



Surface Water Quality Resource Assessments



Georgia's **State Water Plan**

www.georgiawaterplanning.org



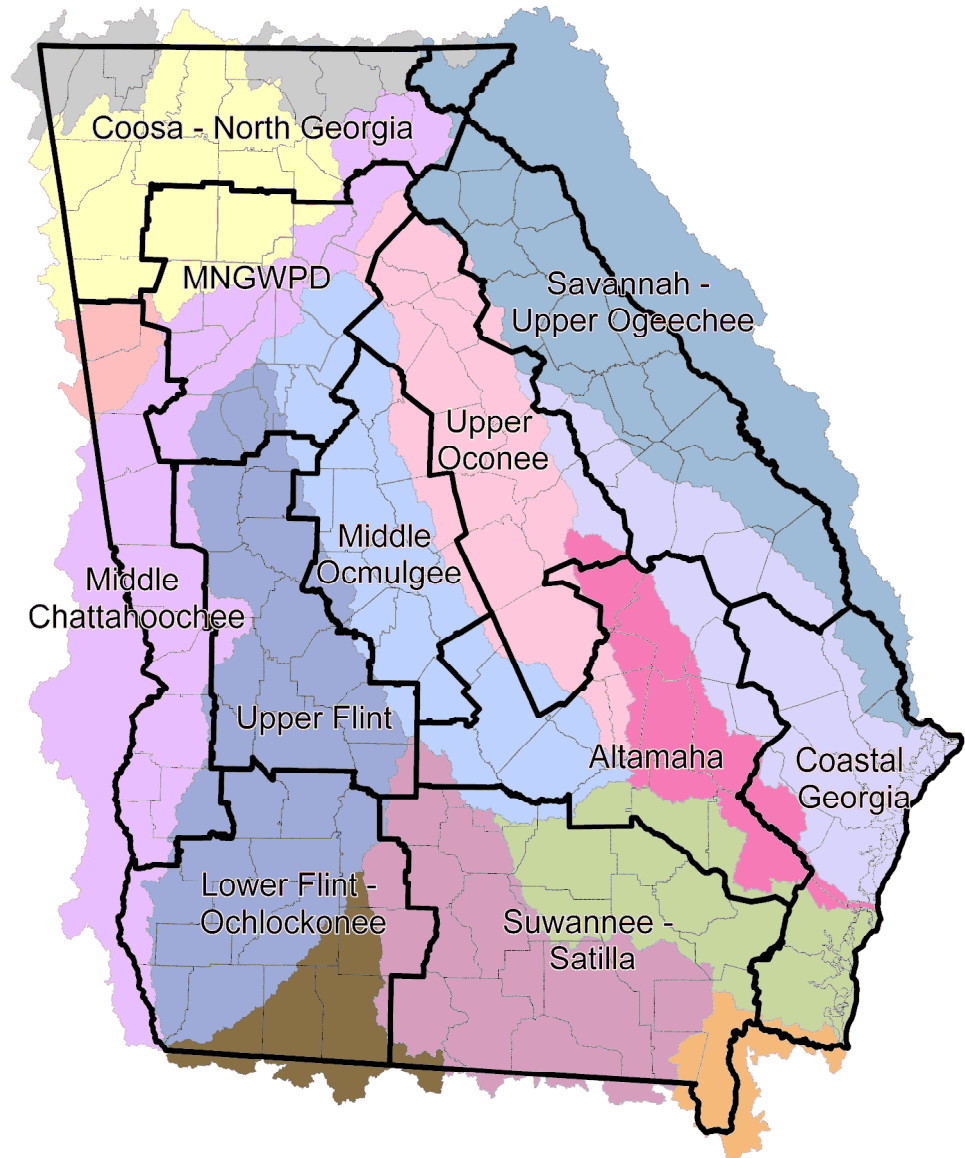
Presentation Overview

- Overview of Results
- Process
- Detailed Results

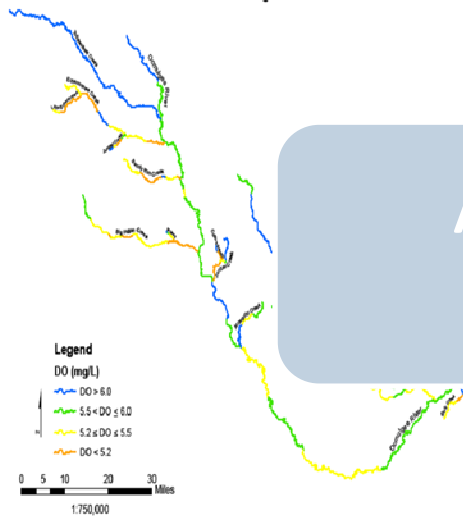


River Basins

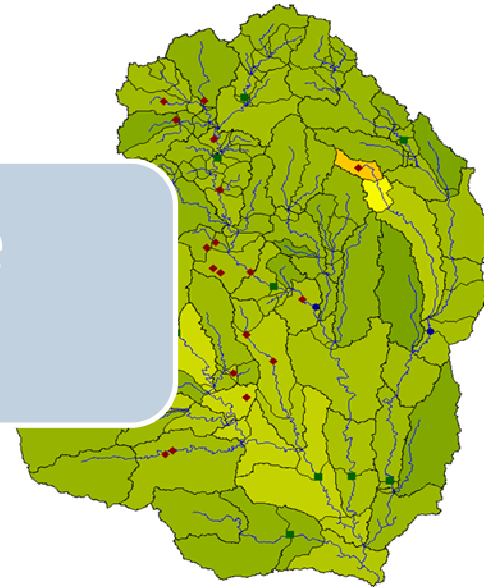
- Flint River Basin
- Ochlockonee River Basin



