Georgia's

State Water Plan

Regional Water Development and Conservation Plan Review and Revision
Upper Oconee Water Planning Council
November 17, 2016

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Upper Oconee Region Council Meeting 3

Georgia's State Water Plan

Upper Oconee Regional Water Council Meeting 3
Agenda – Thursday, November 17, 2016

Meeting Objectives:

1) Identify any additional Management Practices to recommend updating
2) Identify any additional Joint efforts/Council coordination elements
3) Report Back to Joint Meeting
4) Conduct Council Meeting Business

9:30 am – 4:00 pm **Joint Council Meeting #2** (Covered under separate agenda)

Upper Oconee Council Meeting

1:15 pm – 2:00 pm **Discussion**

- **Breakout Sessions Debrief**
  - What are implications for the Plan updates?
- **Management Practices Identified for Review and Revision**
  - Are there any additional MPs to be addressed in light of the result of the Resource Assessment updates?
- **Council Coordination Recommendations**
  - Is there any further joint coordination items that the Council wants to see occur prior to finalizing updates of their Plans?
- **Report Back**
  - What insights, messages, concerns, or priorities would be most beneficial to bring back and share with other Councils at this afternoon's Joint Council Meeting?

2:00 pm – 2:20 pm **Council Meeting Business**

- 319(h) Grant Project Update/Seed Grant Updates
- Approve meeting summary from Council Meeting 2
- Summary of Subcommittee Council Meeting - Sept 22, 2016
- Potential Office Hours/Subcommittee Conference Call
- New Business

2:20 - 2:30 pm **Public Comments**

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Upper Oconee Gap Summary: Surface Water

Round 1:

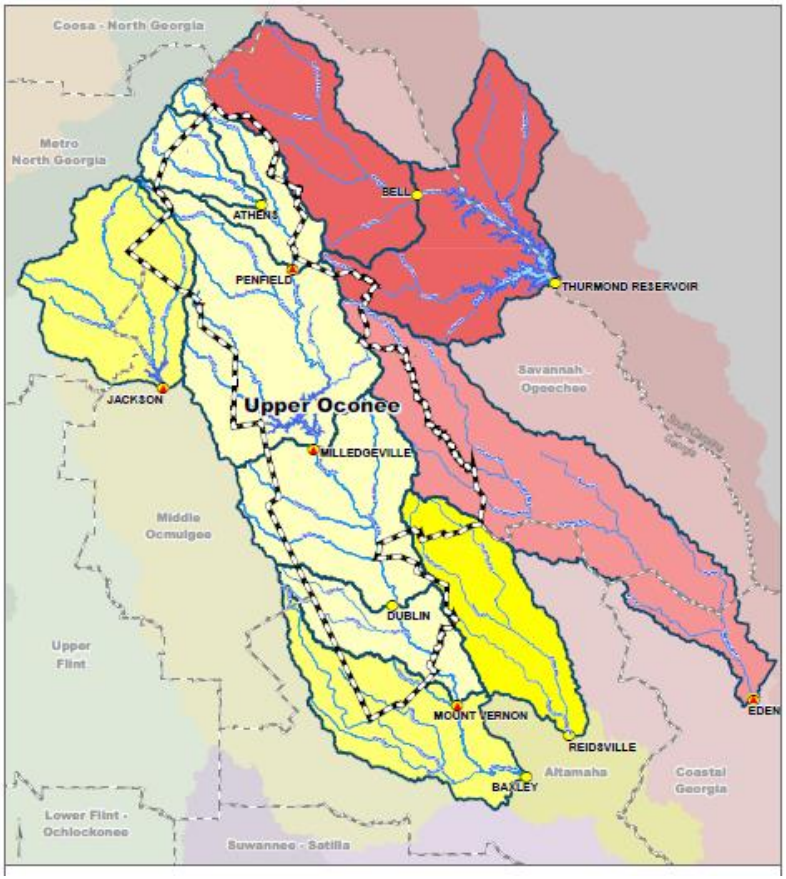
- A potential gap was identified at the Penfield node

Round 2:

- No potential gaps at the Penfield, Milledgeville, and Mount Vernon nodes

Summary:

- Decreased demand in surface water forecasts resulted in no gaps
- Modeling changes include
  - Water supply storage
  - Historical hydrological period (1939 - 2013)



Upper Oconee Gap Summary: Groundwater

Round 1:

- Combined Coastal Plain Aquifers projected a gap to begin in 2040 under dry conditions

Round 2:

- There are no updates or changes for Round 2

Summary:

- Potential gaps in groundwater in Coastal Region (Eden node)
  - Increased coordination & discussion between Councils

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Upper Oconee Gap Summary: Assimilative Capacity/Water Quality

River Basin	Number of Permitted Facilities	Number of Facilities with Increase Permitted Flow in 2050	Number of Facilities with Tighter BOD limits in 2050	Number of Facilities with New or Tighter NH_3 limits in 2050	Number of Facilities with New or Tighter DO limits in 2050
Savannah	63	26	34	50	16
Ogeechee	27	9	2	21	1
Oconee	53	21	18	38	10
Ocmulgee	48	11	25	37	1
Altamaha	15	3	8	11	3
Suwannee	29	7	10	26	10
Satilla	17	4	7	10	8
St Marys	8	2	4	3	4
Total	260	83	108	196	53

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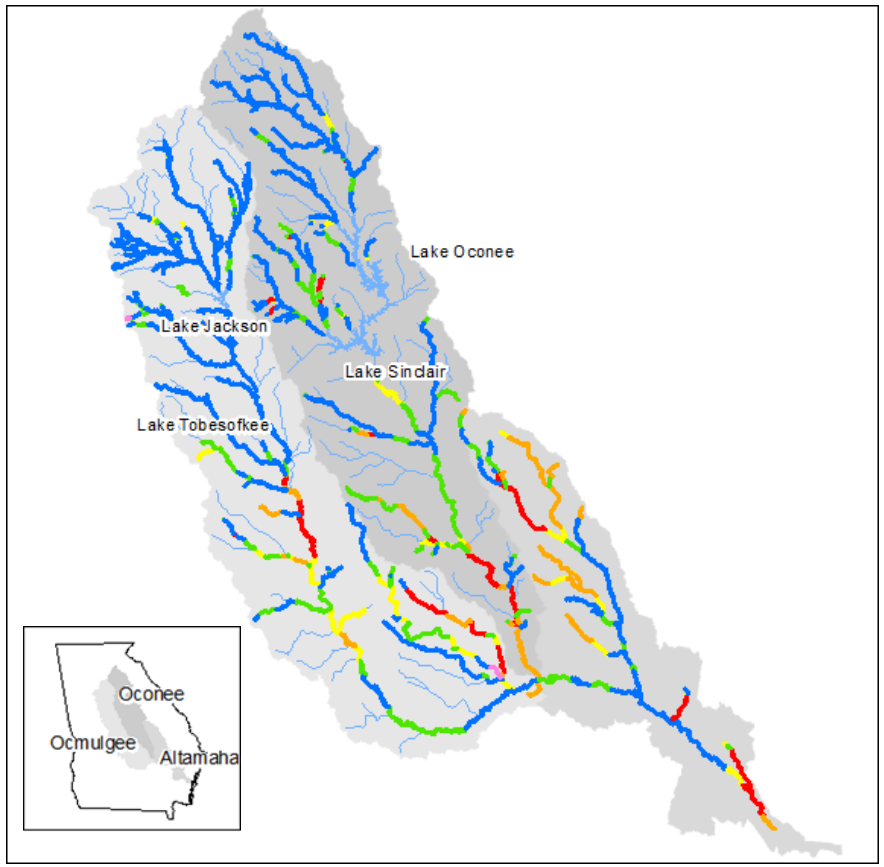
Surface Water Quality/Assimilative Capacity Gaps

Round 2:

- DOSAG & GA Estuary Models
- 2000 thru 2012 (2012 is critical year)
- Preliminary Results for Round 2:
  - Assimilative capacity for DO Future Conditions appear to be generally improving compared to Round 1

Oconee, Ocmulgee and Altamaha: Assimilative Capacity

Current Permitted

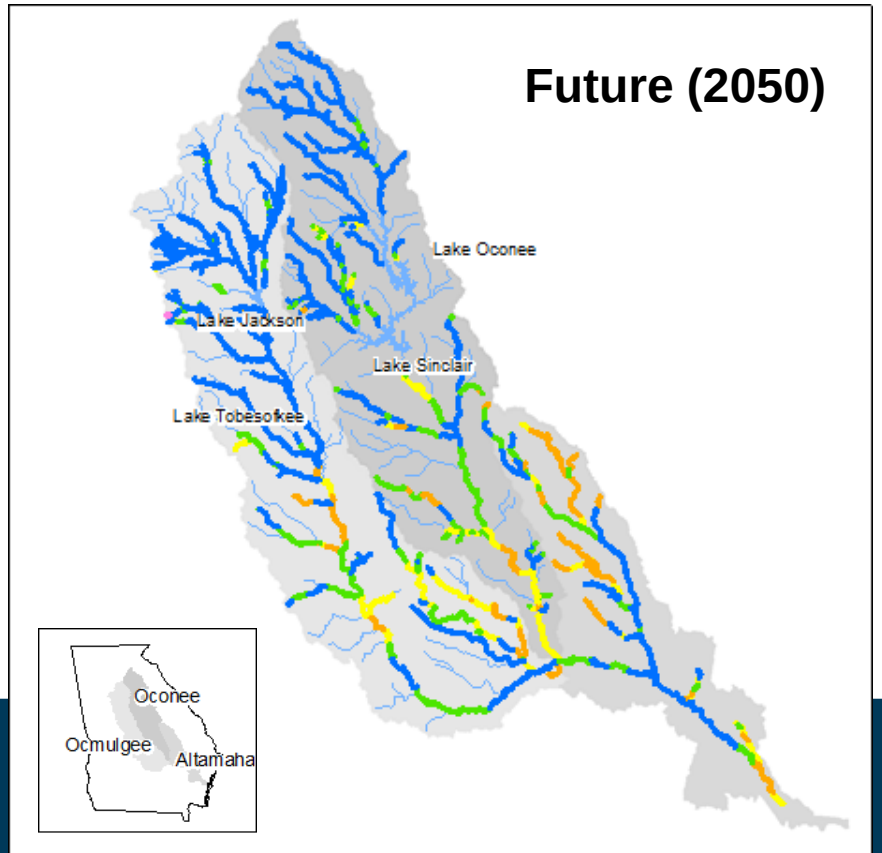


Legend

Avalable Assimilative Capacity

- Very Good ≥ 1 mg/L DO available
- Good 0.5 mg/L to < 1 mg/L DO available
- Moderate 0.2 mg/L to < 0.5 mg/L DO available
- Limited >0 mg/L to <0.2 mg/L DO available
- At Assimilative Capacity 0 mg/L DO available
- None or Exceeded < 0.0 mg/L DO available
- Unmodeled Lakes and Streams

Future (2050)



