Coosa-North Georgia Regional Water Planning Council

November 3, 2021

GEORGIA WATER PLANNING

waterplanning.georgia.gov

Meeting Agenda

- Welcome and Introductions
- Agricultural Water Use Forecasts
- Seed Grant Updates
- EPD Updates
- Water and Wastewater Forecast Updates
- Metro Water District Update
- Lunch
- Forestry Presentation
- Wrap-up
- Public Comments

Introductions

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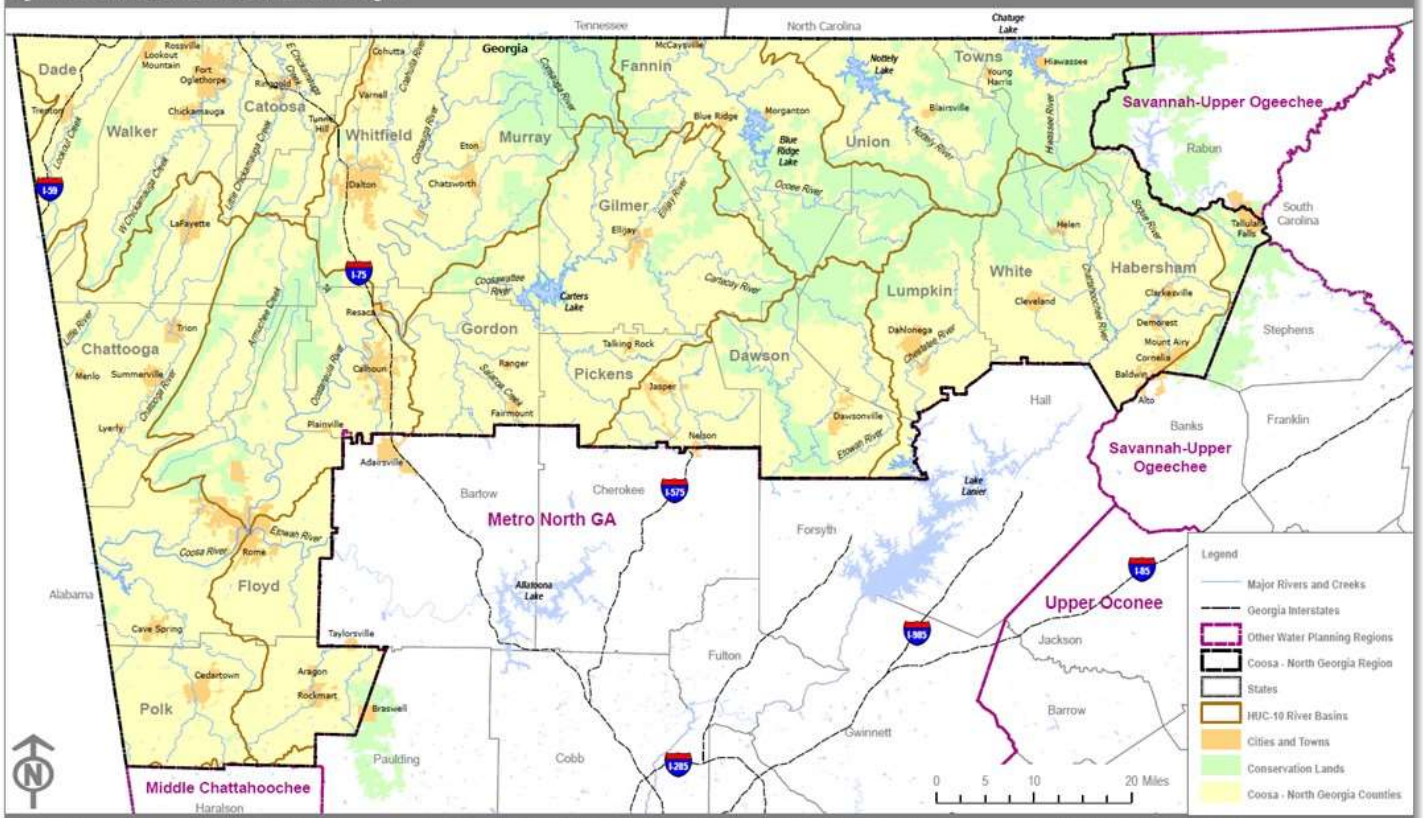
Coosa-North Georgia Region

Figure 2-1. Counties and Cities in the CNG Region



Source: Conservation Lands, Natural Resource Spatial Analysis Laboratory (NARSAL), Institute of Ecology, University of Georgia (UGA), 2003. River Basins, GAEPD, Watershed Protection Branch, Drinking Water Compliance Program, 2003.

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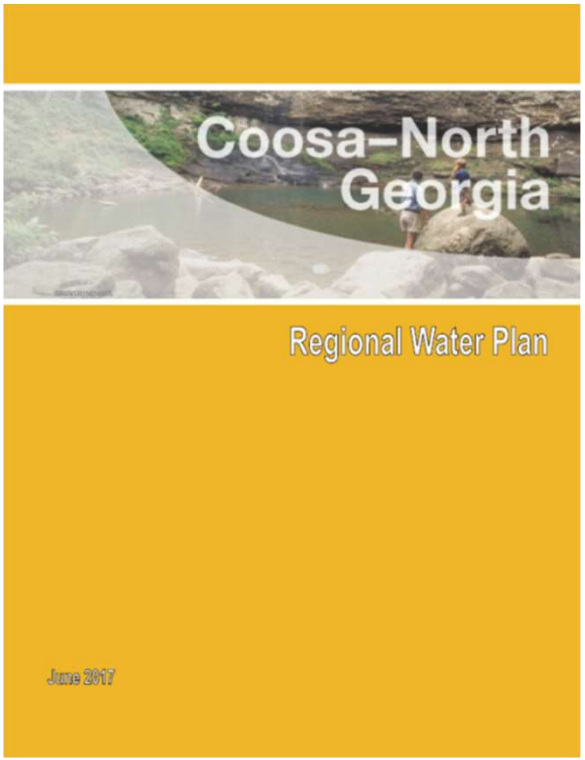
Coosa-North Georgia Regional Water Plan



PLAN REVIEW PROCESS (2017)

COOSA-NORTH GEORGIA REGION

BACKGROUND

The Coosa North Georgia Regional Water Plan was first adopted by the Georgia Environmental Protection Division in September 2011. As required in the Water Planning Act (2008), the Regional Water Plans are required to be updated on a 5-year cycle and a revised plan was adopted in 2017. The Plan is the product of the work of the Coosa North Georgia Regional Water Planning Council. The Regional Water Plan outlines strategies to meet water needs through 2050 and fulfill the Council's vision and goals for the region. Major water resources in the region include the Coosa, Conasauga, Coosawattee, Etowah and Oostanaula River Basins, and the Crystalline rock and Paleozoic rock Aquifers.