DOSAG Results for the Ocmulgee River and Tributaries



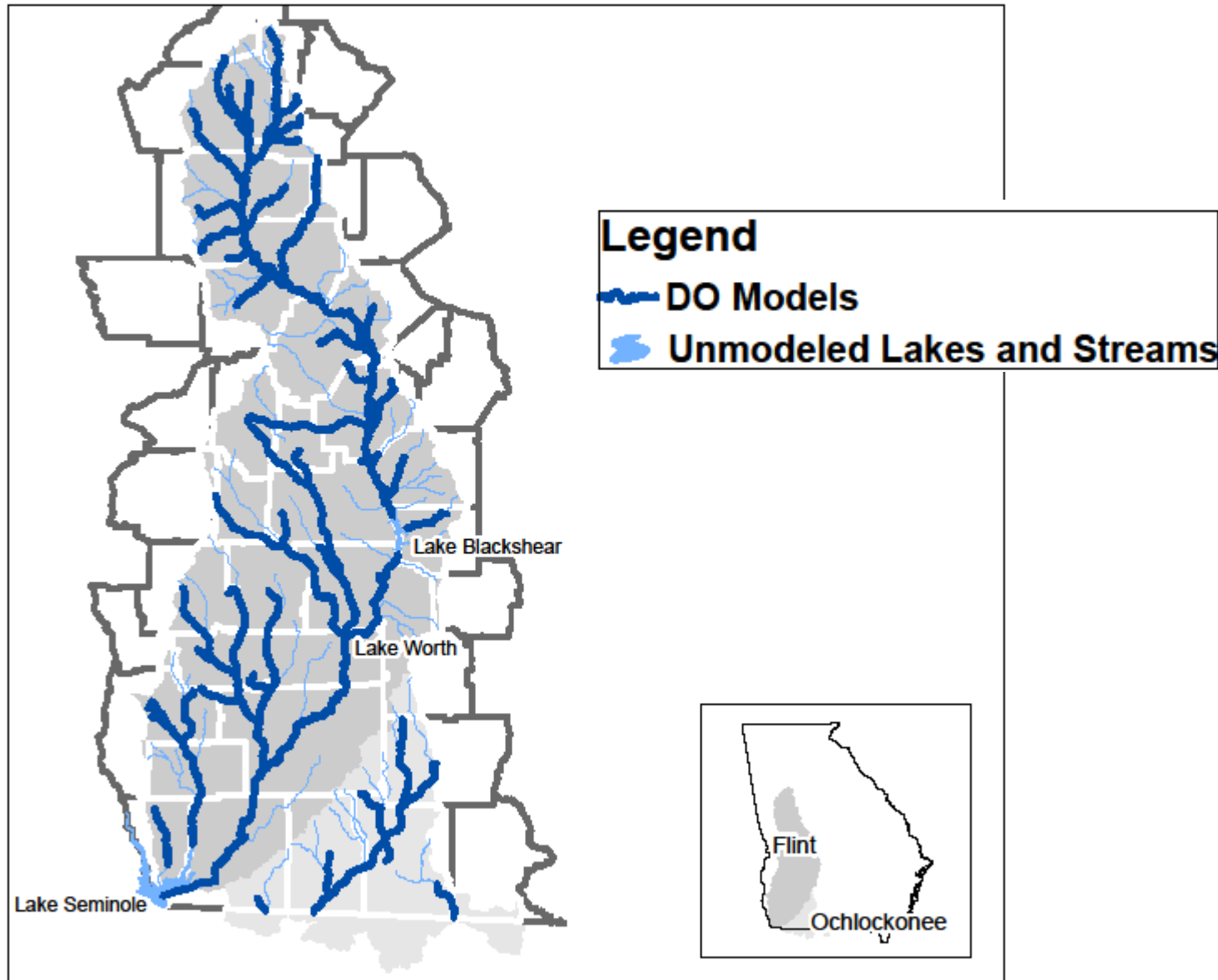
Assimilative
Capacity



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

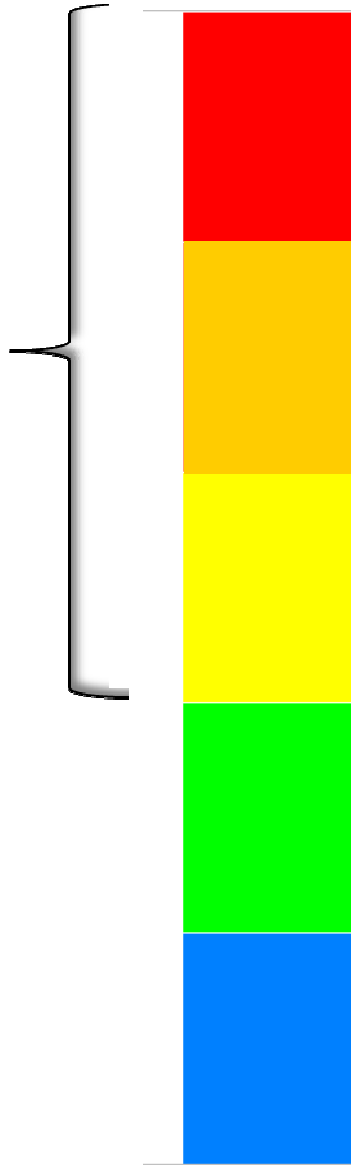