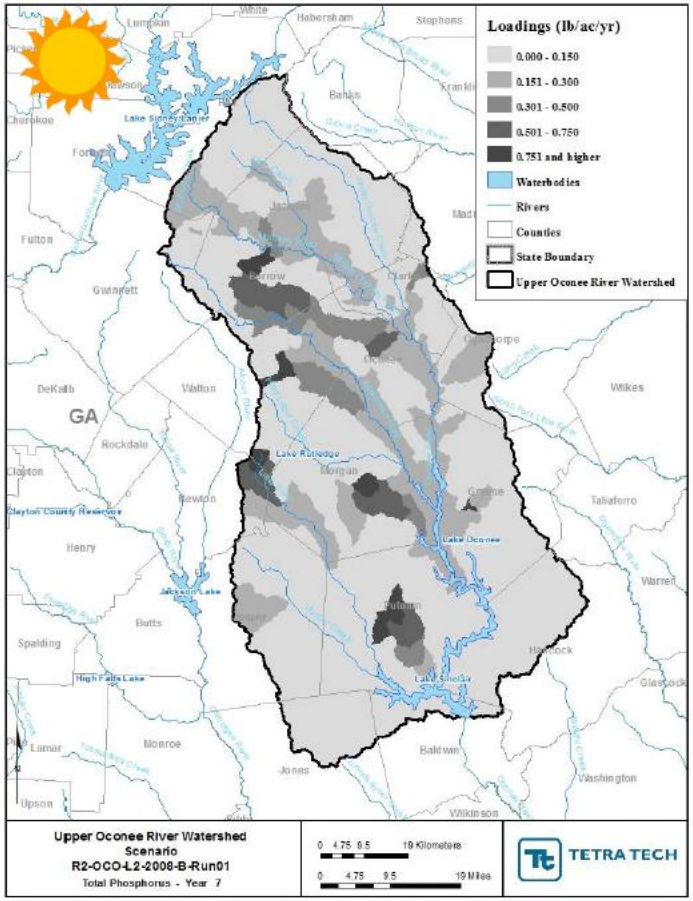
Surface Water Quality/Assimilative Capacity Gaps

- EPD also examined nutrient (TN and TP) in the Region
  - Dry & Wet years
  - Areas of high loadings in **dry** years can indicate point sources as potential cause (i.e., wastewater discharge)
    - Barrow, Walton, and Jackson Counties show highest forecasted increases in wastewater discharge
    - High TN and TP loading areas near Barrow and Walton Counties
  - Areas of high loading in **wet** years are indicative on nonpoint source runoff
    - Lower reaches of Ocmulgee and Oconee Rivers and confluence with Altamaha River

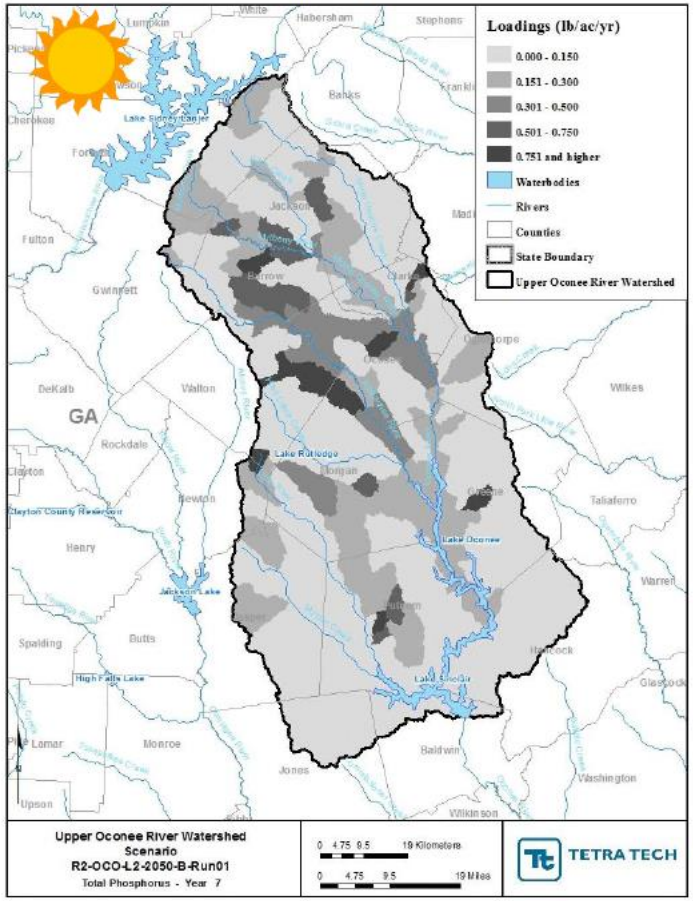
Surface Water Quality/Assimilative Capacity Gaps

UPPER OCONEE BASIN: TOTAL P "HEAT MAPS" – DRY YEAR

CURRENT CONDITIONS



FUTURE CONDITIONS (2050)



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Upper Oconee: Summary Draft of Gaps

County	Groundwater Gaps	Surface Water Gaps	Water Quality – Assimilative Capacity Gaps	Water Quality 303 (d)
Baldwin		No potential gaps at the Penfield, Milledgeville, and Mount Vernon nodes.	All streams in the Upper Oconee Regional Water Planning Area have assimilative capacity at least at the limited and above level.	Yes
Barrow				Yes
Clarke				Yes
Greene				Yes
Hancock				Yes
Jackson				Yes
Laurens	Yes			Yes
Morgan				Yes
Oconee				Yes
Putnam				Yes
Walton				Yes
Washington	Yes			Yes
Wilkinson	Yes			Yes
Total	**3**	**0**	**0**	**13**

Upper Oconee: Management Practices

- Review Summary Handout

Upper Oconee: Report Back

- Questions:
  - What are the implications for Plan updates?
  - Are there any lingering questions or concerns?
  - What, if any, additional information is needed for selecting management practices?
  - Are there any further joint coordination items desired prior to finalizing Plan updates?

Thank You!

Questions? Comments? Need More Information?

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Optional Slides

Population Changes (Planning Period: 2015 – 2050)

Counties with Highest Projected Population Growth	% Change	Barrow	148%
		Walton	83%
		Jackson	80%
	# People	Barrow	111,900
		Walton	74,200
		Jackson	51,000

Counties with Lowest Projected Population Growth	% Change	Hancock	-48%
		Wilkinson	-21%
		Washington	-8%
	# People	Hancock	-4,200
		Wilkinson	-2,000
		Washington	-1,600

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Water Demand (Planning Period: 2015 – 2050)

Counties with Highest Water Demand Increase (Excluding Agriculture)	% Change	Barrow	135%
		Walton	74%
		Jackson	70%
	MGD	Barrow	12
		Walton	7
		Jackson	5

Wastewater Demand (Planning Period: 2015 – 2050)

Counties with Largest Increase in Wastewater Flows	% Change	Barrow	144%
		Walton	126%
		Jackson	70%
	MGD	Walton	13
		Barrow	11
		Jackson	4

*Red text denotes counties with highest population growth statistics

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Demand Forecasting Statistics (cont.)

- Water Demand by sector over the Planning Period (2015 – 2050)

Counties with Highest Surface Water Demand Increase (Excluding Agriculture)	% Change	Barrow	138%
		Walton	76%
		Jackson	70%
	MGD	Barrow	8
		Walton	5
		Jackson	4

Counties with Highest Ground Water Demand Increase (Excluding Agriculture)	% Change	Barrow	130%
		Walton	69%
		Jackson	68%
	MGD	Barrow	4
		Walton	2
		Oconee	0.9

*Red text denotes counties with highest population growth statistics

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Surface Water Quality/Assimilative Capacity Gaps

- EFDC Lake & Estuary Model Results
  - Limited to no assimilative capacity in lower reaches of Altamaha River and Altamaha Sound
  - Lower assimilative capacity may be due to slower moving waters which contribute to naturally low DO levels

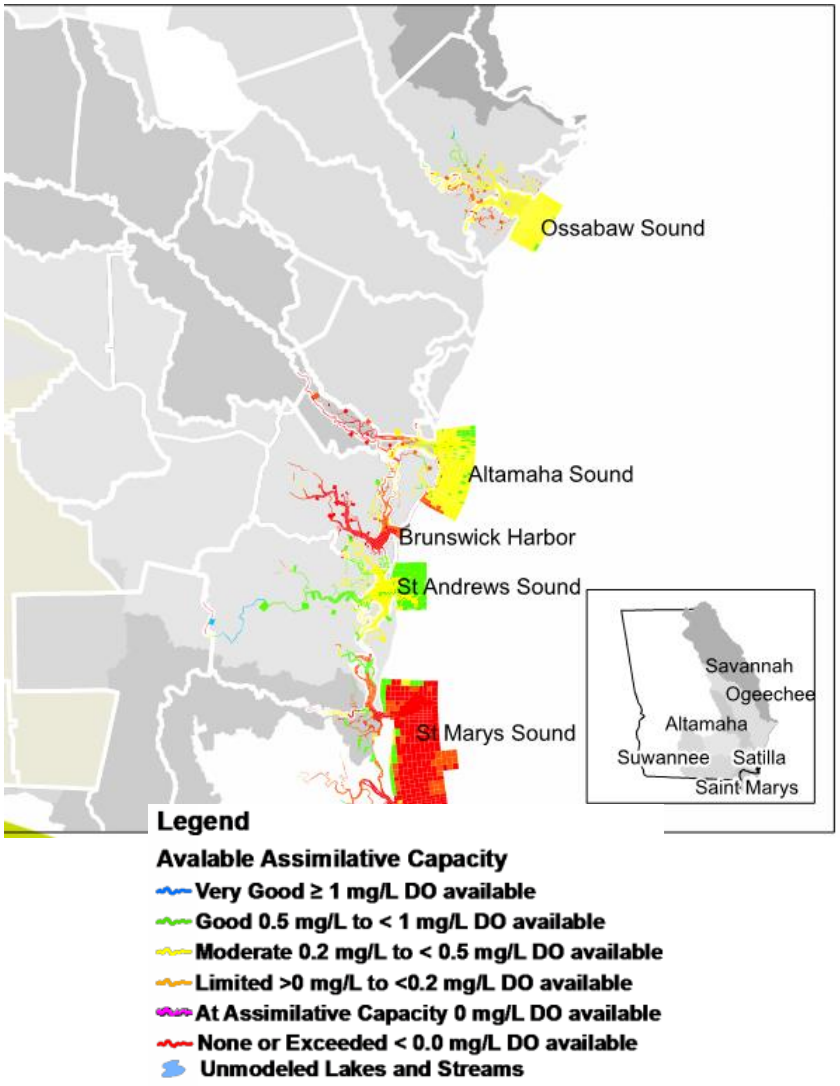

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Table 5-1: Groundwater Assessment Results

Aquifer	Sustainable Yield (MGD)		Forecasted Groundwater Demand (MGD)[a]	
	Low	High	2010	2050
South-Central Georgia and Eastern Coastal Plain of the Floridan Aquifer[b]	868	982	580	739
Cretaceous Aquifer Between Macon and Augusta	347	445	246	303
Combined Coastal Plain Aquifers[c]	1,066	1,229	922	1,160

Source: Initial Future Groundwater Availability Assessment, July 2010.