Counties: Catoosa, Chattooga, Dade, Dawson, Fannin, Floyd, Gilmer, Gordon, Habersham, Lumpkin, Murray, Pickens, Polk, Towns, Union, Walker, White, Whitfield

SUMMARY OF 2017 RESOURCE ASSESSMENT RESULTS

GROUNDWATER AVAILABILITY: No new analysis of groundwater availability was conducted as part of the Regional Water Plan update process. No groundwater sustainable yield issues were identified based on current demands and conditions.

SURFACE WATER AVAILABILITY: Resource assessment modeling results show that the Tennessee Basin has potential gaps for two modeling nodes (New England and Chickamauga) but the gaps were small (1.3 to 4 mgd). There was only one potential gaps in the Coosa Basin at the Gaylesville node (5.8 mgd) and no potential gaps were predicted in the Chattahoochee Basin.

SURFACE WATER QUALITY: The resource assessment model results indicated that most of the streams within the region have available assimilative capacity, with some localized exceptions. GAEPD has developed TMDLs for chlorophyll-a for Lake Allatoona (Etowah River Arm and Allatoona Creek Arm), Carters Lake (Coosawattee River Embayment and Woodring Branch), and is developing a TMDL for Lake Lanier that addresses nutrient loadings. For future conditions, dissolved oxygen, modeling results showed that assimilative capacity can be managed through point source effluent limits. Management of future nutrient loadings to the major lakes will require improvements in wastewater treatment and reductions in non-point sources.

KEY WATER RESOURCE ISSUES BEING ADDRESSED BY THE COUNCIL IN THE 2017 PLAN

1. Groundwater resources in the region are generally limited; most of the water supply needs are met with surface water sources.
2. The region covers multiple river basins including the Chattahoochee, Tennessee, and Coosa basins which can complicate water resource management.
3. Regional topography makes it a challenge to share resources and water supply infrastructure cost effectively.
4. Targeted water quality concerns in Lake Weiss, Lake Allatoona, Carters Lake and Lake Lanier.
5. Coordination with neighboring water councils to effectively management water resources by basin.
6. Improved implementation of Best Management Practices (BMPs) to address water conservation, wastewater management, and water quality across the region.

Georgia's State Water Plan
COOSA-NORTH GEORGIA REGION
https://waterplanning.georgia.gov/

Introductions and Housekeeping

- Approve minutes from March 24, 2021 Council Meeting
- Approve today's meeting agenda

Coosa-North Georgia Region

Council's Vision:

Enhance the potential and quality of life for all communities through sustainable use of water resources in the region and state with partnerships among a broad spectrum of stakeholders.

Coosa-North Georgia Region

Council's Goals

1. Plan for appropriate levels of water storage, water sources, and long-term supply to meet anticipated need for local communities.
2. Minimize adverse effects to local communities and adjacent regions, and, when possible, enhance, natural systems.
3. Ensure that management practices support economic development and optimize existing water and wastewater infrastructure.
4. Promote alternative technologies that conserve, return, and recycle water; protect water quality; and ensure adequate capacity for water storage within the Coosa-North Georgia region.
5. Promote properly managed wastewater discharges.
6. Educate stakeholders in the region on the importance of water resources, including water conservation, efficiency, and pollution prevention.
7. Identify practices that reduce nonpoint source pollution and control stormwater to protect and enhance water quality and ecosystems in lakes and streams, particularly those in Priority Watersheds and listed streams.

Schedule of Upcoming Meetings

2022 Council Meetings (Locations TBD)

- February 23, 2022
- May 18, 2022
- September 21, 2022
- Q4 2022 (Date TBD)

Agricultural Water Use Forecasts

Coosa-North Georgia
Regional Water Planning Council

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Agricultural Water Use Forecast

- Mark Masters presentation
- Q&A

AGRICULTURAL WATER USE FORECAST

Coosa North Georgia Regional Water Planning Council
November 3, 2021

Mark Masters
Albany State University
Georgia Water Planning & Policy Center

Project Team

- Albany State University – Georgia Water Planning and Policy Center (Lead)
- University of Georgia Agricultural and Applied Economics