- Freshwater Fishing Dissolved Oxygen Standard
 - Daily average of 5.0 mg/L
 - Not less than 4.0 mg/L

- 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**

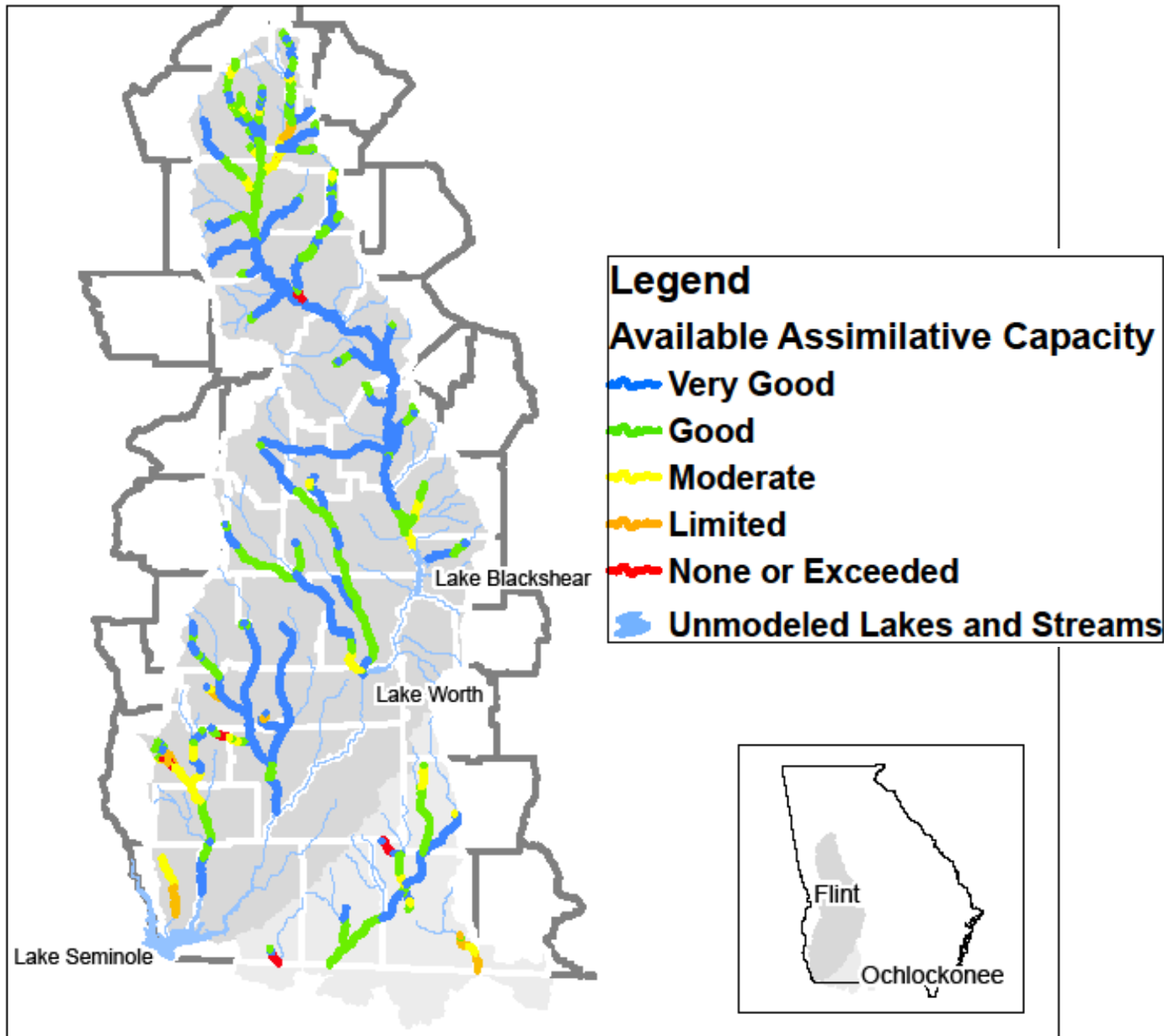
**> 0.2 mg/L to ≤ 0.5 mg/L of DO Available
Moderate**