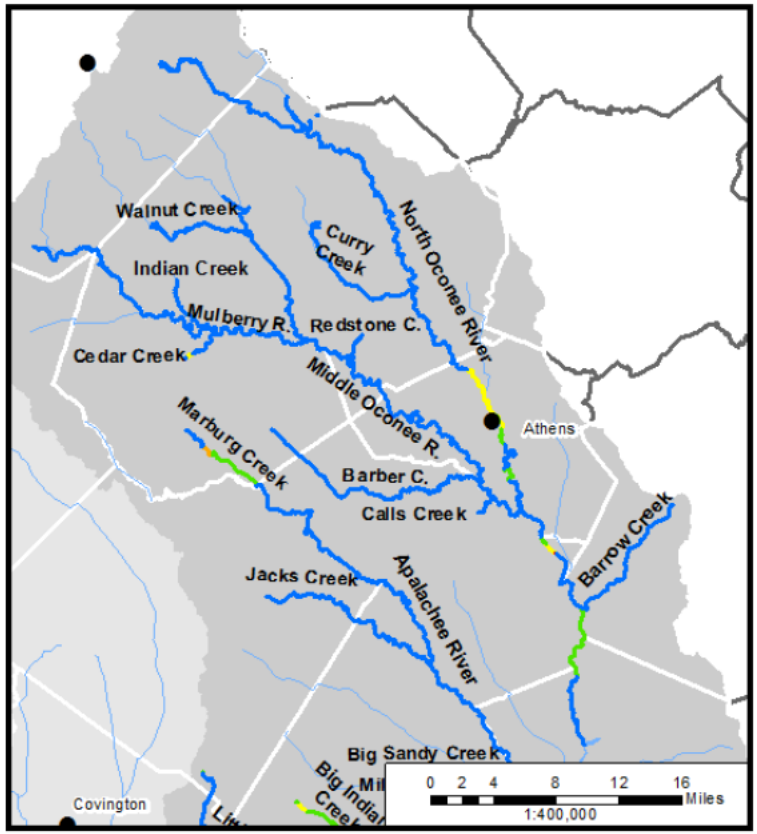
Notes:

[a] Based on dry year (75% agricultural use).

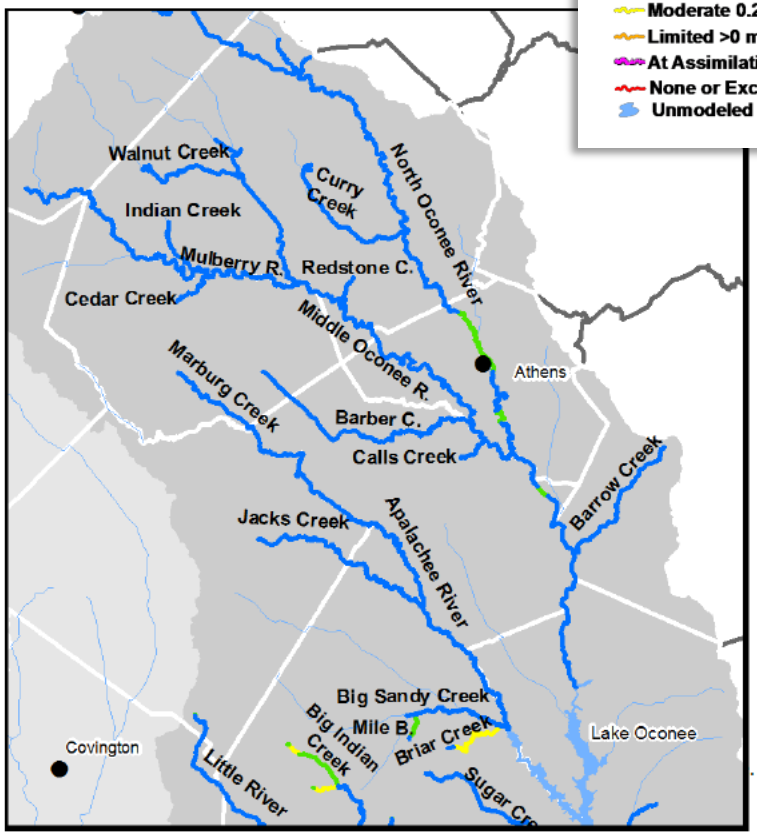
[b] Only a small portion of the Region includes the Floridan aquifer.

[c] Also includes yield from Claiborne aquifer which is located outside of the Region.

Oconee Basin DOSAG Model Results: Upper Portion



Round 1



Round 2

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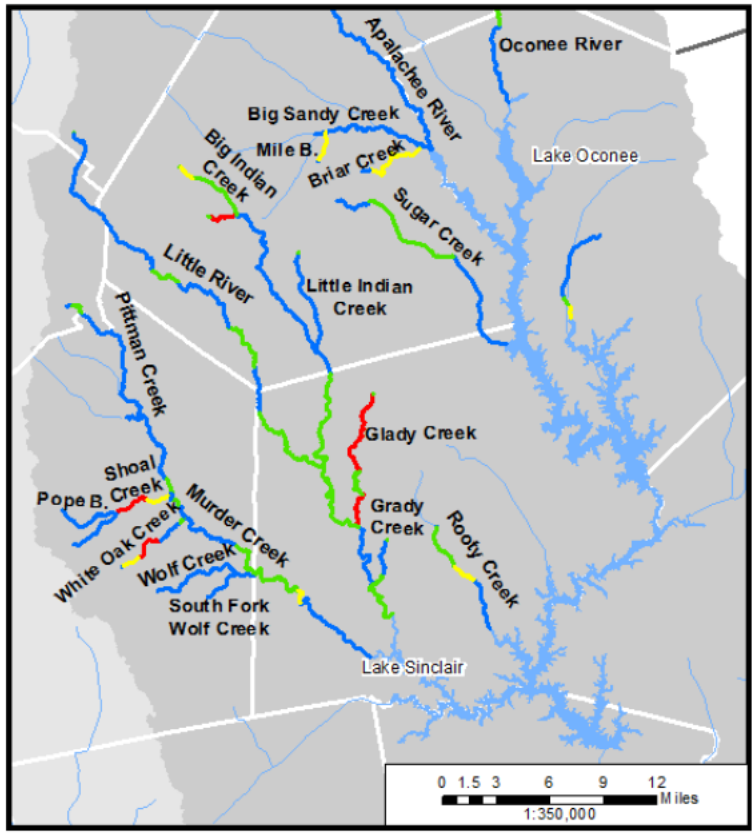
Oconee Basin DOSAG Model Results: Middle Portion



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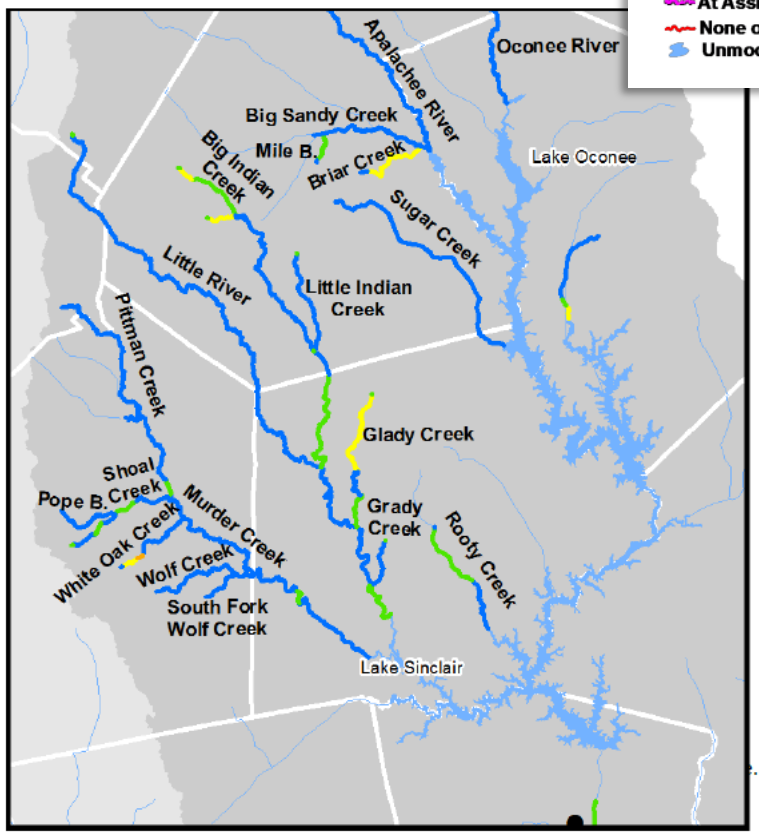

Round 2

Legend

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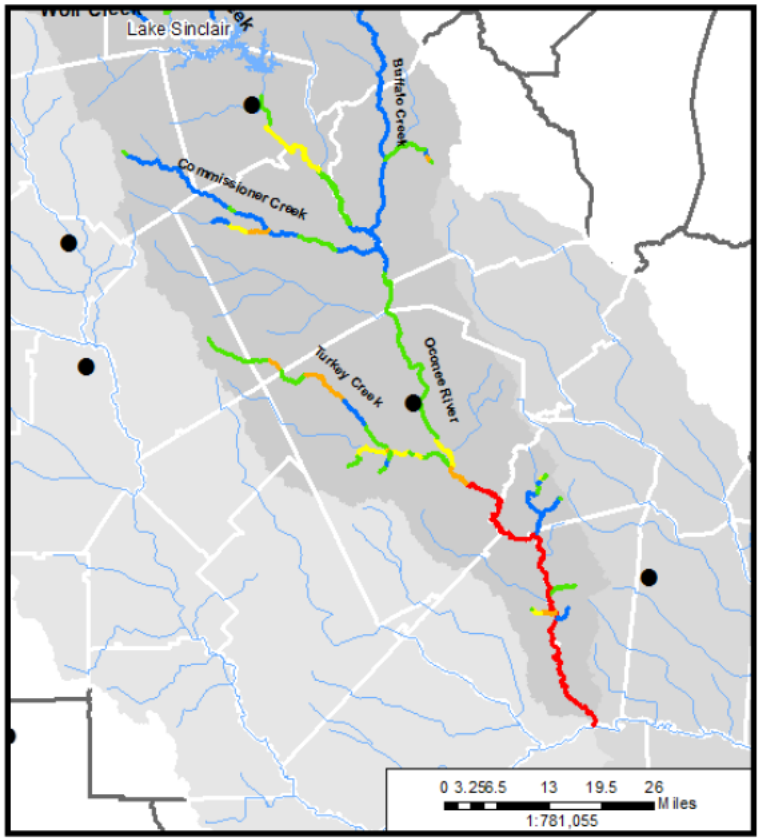
Oconee Basin DOSAG Model Results: Lower Portion