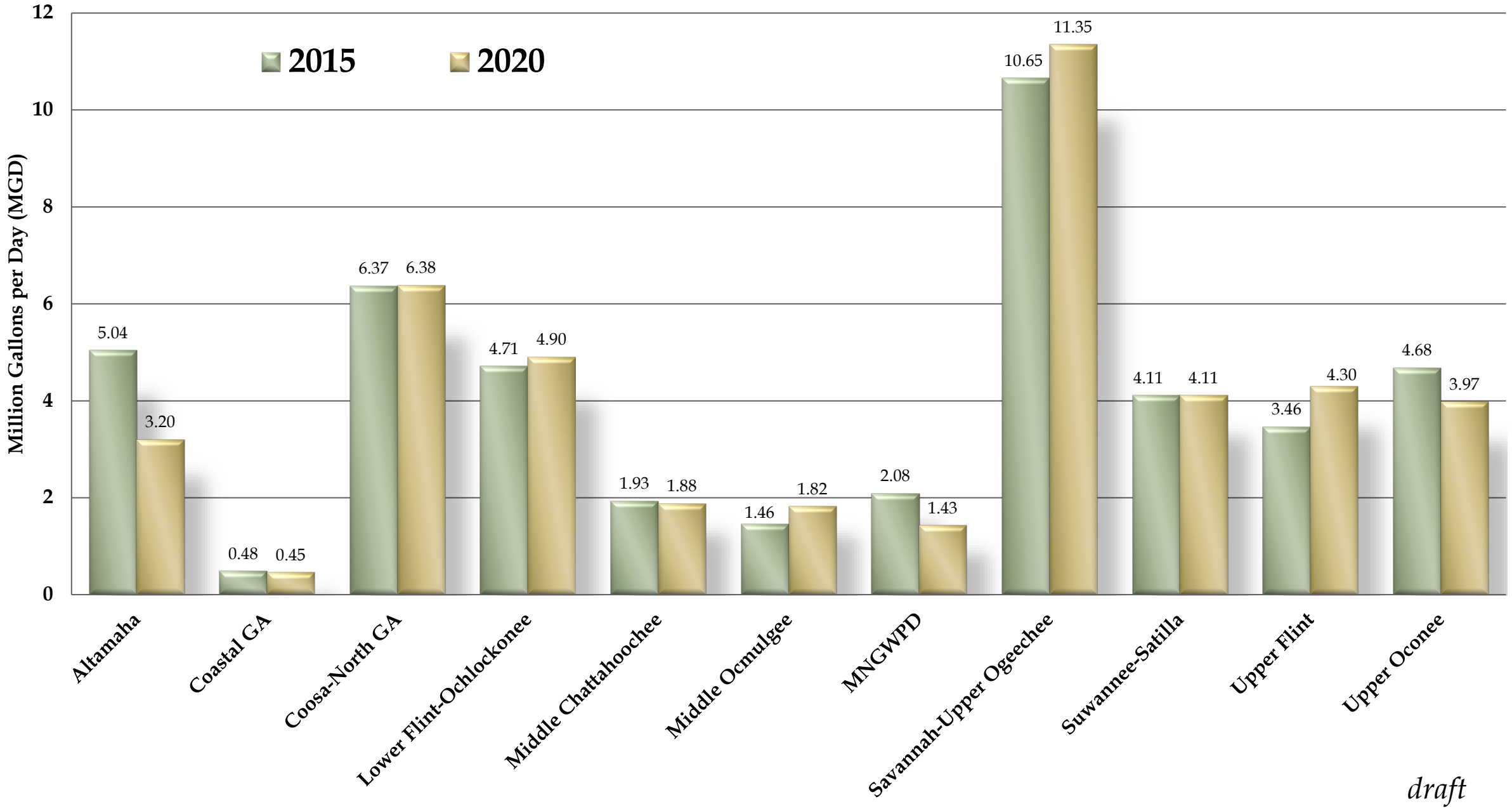
GEORGIA Water PLANNING & POLICY CENTER ALBANY STATE UNIVERSITY

THE UNIVERSITY OF GEORGIA
COLLEGE OF AGRICULTURAL & ENVIRONMENTAL SCIENCES

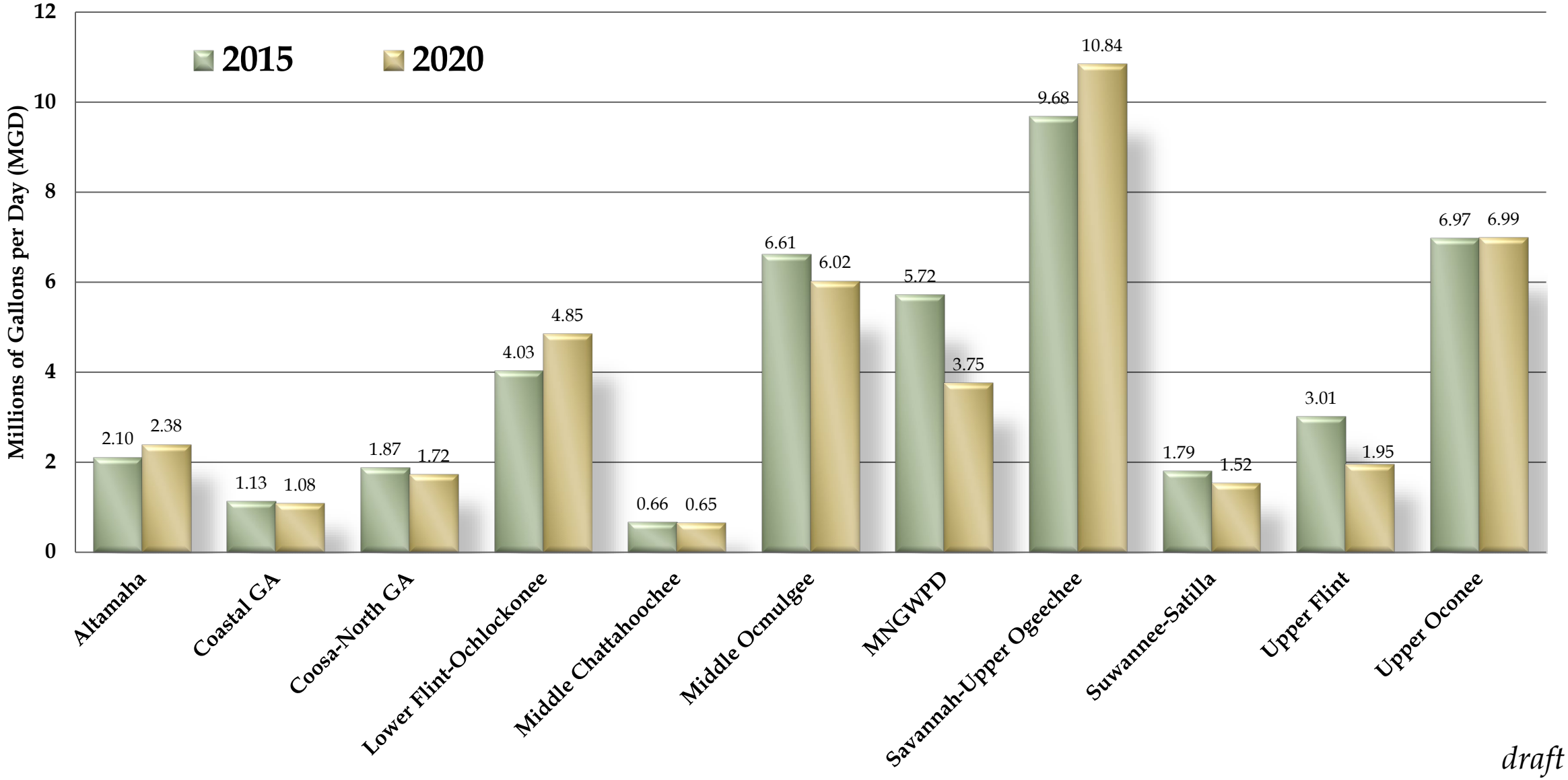
2020-21 Agricultural Water Demand Forecasts - Methods

- **Acreage –** Updated 2020 wetted acreage data
  - Field observation and aerial survey
- **Crop projections through 2060** - modeled based on multiple data sources:
  - Remote sensing and field data
  - USDA Projections, Southeast Model, Georgia Model, Data Trends
- **Crop water needs** - wet, normal, dry years
  - Expanded use of meter data
  - Review estimates used in 2015-2016 and revise if needed
    - Surface water method revised to remove "70% assumption"
- **Animal Ag/Nursery**