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

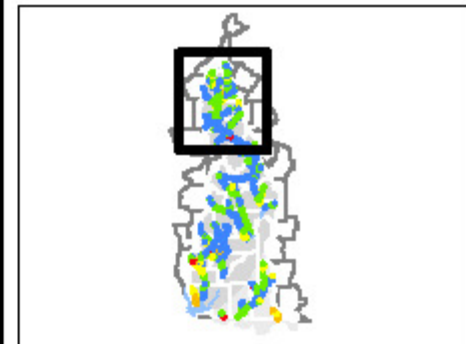
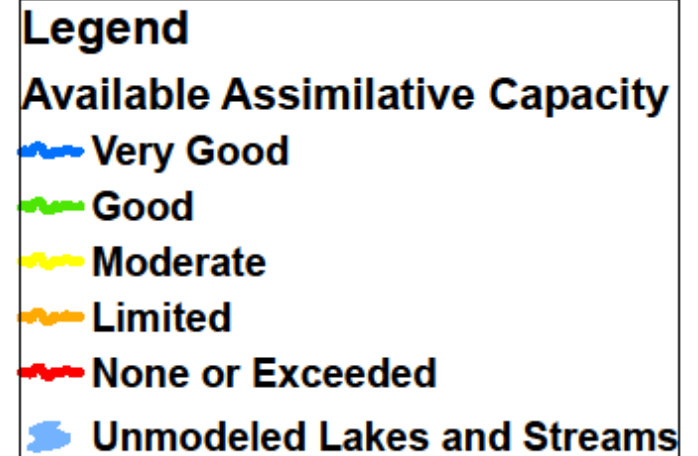
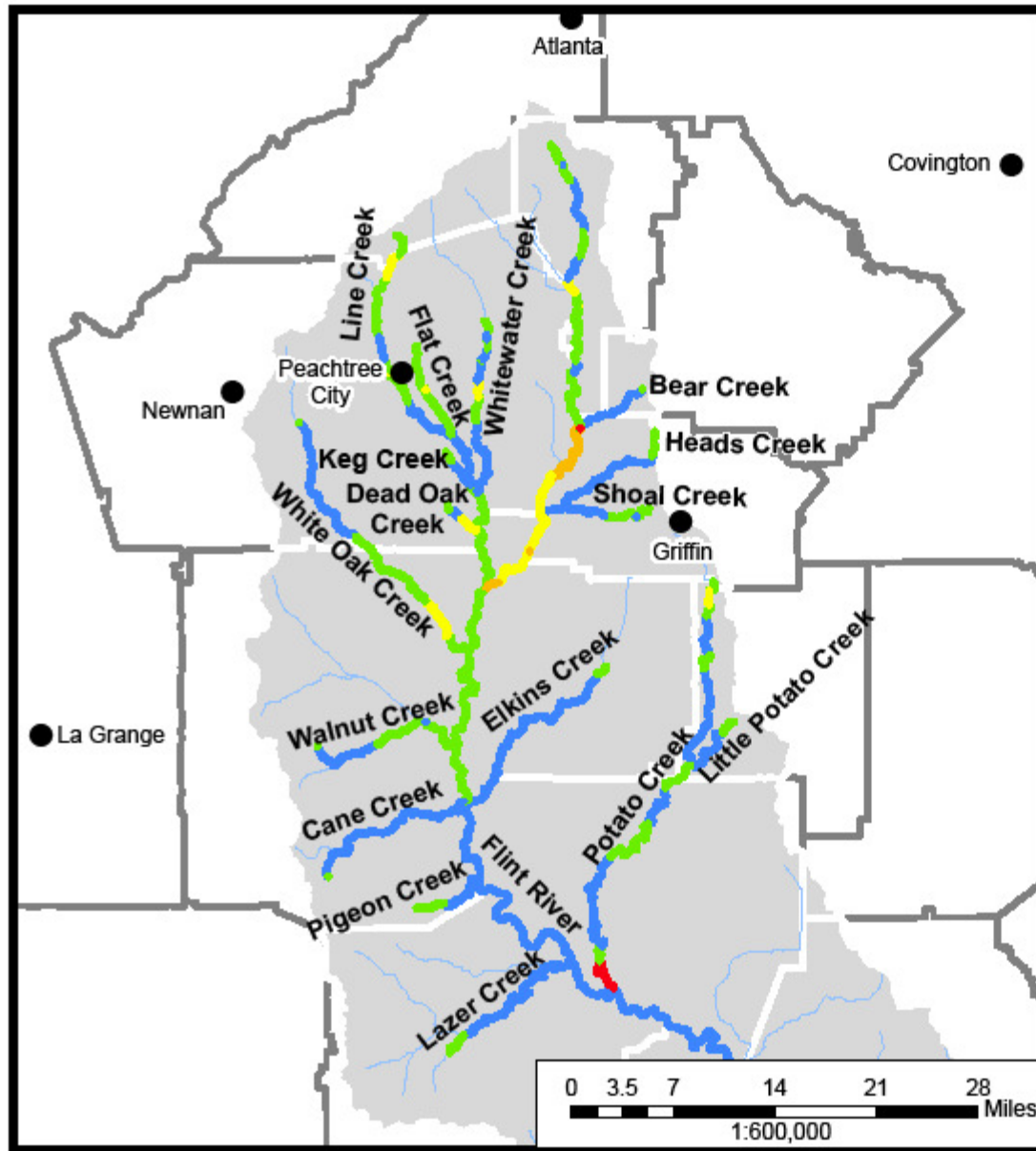
**≥ 1.0 mg/L of DO available
Very Good**



