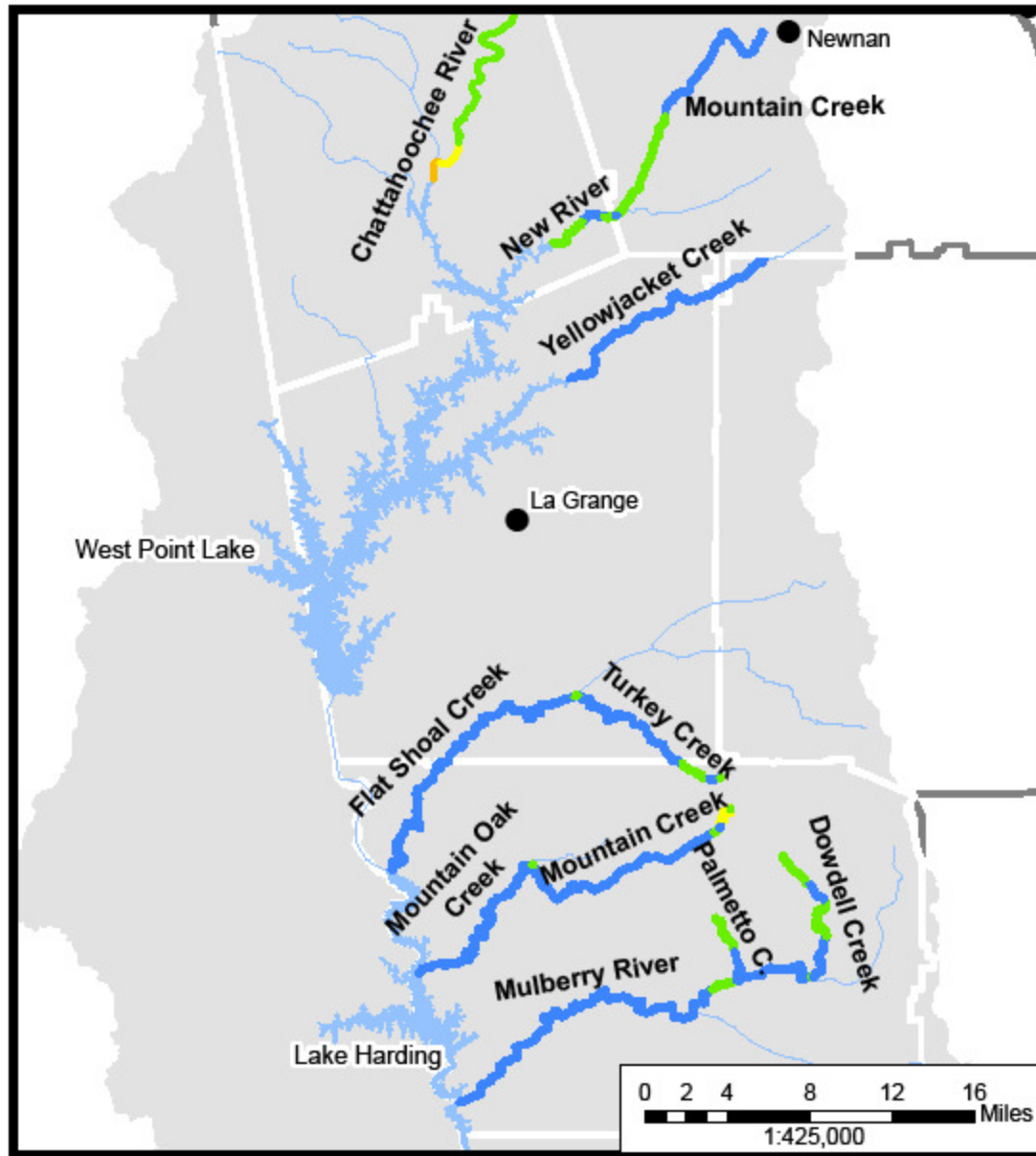
Chattahoochee Model Results



Chattahoochee Model Results

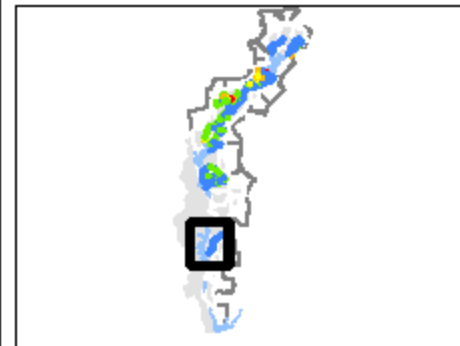
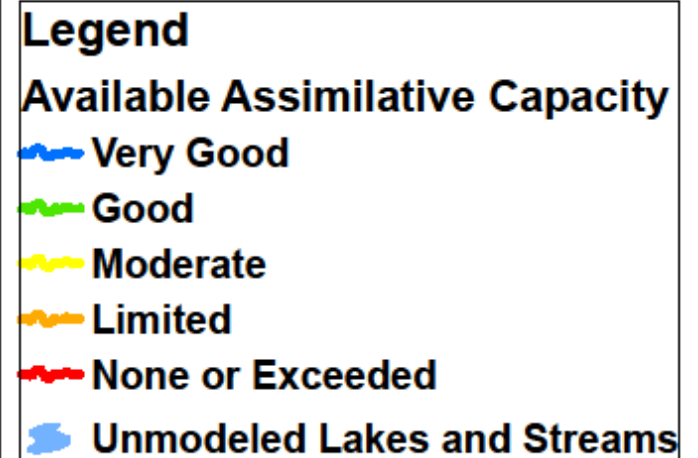