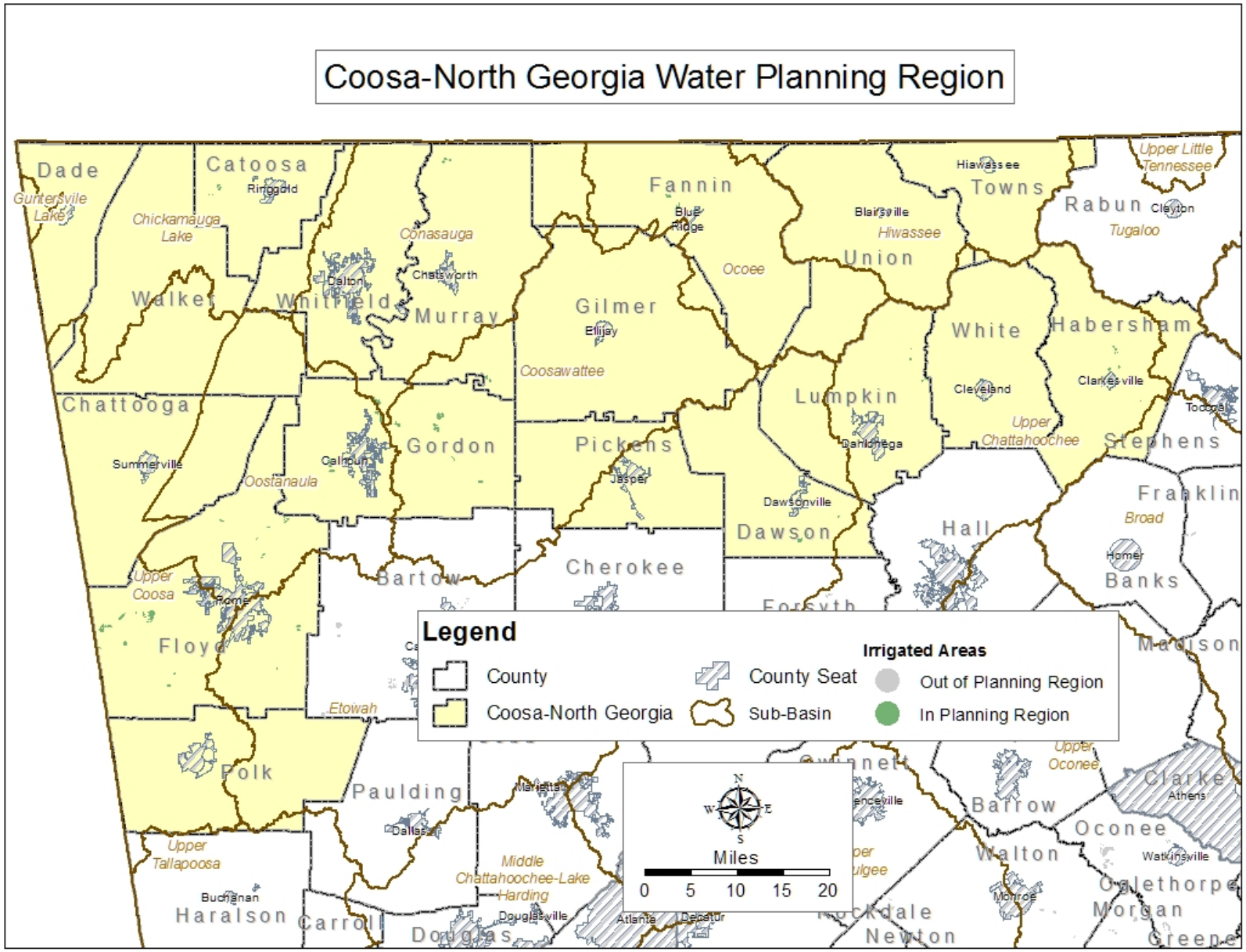
Animal Agriculture - Daily Water Use by Water Planning Region
Statewide Total: 43.8 MGD



Daily Water Use by Horticultural Nurseries (Container, In-Ground, and Greenhouse), Millions of Gallons Per Day
Statewide Total: 41.76 MGD - *draft*



draft



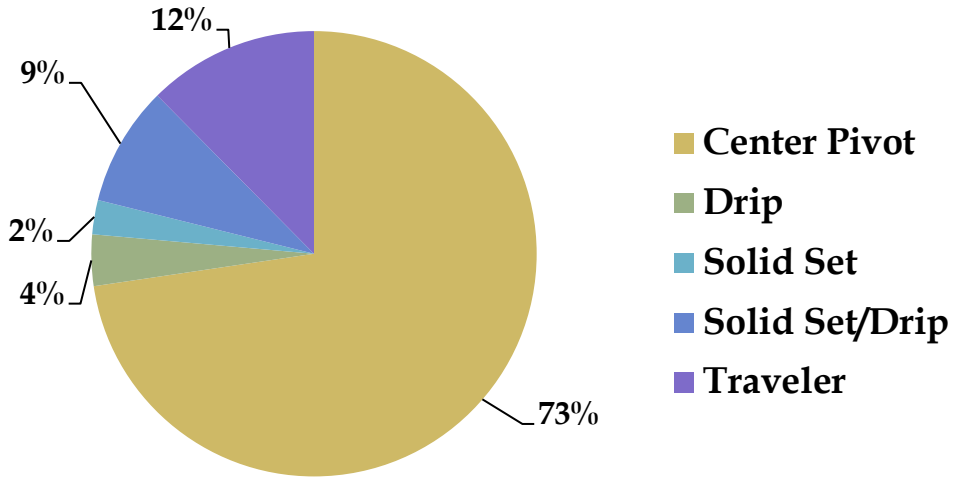
Irrigated Acres

County	2015	2020
CATOOSA	169	169
DAWSON	178	178
FANNIN	202	202
FLOYD	1,745	1,816
GILMER	0	0
GORDON	1,761	2,089
HABERSHAM	273	273
LUMPKIN	101	101
MURRAY	300	300
PICKENS	0	0
POLK	0	0
TOWNS	0	135
UNION	48	48
WALKER	0	0
WHITE	0	0
WHITFIELD	0	0

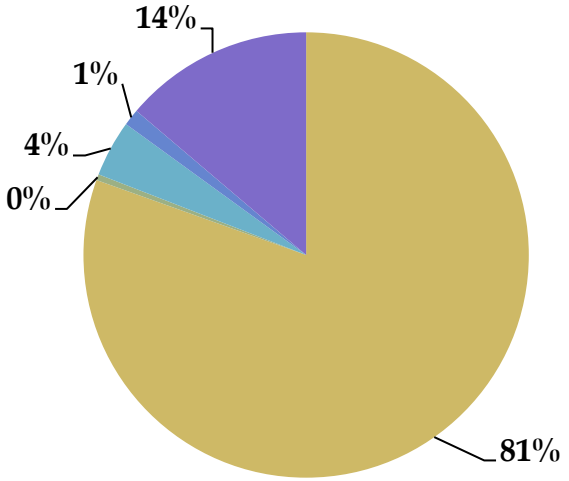
Coosa-North Georgia RWPC

	2015	2020	% Change
Total # of Fields	135	143	+ 5.9%
Total Acreage	4,776	5,310	+ 11.2%
Total GW Acreage	0	0	0%
Total SW Acreage	4,776	5,310	+ 11.2%
Total Center Pivots	67	117	+ 74.6%
Center Pivot Acreage	2,828	4,272	+ 51.1%