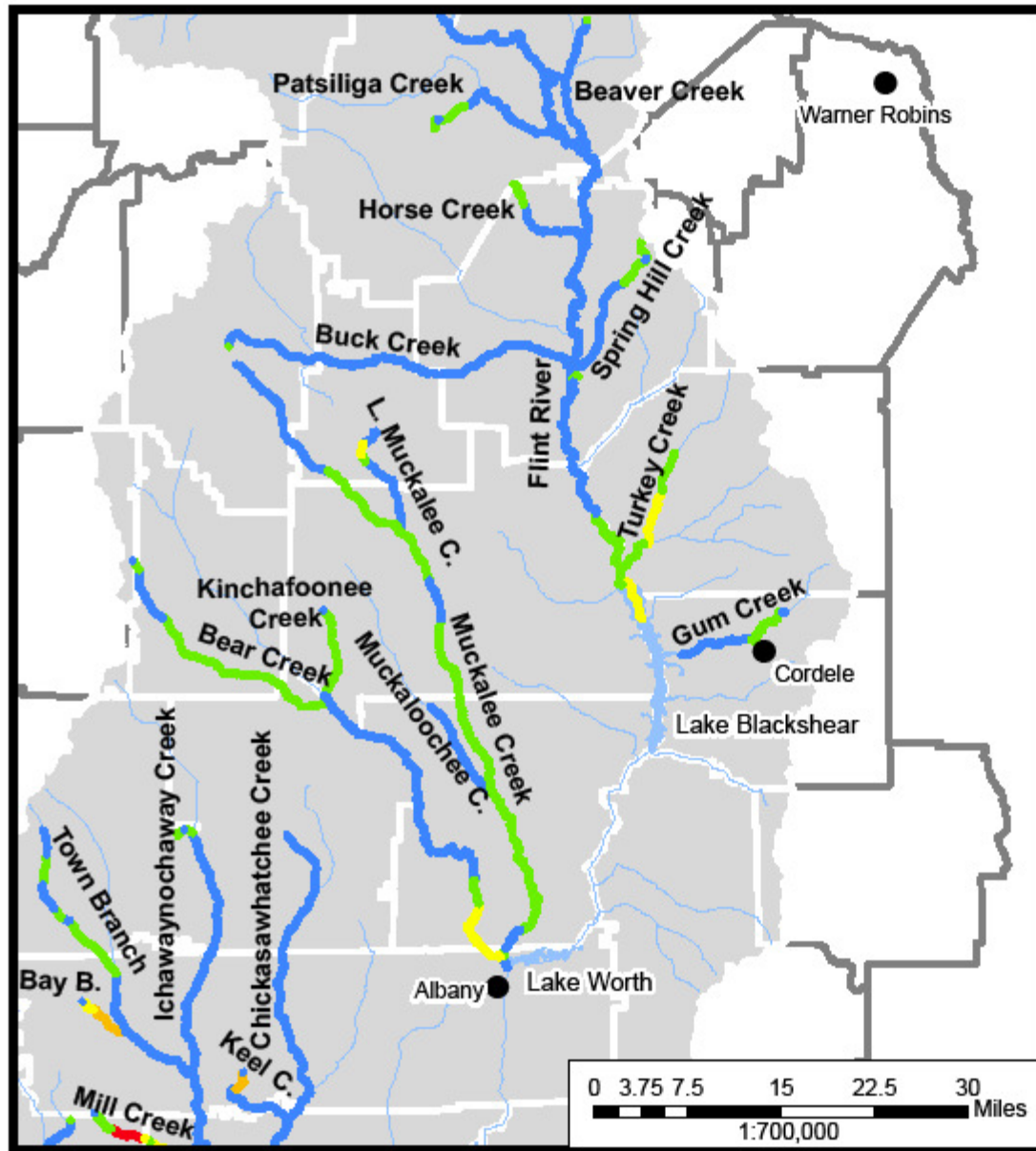
Flint Ochlockonee Model Results



Flint Model Results



Flint Model Results



Legend

Available Assimilative Capacity

Very Good