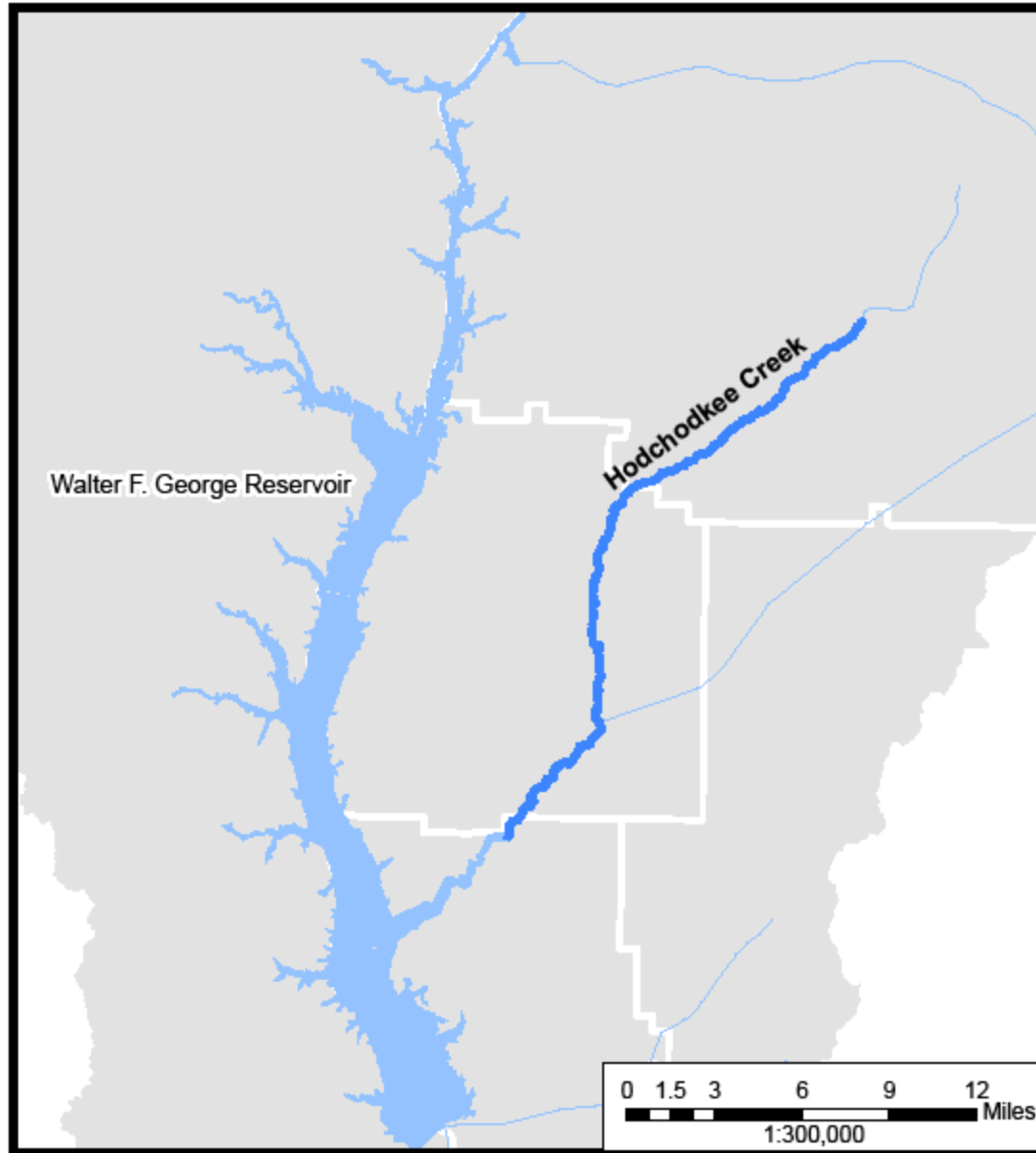


Chattahoochee Model Results





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



Resource Assessment Process