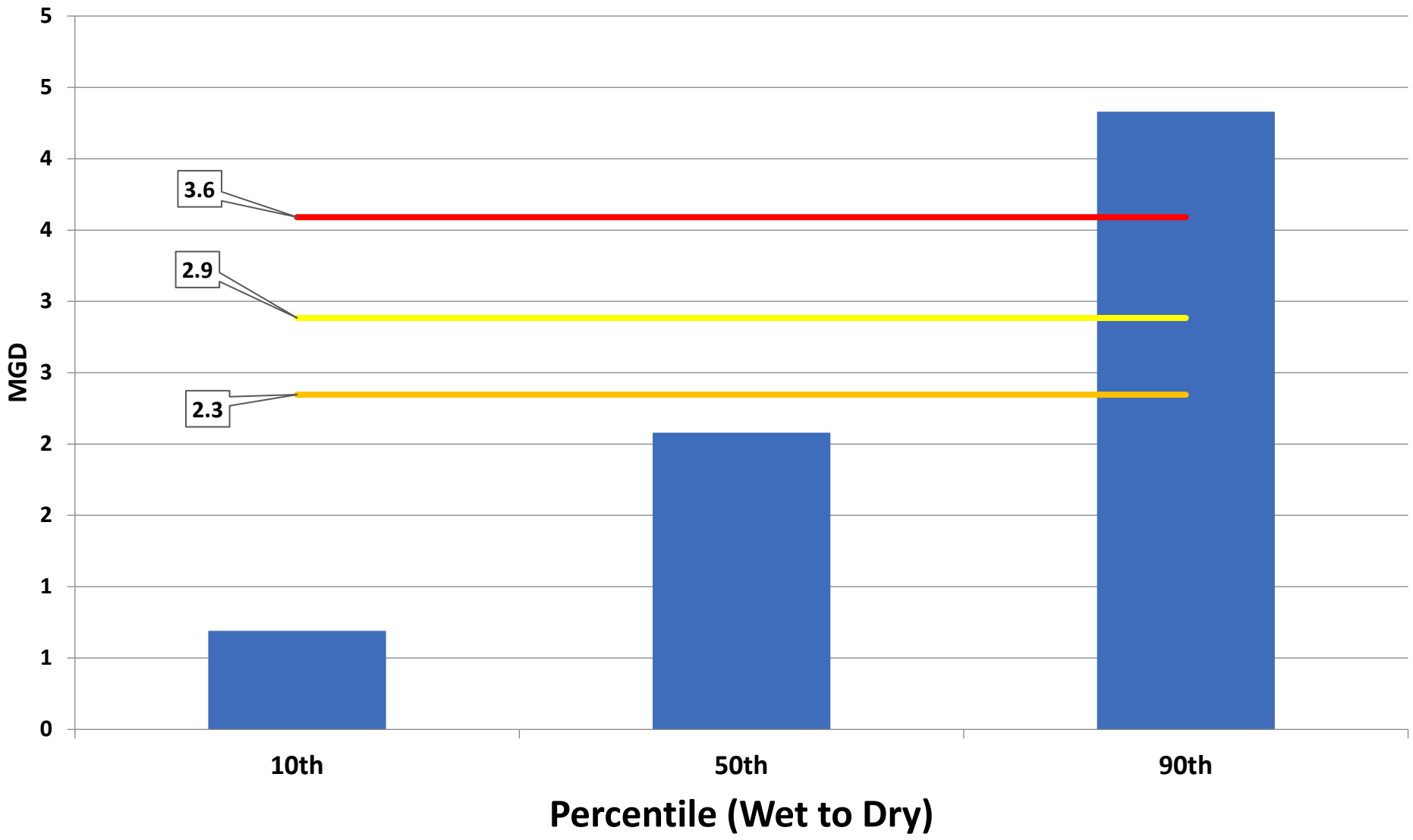
System Type - % of Systems



System Type - % of Acreage



Coosa North Georgia - Surface Water