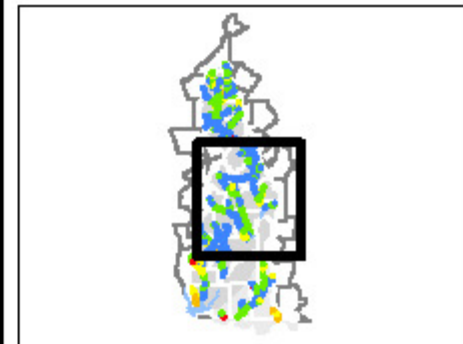
Good

Moderate

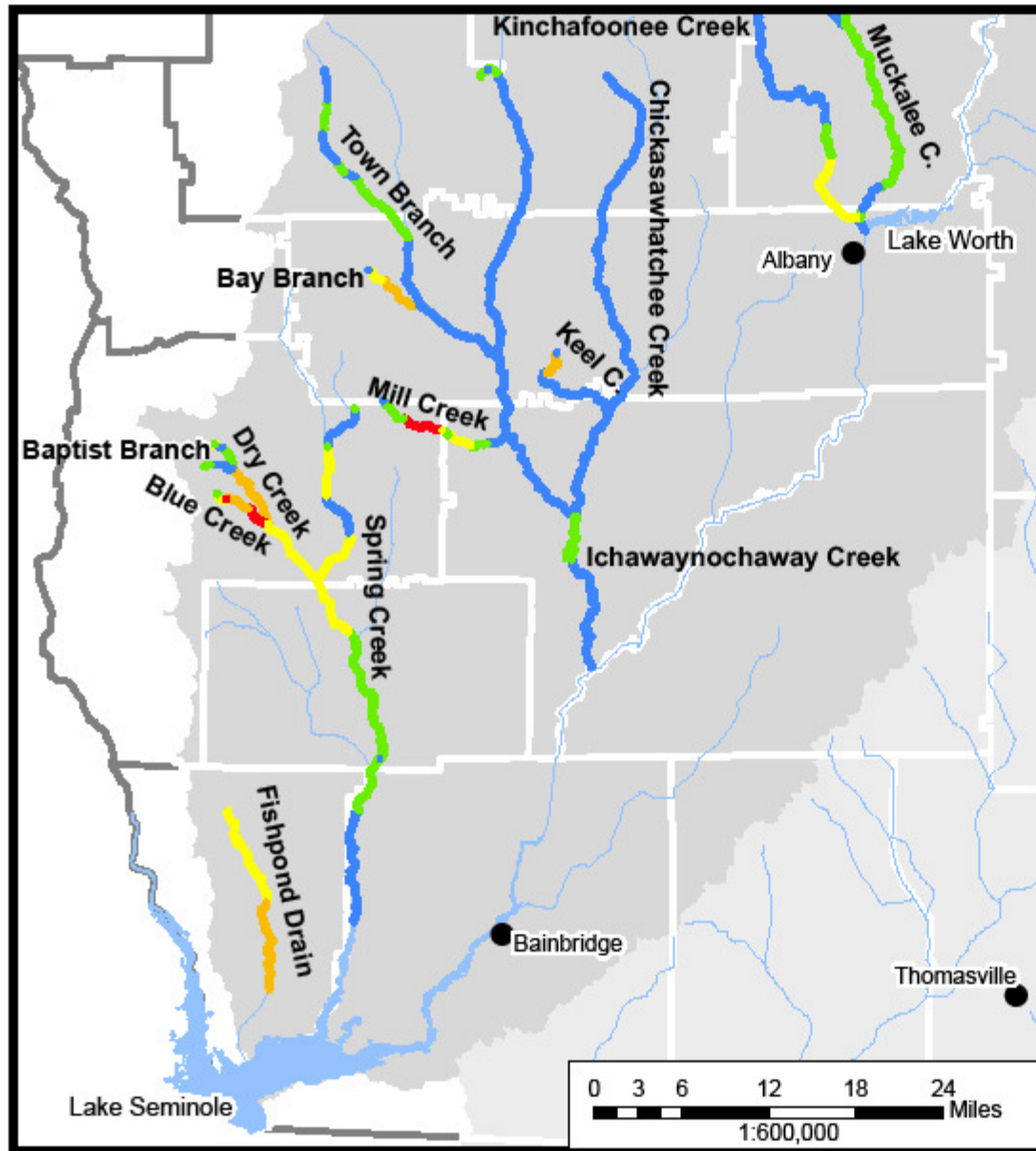
Limited

None or Exceeded

Unmodeled Lakes and Streams




Flint Model Results



Legend