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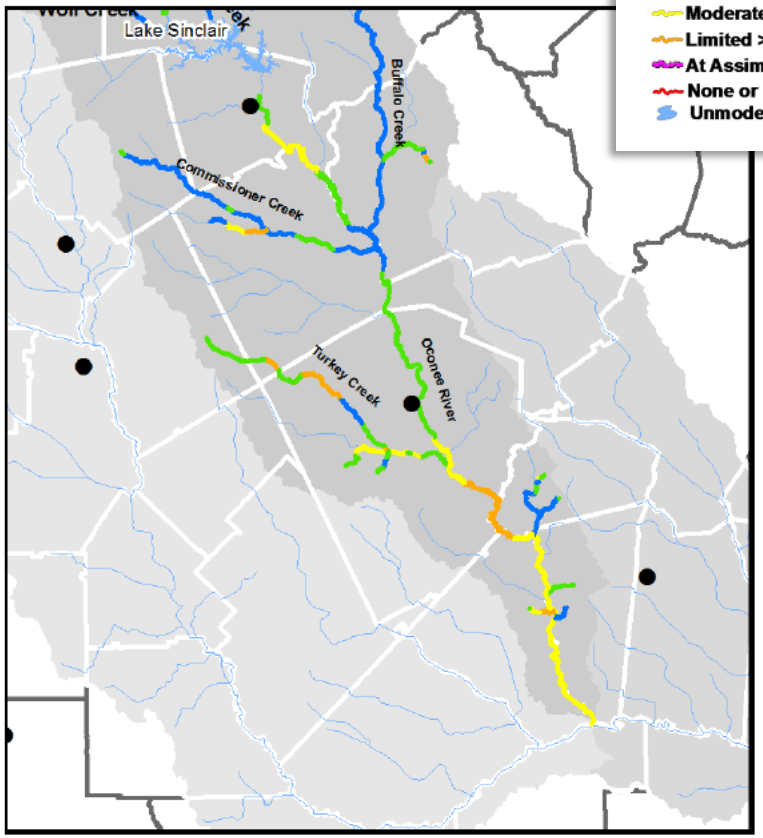

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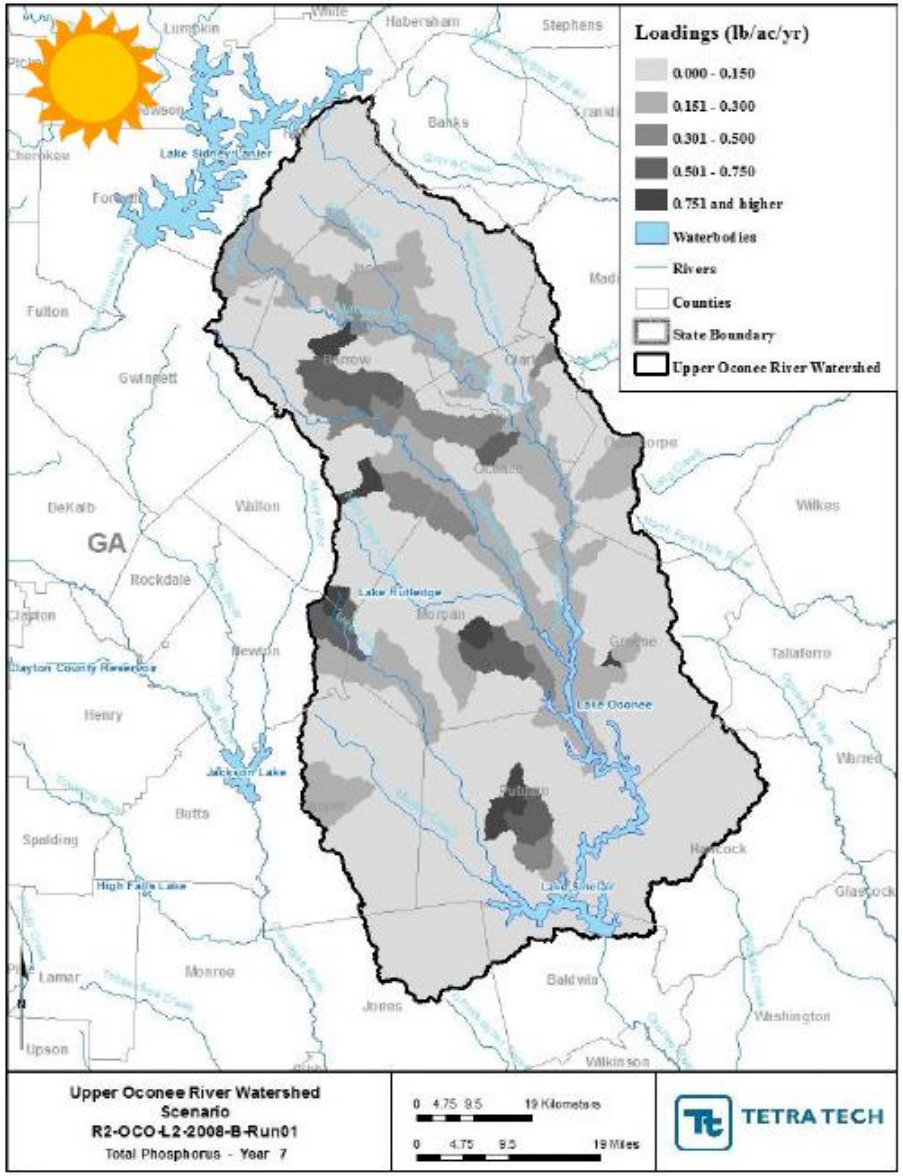
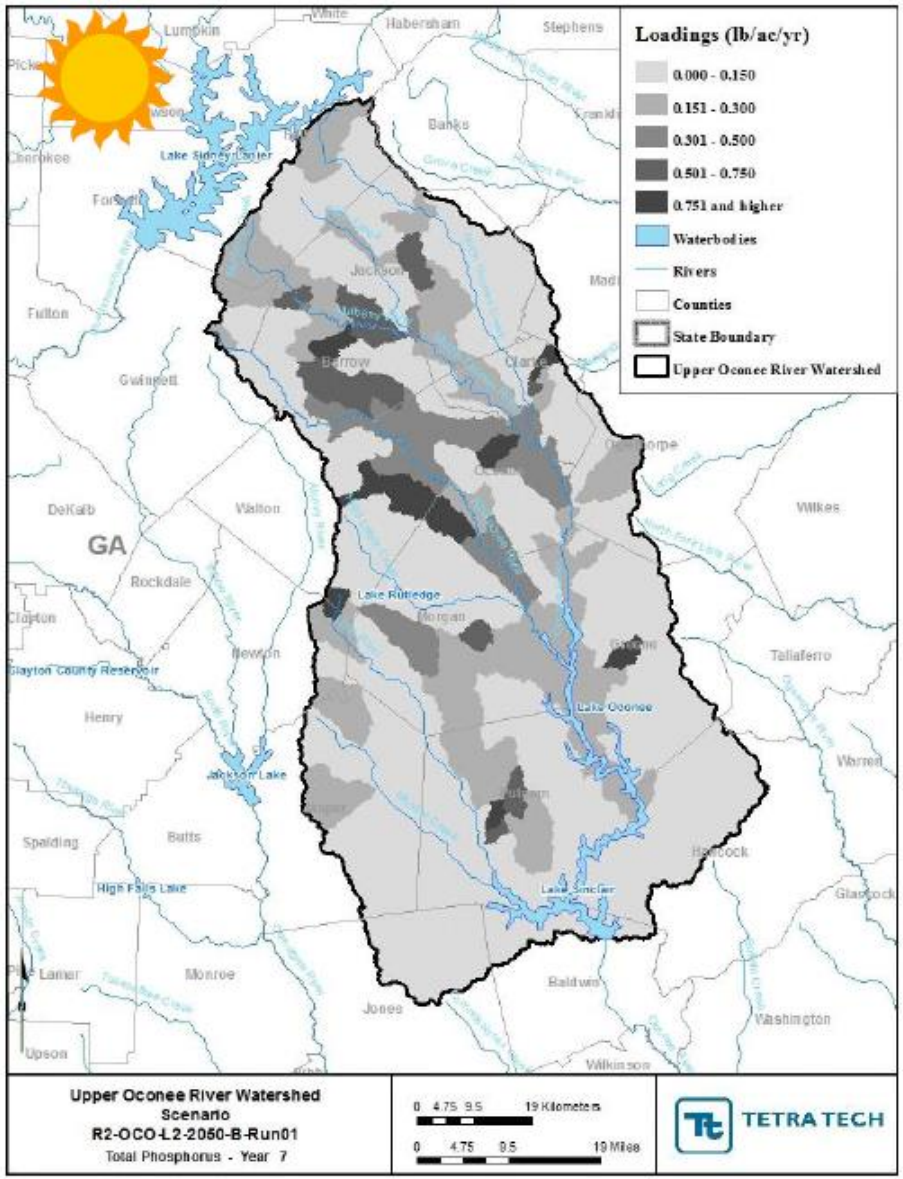
Oconee Basin: Total P Heat Maps - Dry

Current Conditions

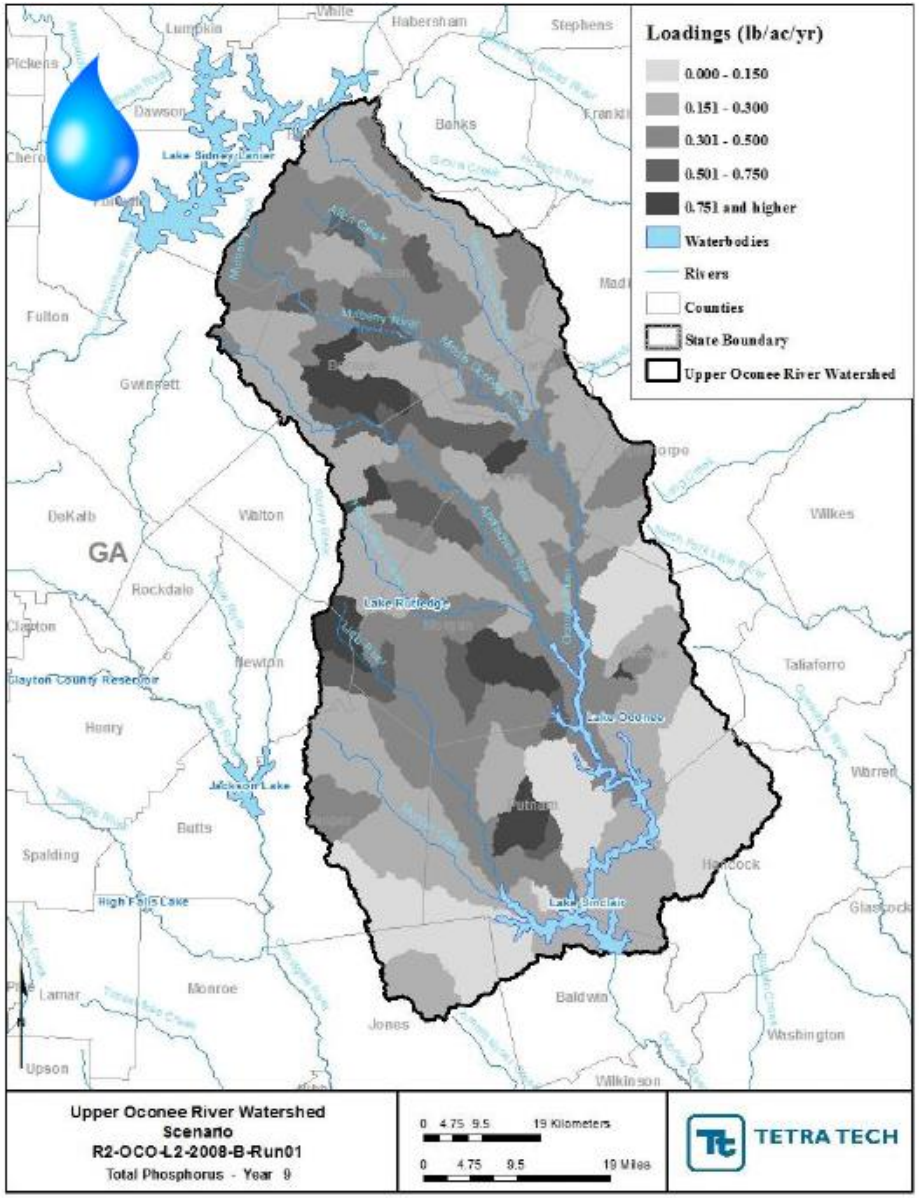


Future Conditions (2050)