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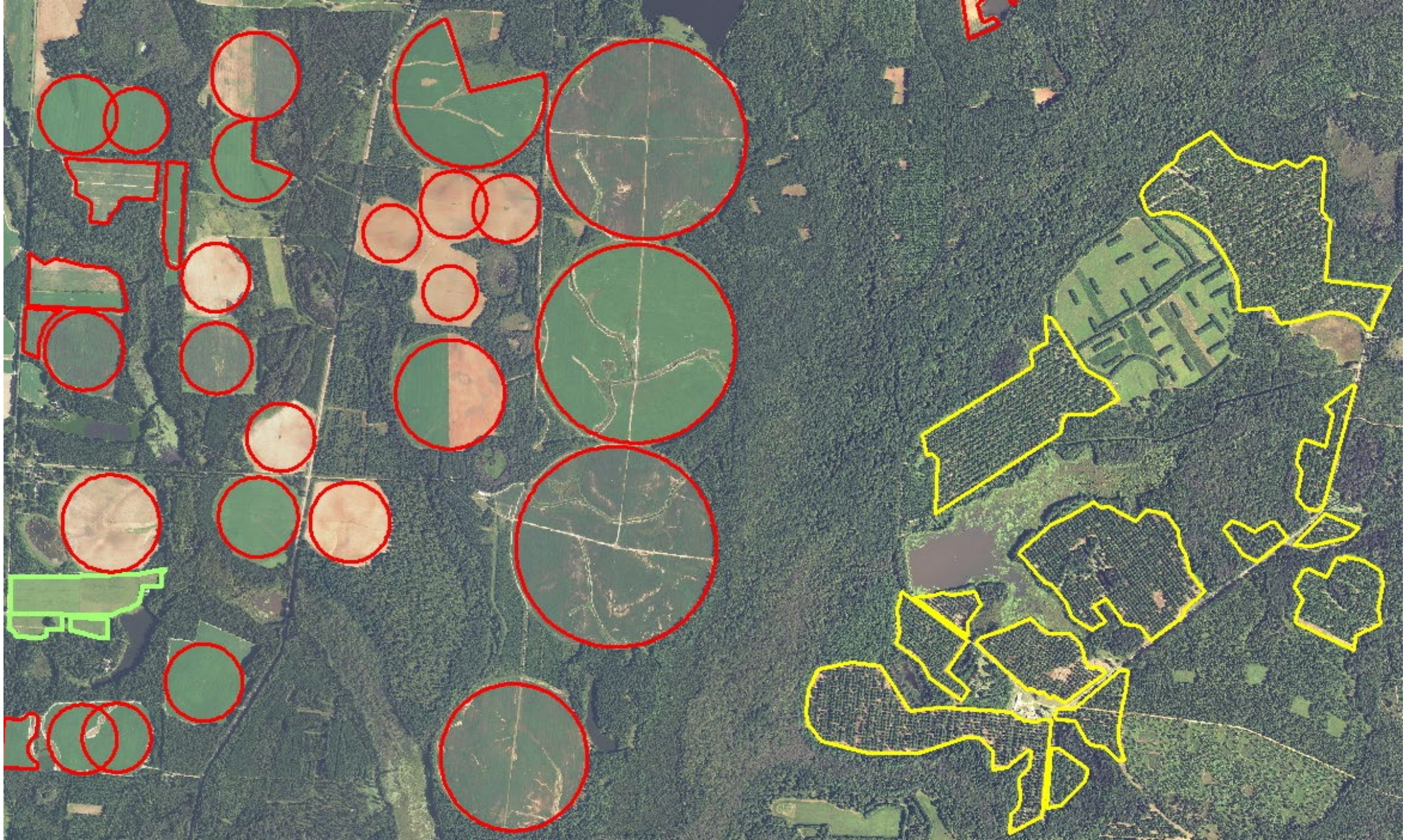
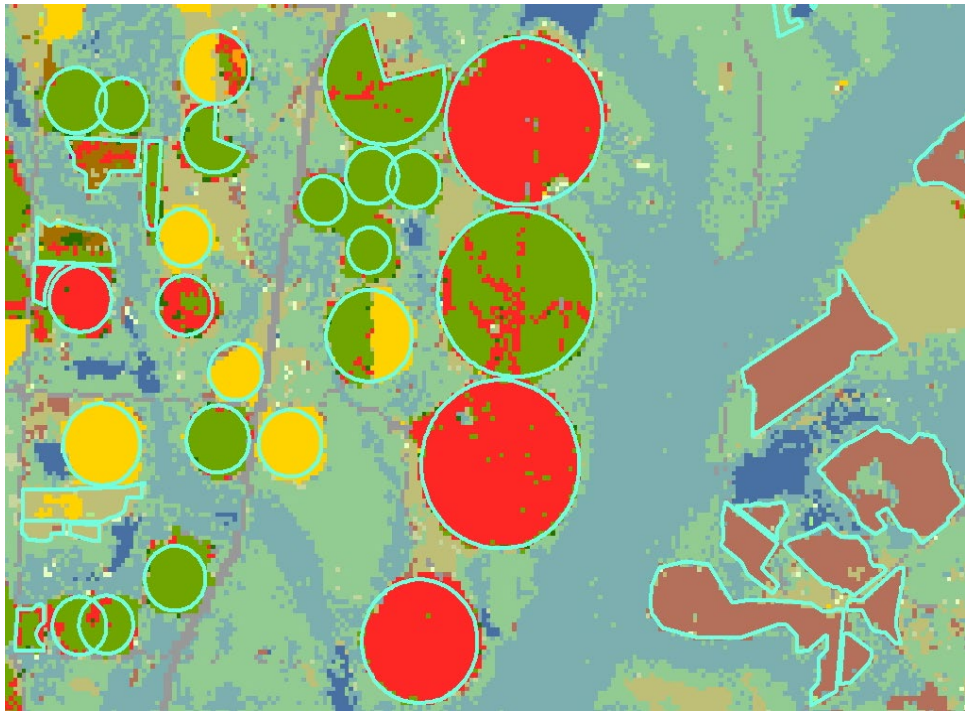