Available Assimilative Capacity

 Very Good

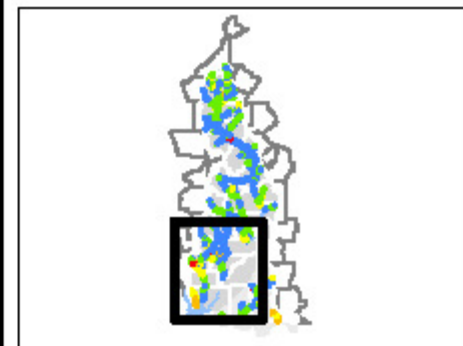
 Good

 Moderate

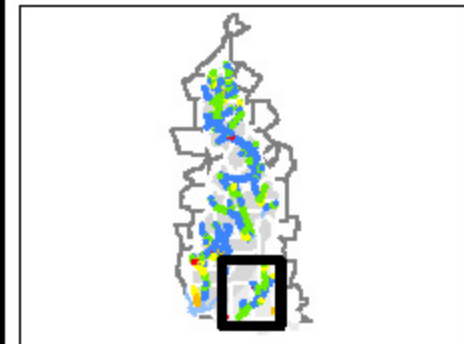
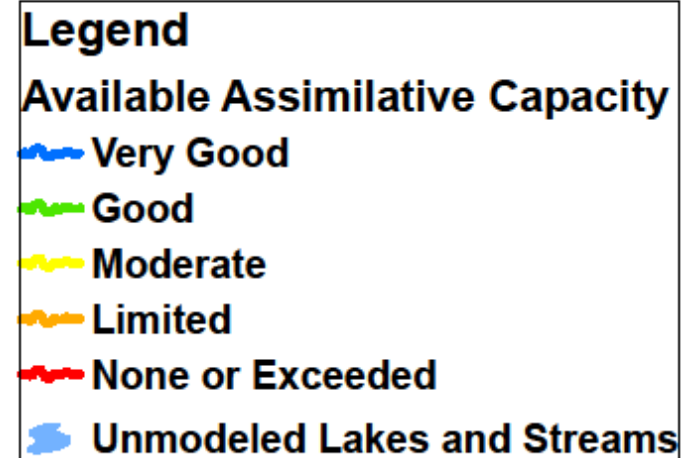