Oconee Basin: Total P Heat Maps - Wet

Current Conditions



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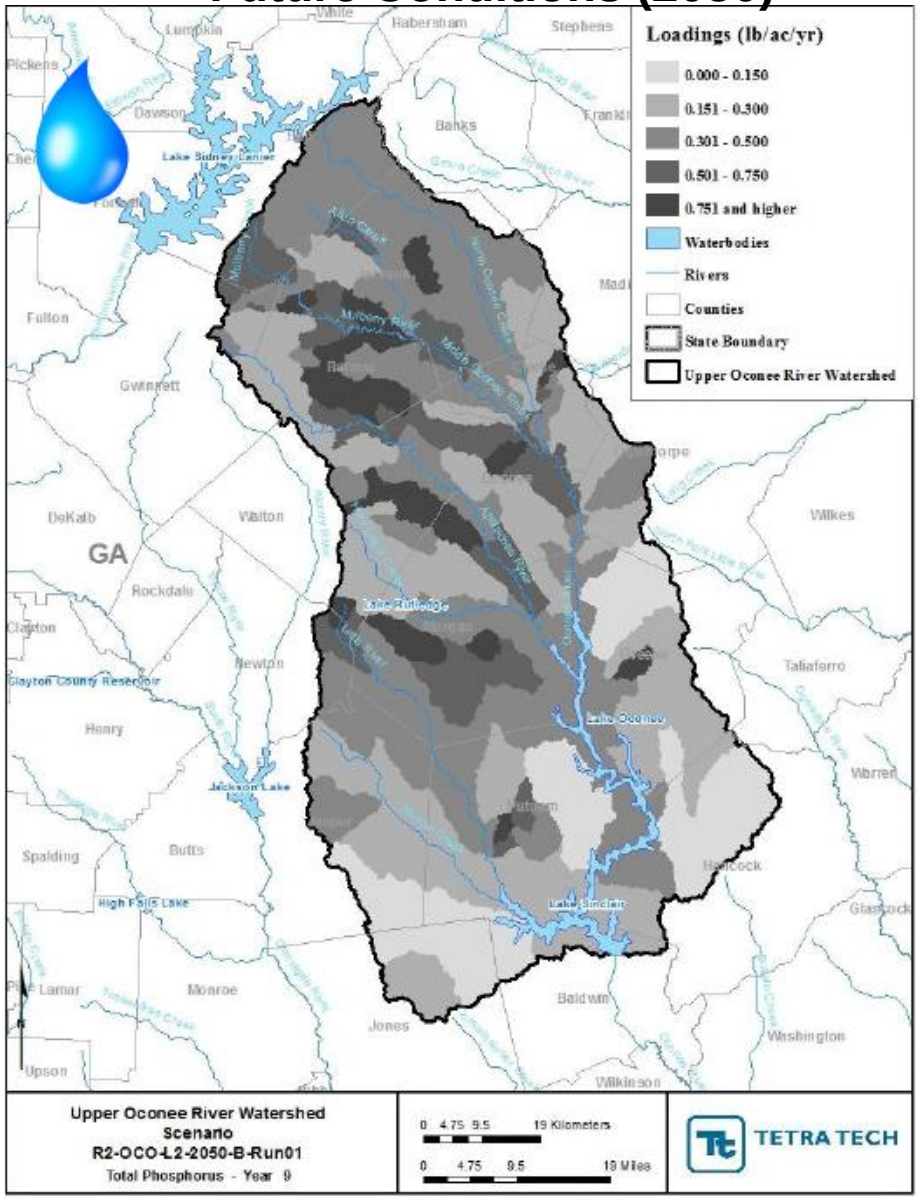
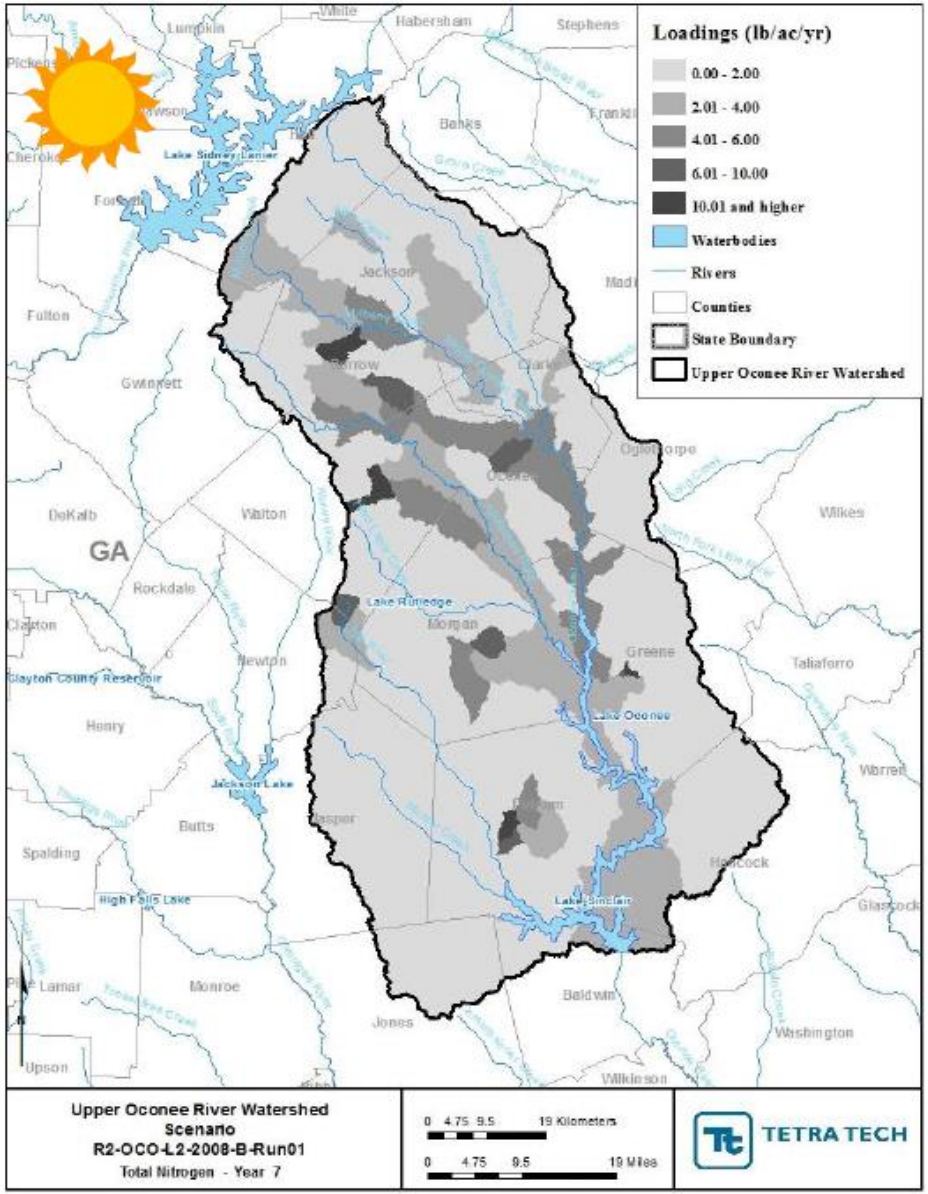


Oconee Basin: Total N Heat Maps - Dry

Current Conditions



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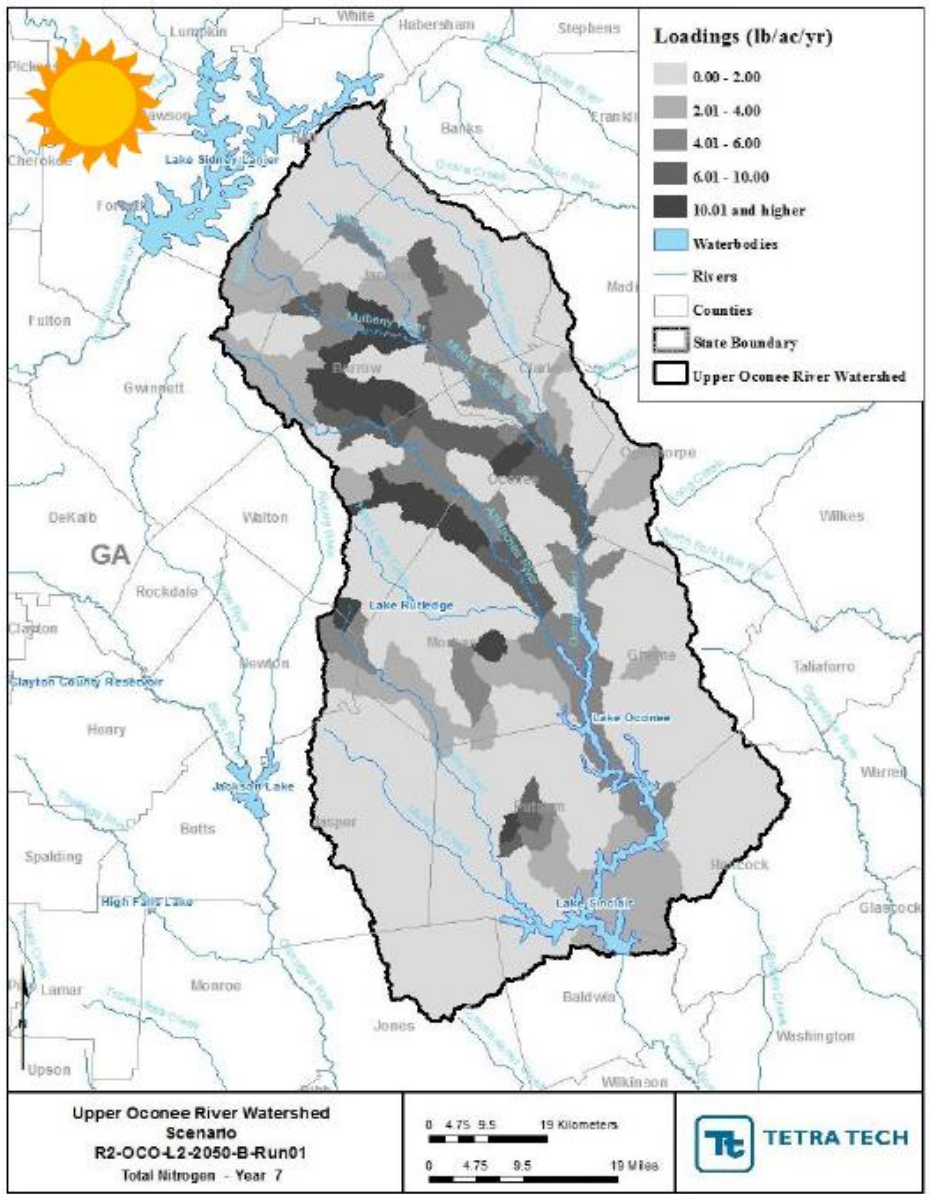