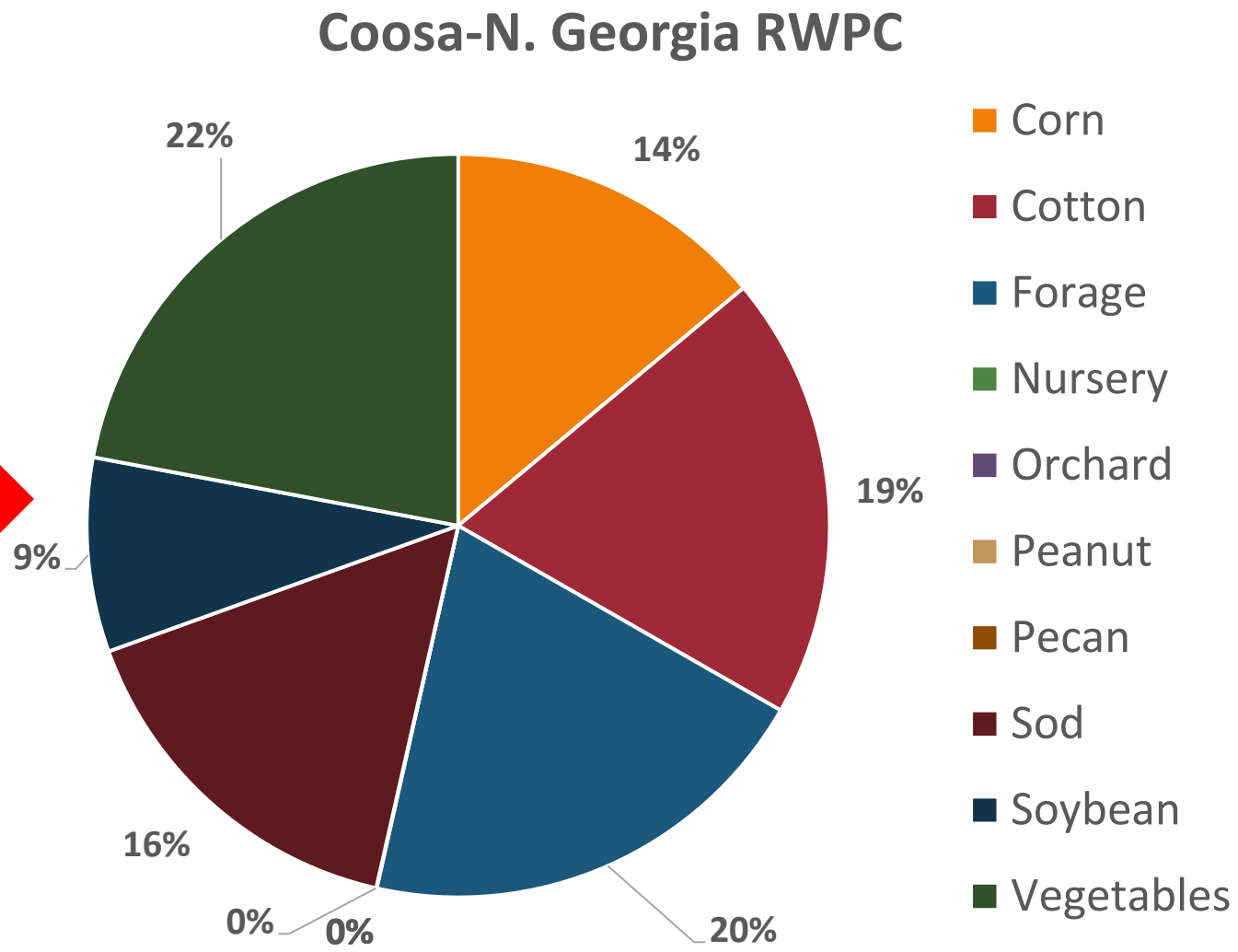
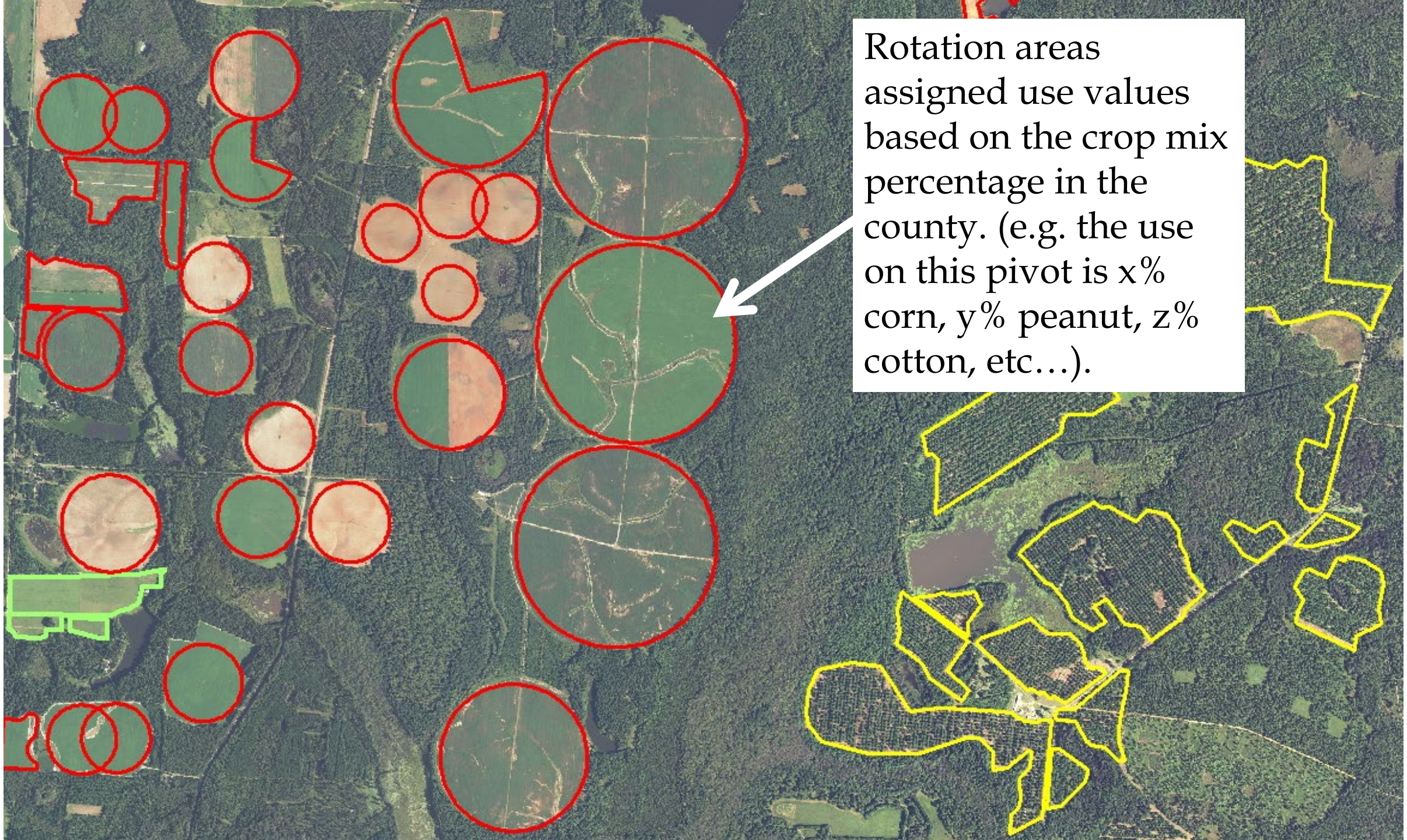
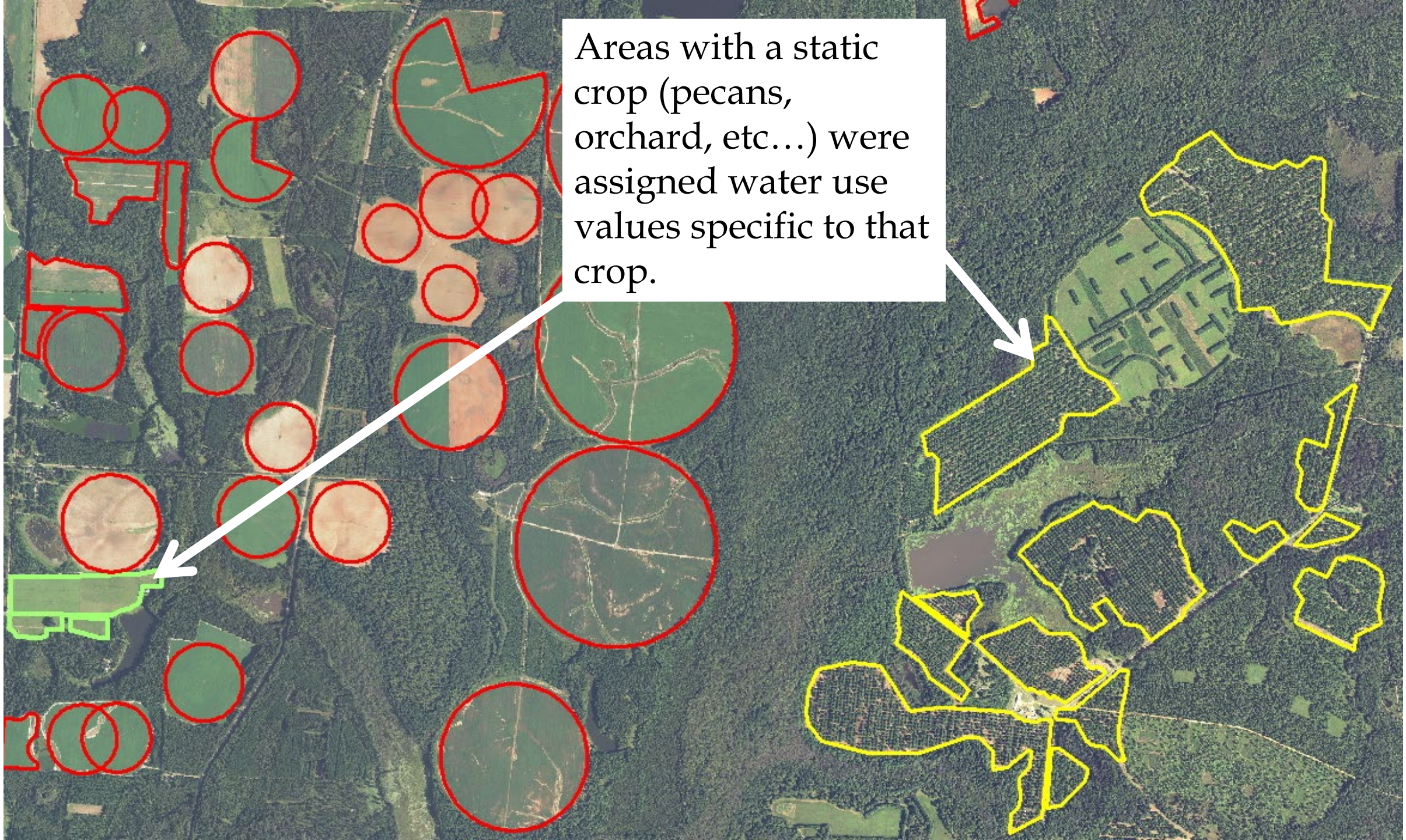