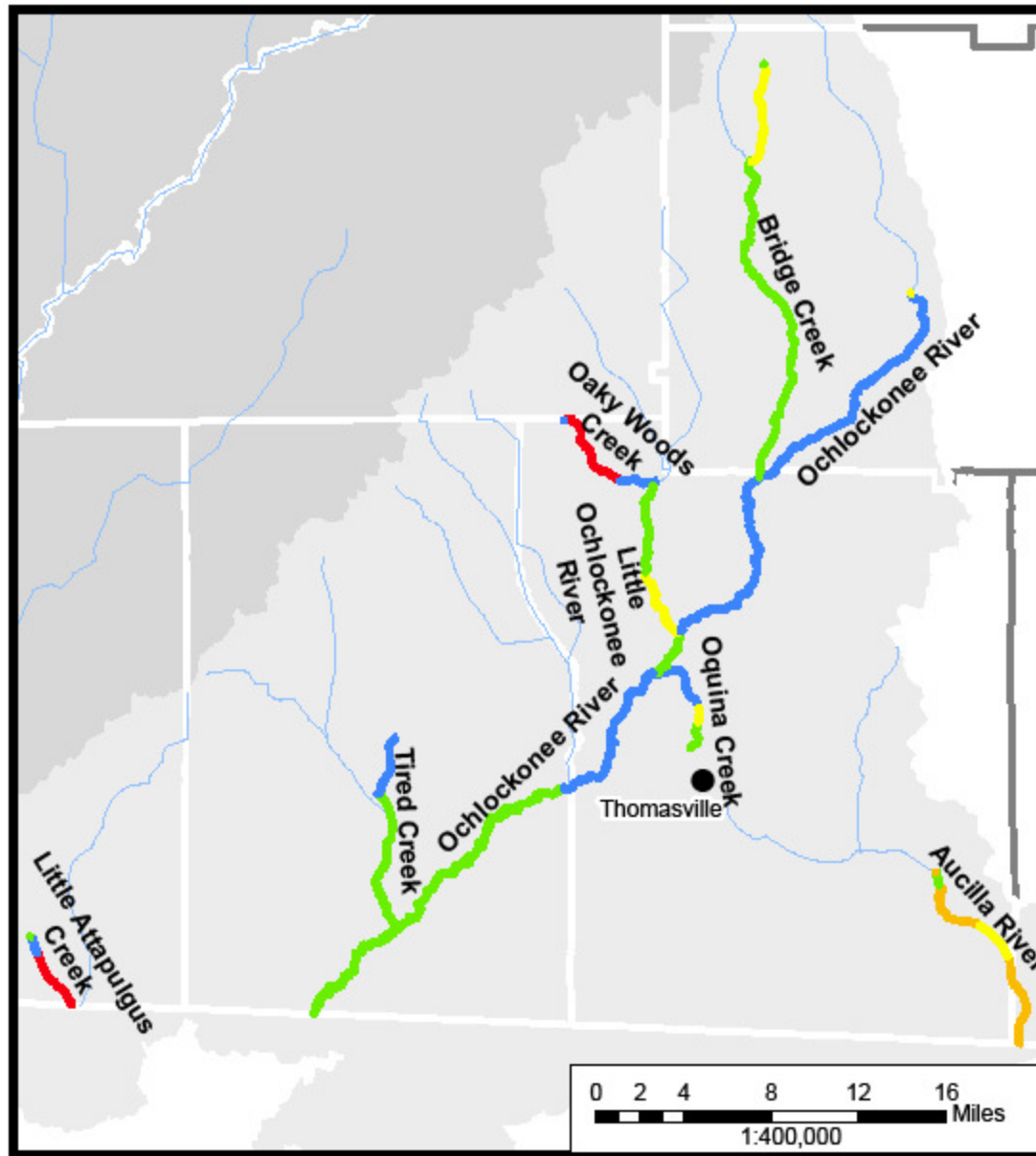
 Limited

 None or Exceeded

 Unmodeled Lakes and Streams



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



Resource Assessment Process