Oconee Basin: Total N Heat Maps - Wet

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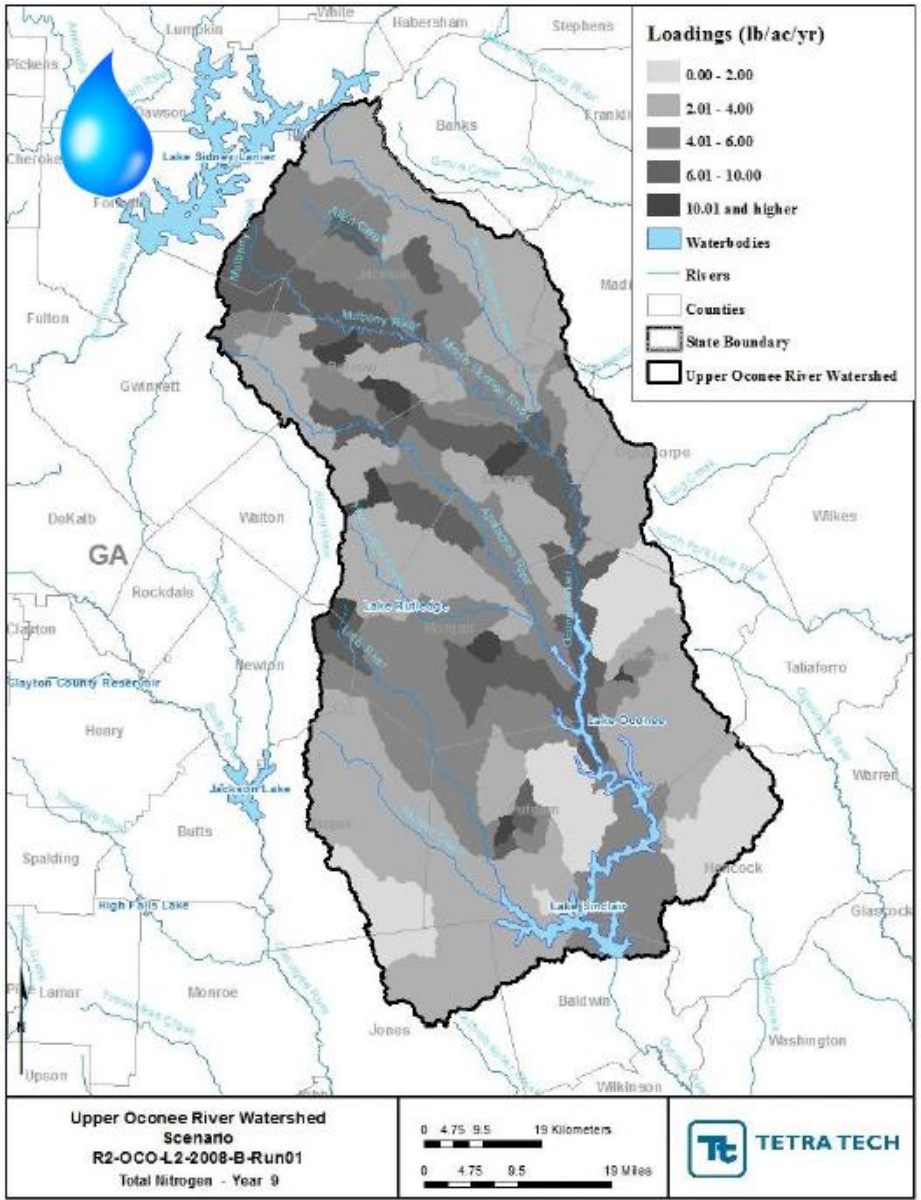

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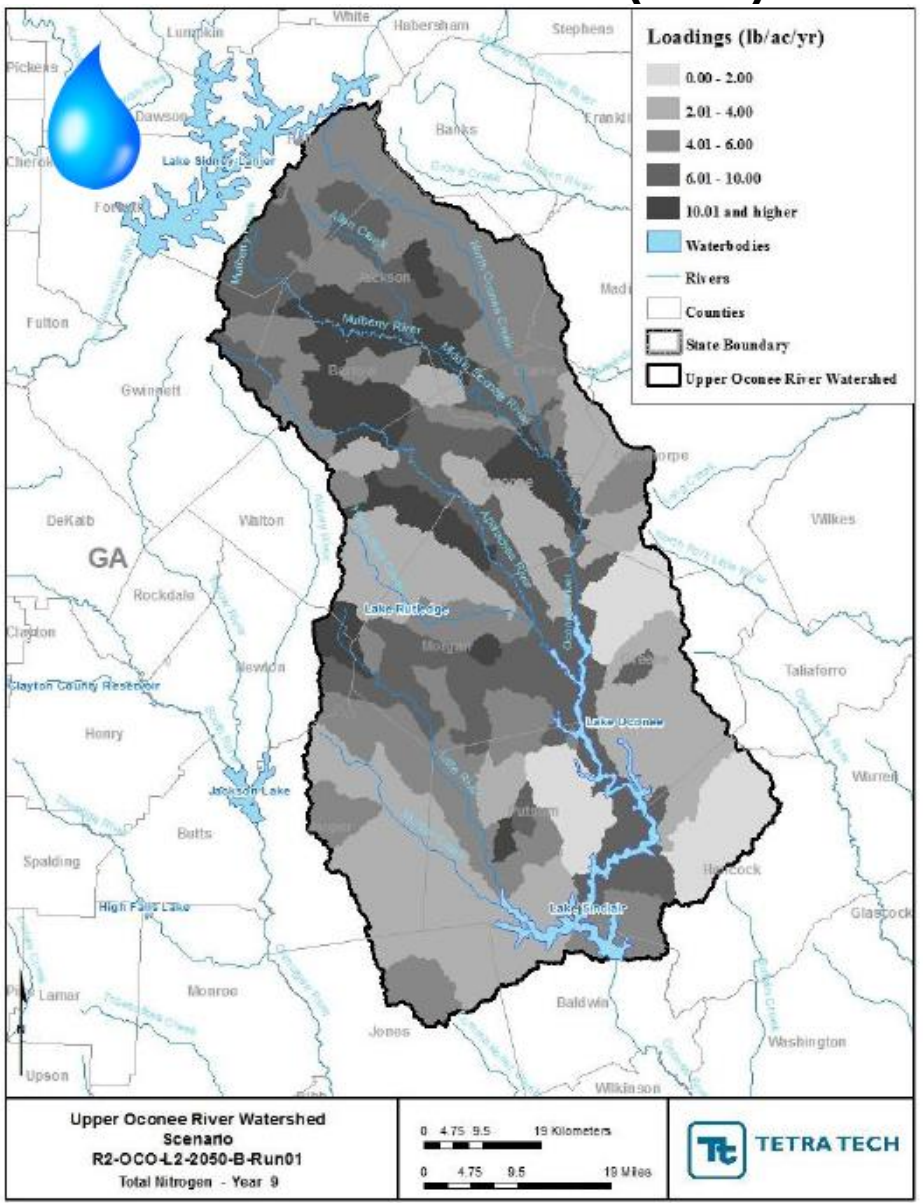
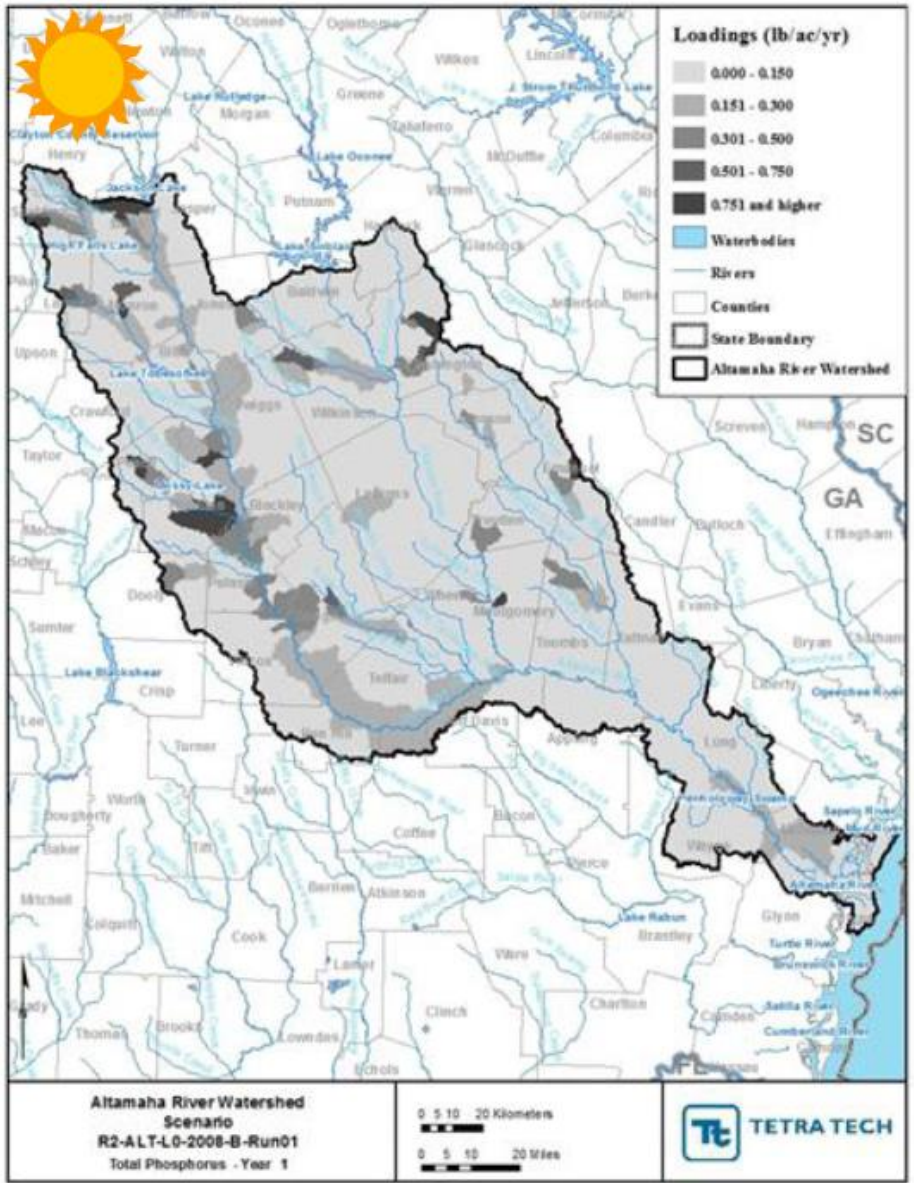


Altmaha Basin: Total P Heat Maps - Dry

Current Conditions



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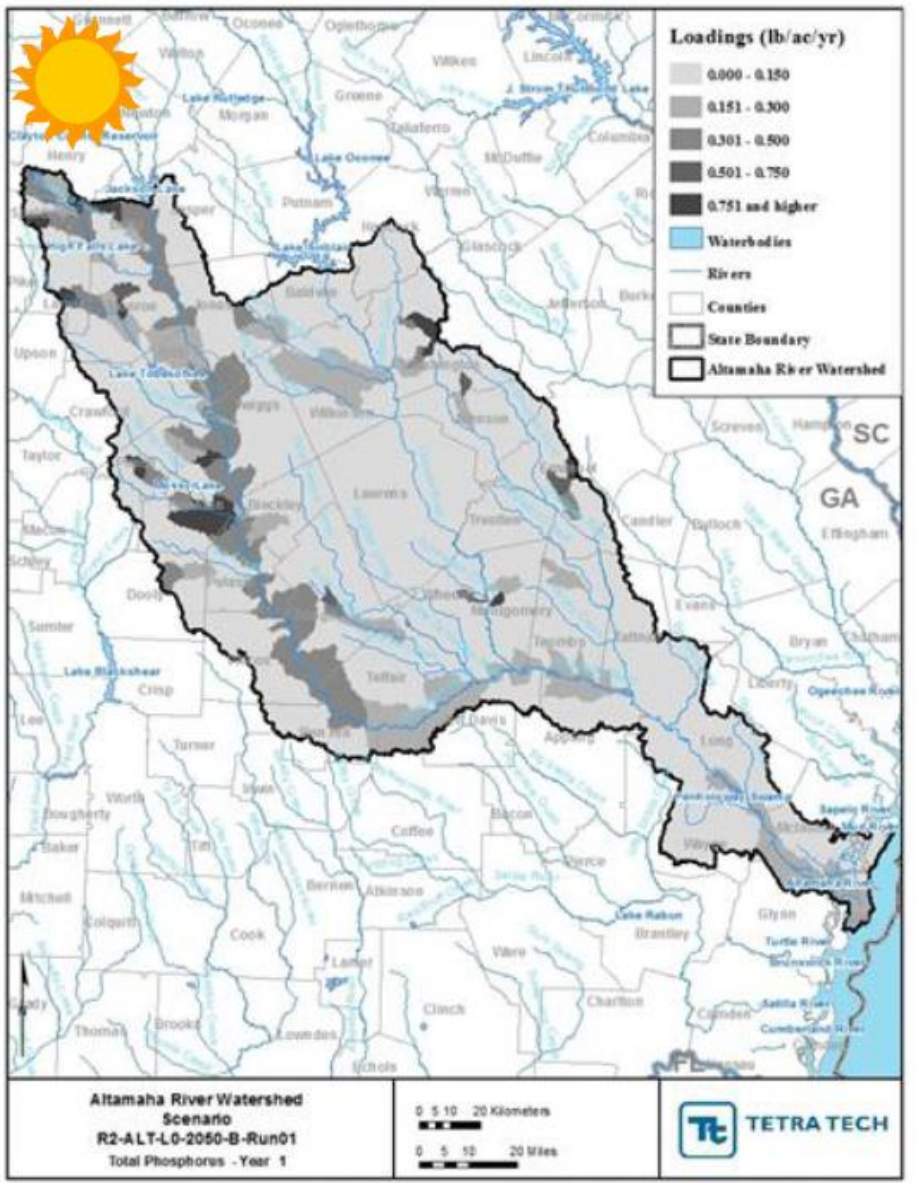

Altmaha Basin: Total P Heat Maps - Wet

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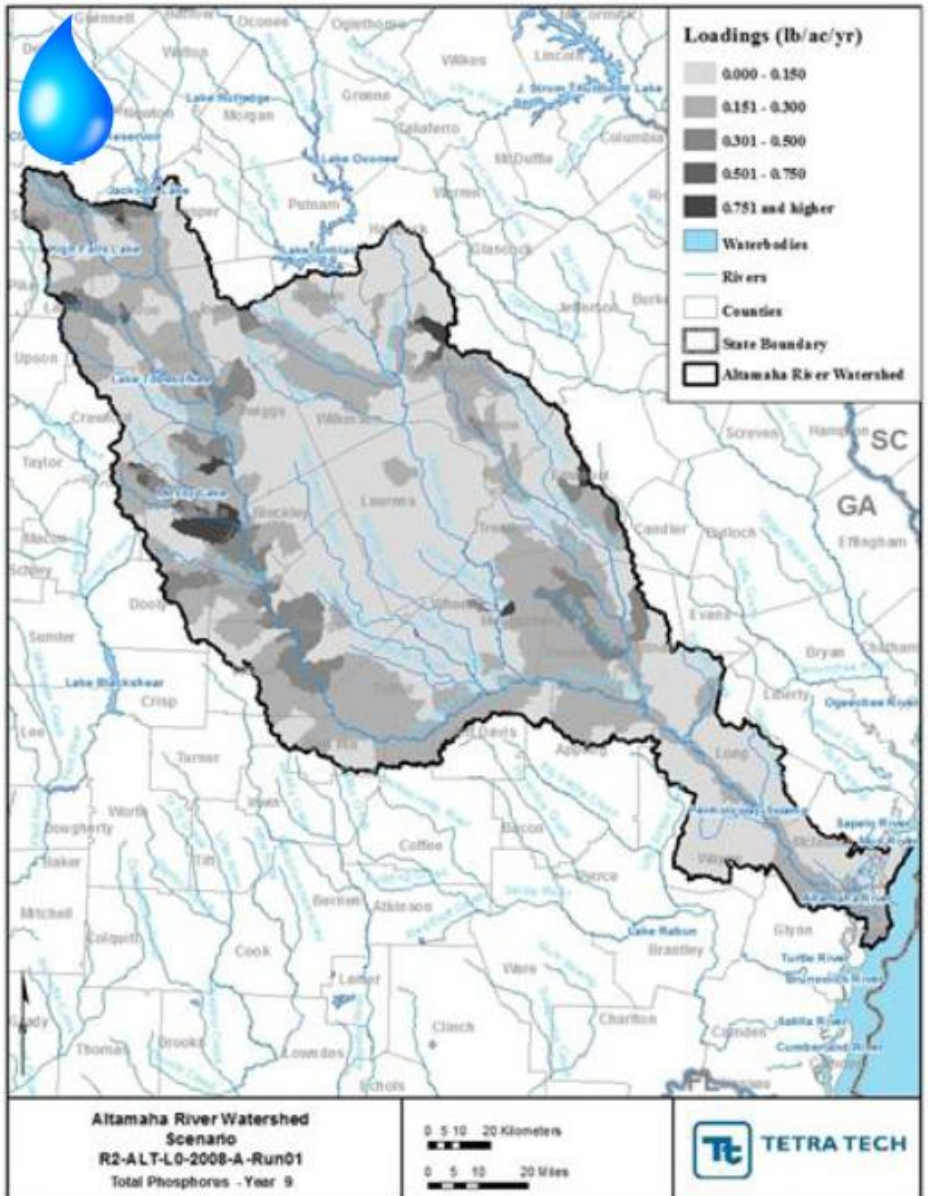

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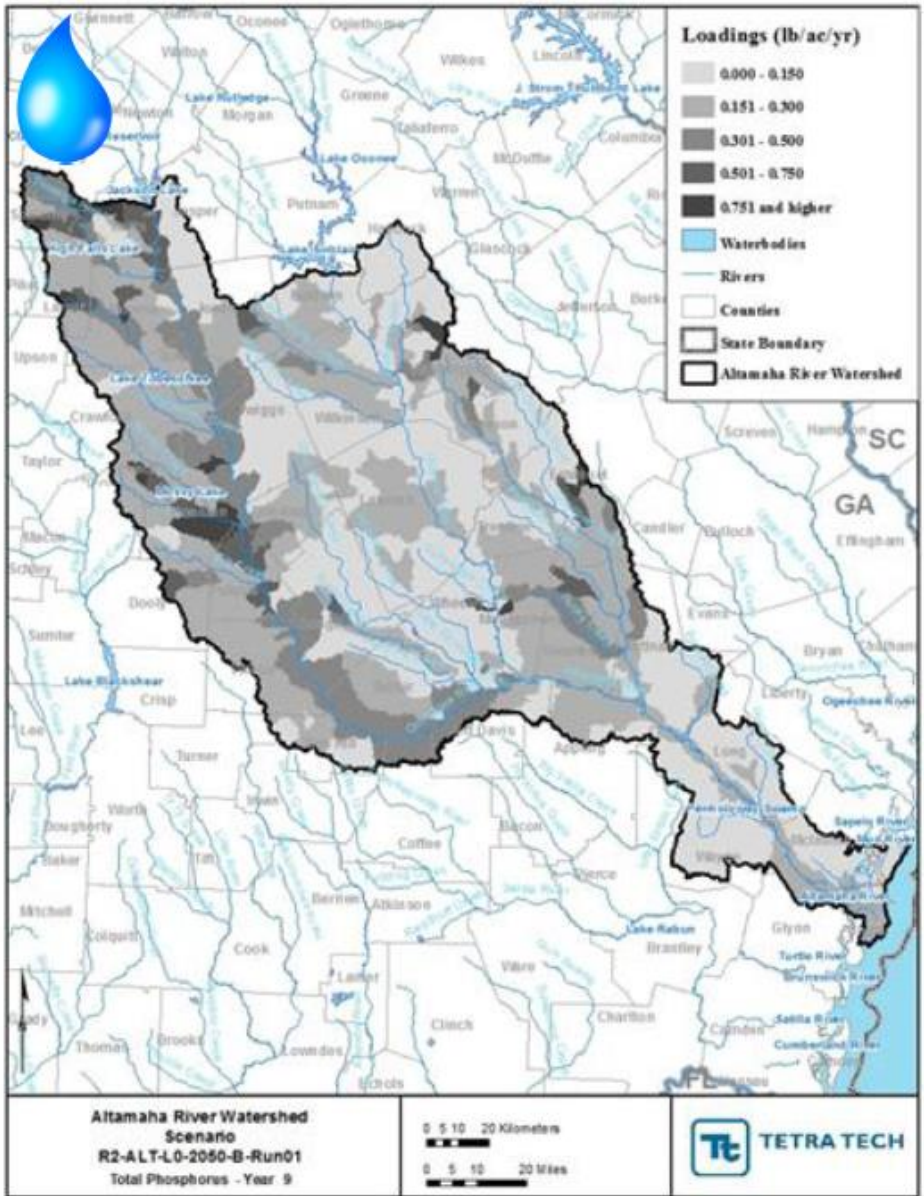

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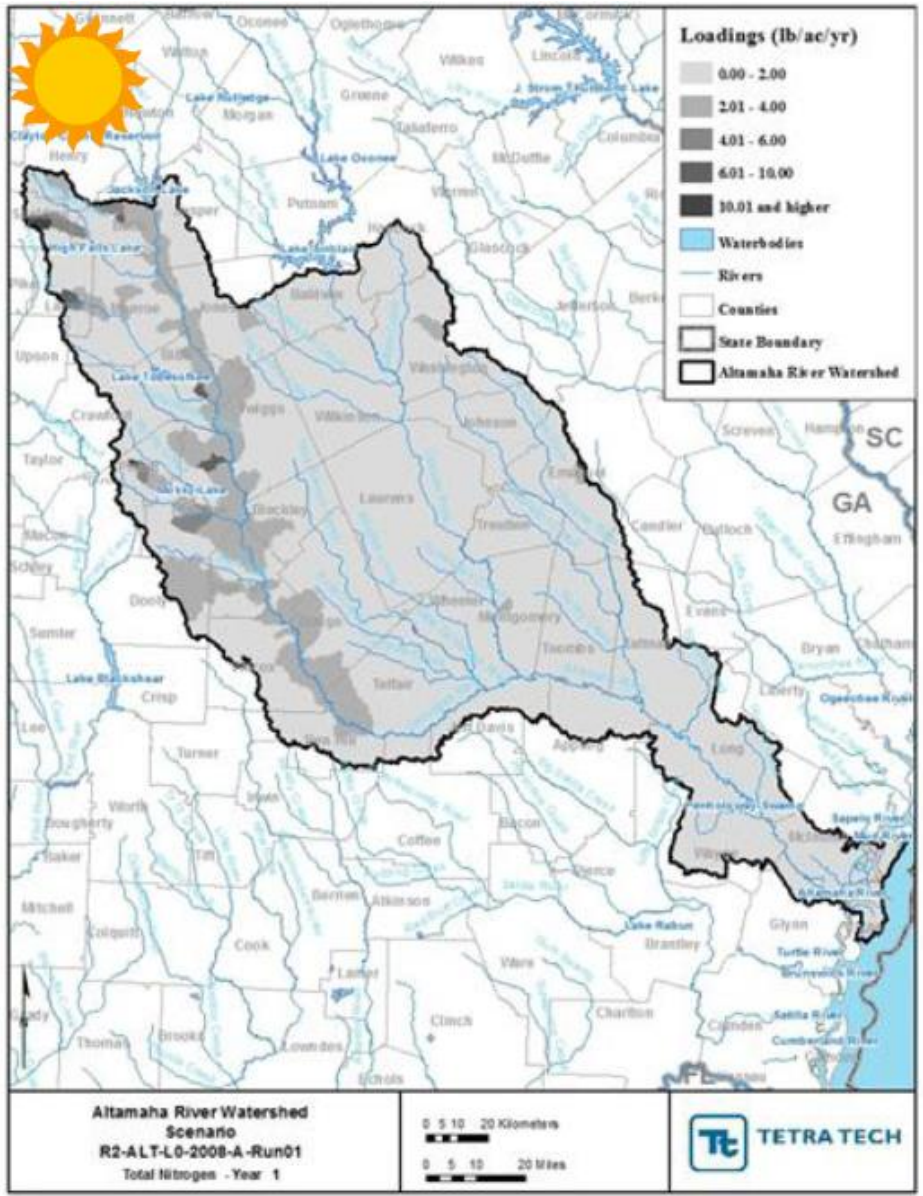

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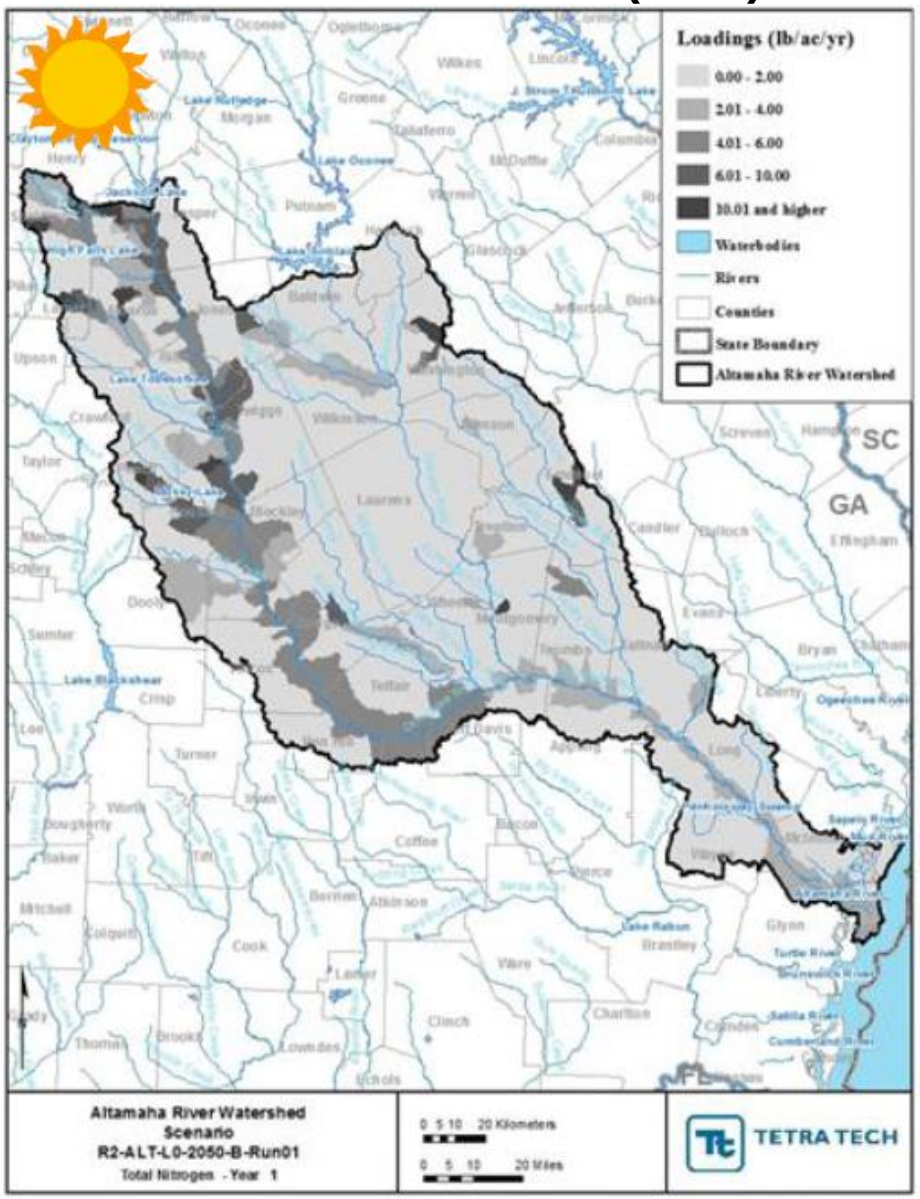

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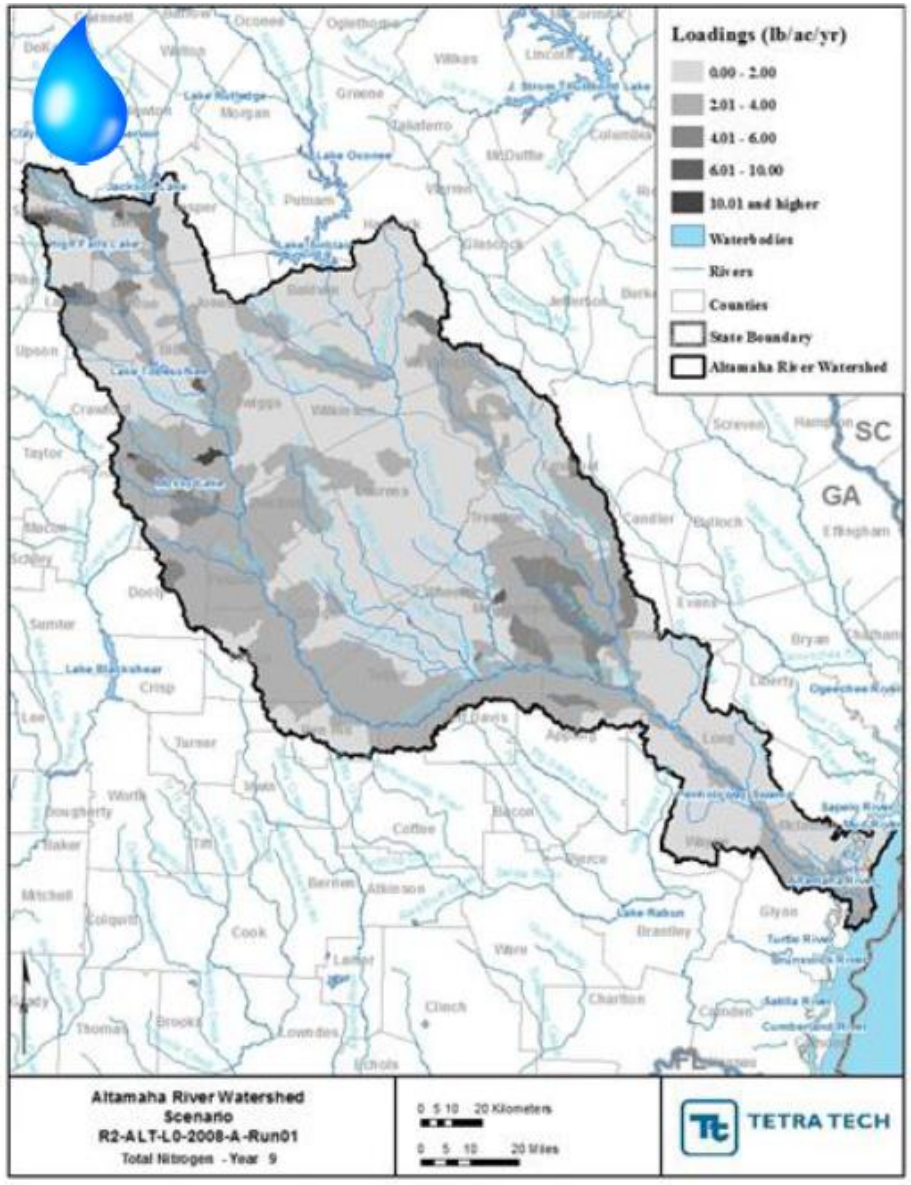

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