Baseline Crop Mix by RWPC



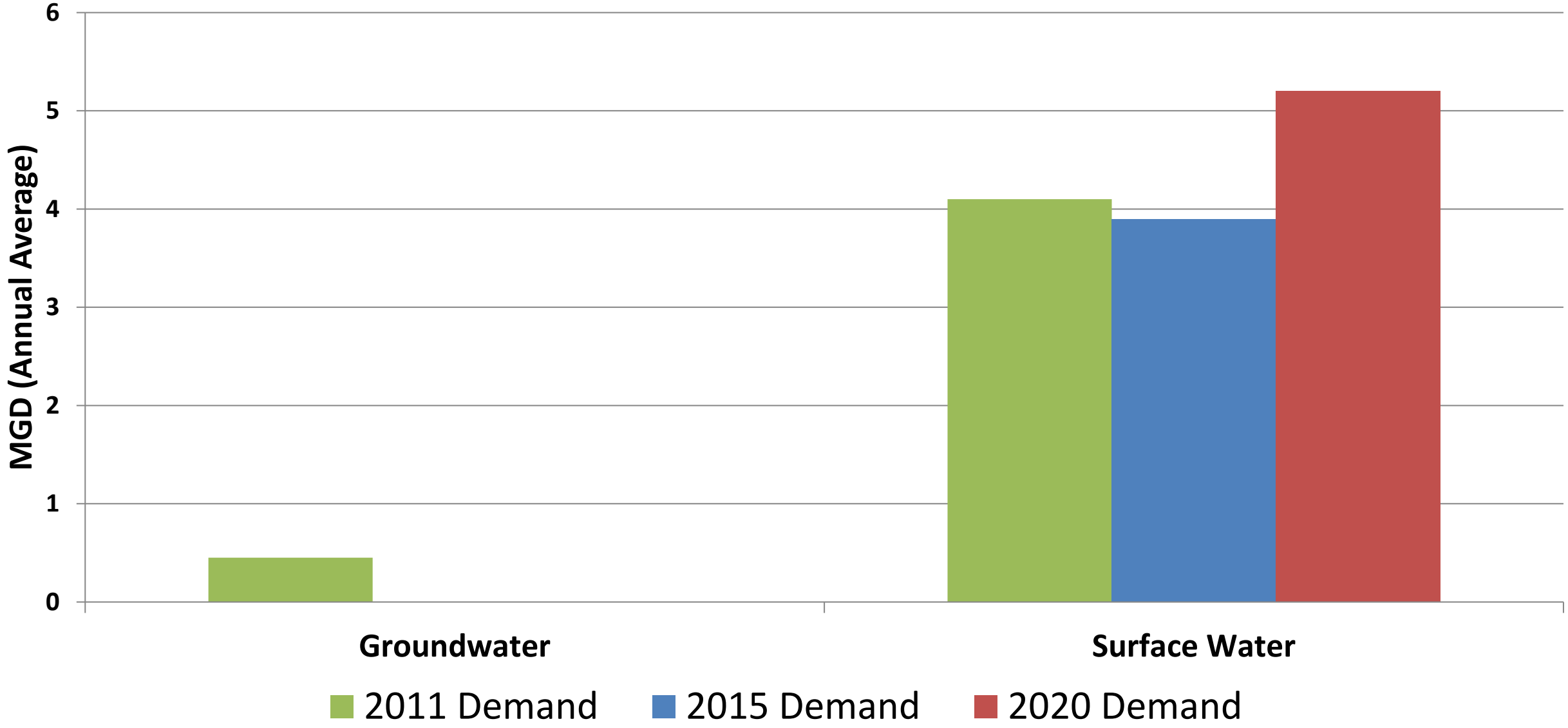



Rotation areas assigned use values based on the crop mix percentage in the county. (e.g. the use on this pivot is x% corn, y% peanut, z% cotton, etc…).

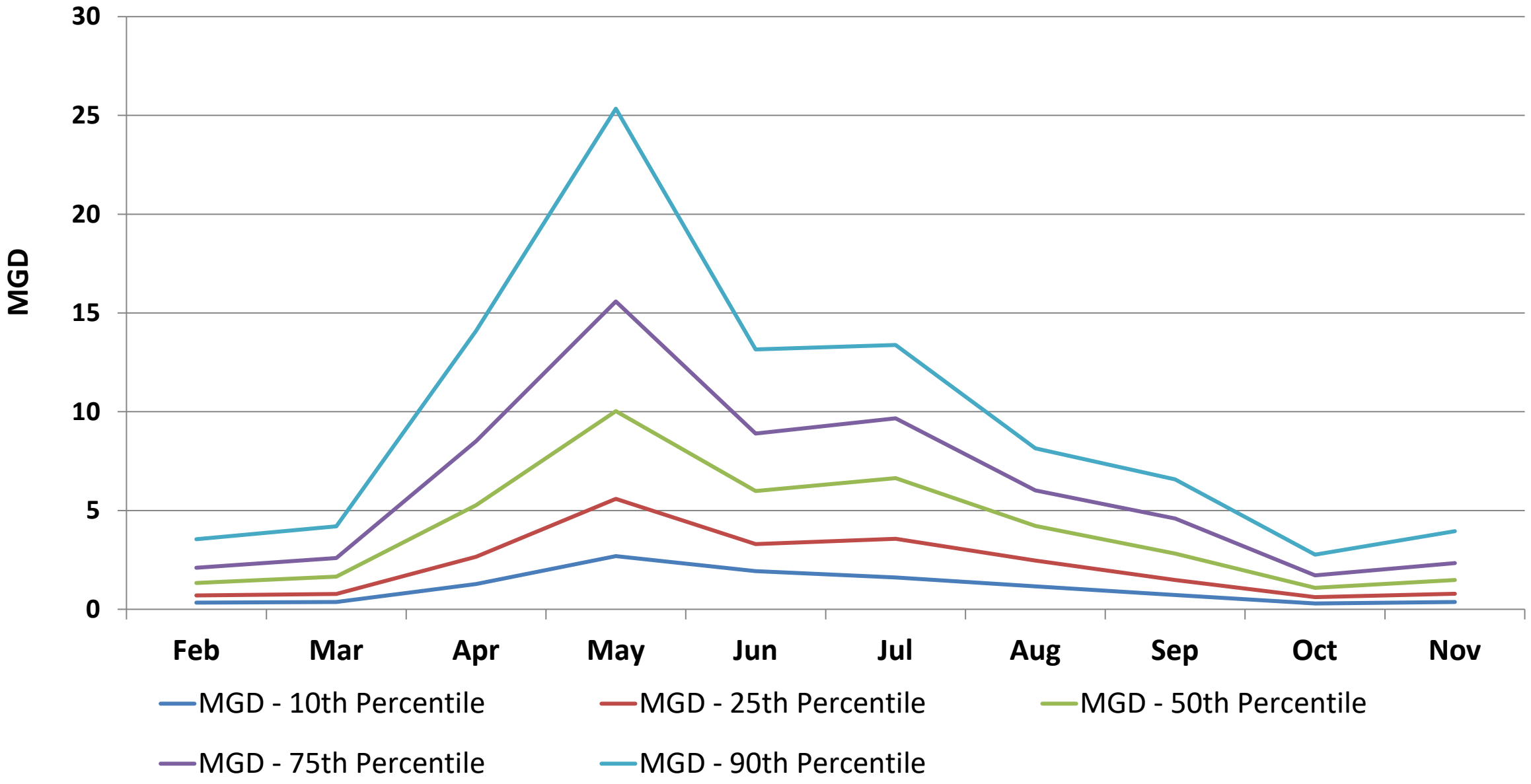

Areas with a static crop (pecans, orchard, etc…) were assigned water use values specific to that crop.

CNG Council – Ag Demand – 75th Percentile

Round 1 (2011), Round 2 (2015) and Round 3 (2020)

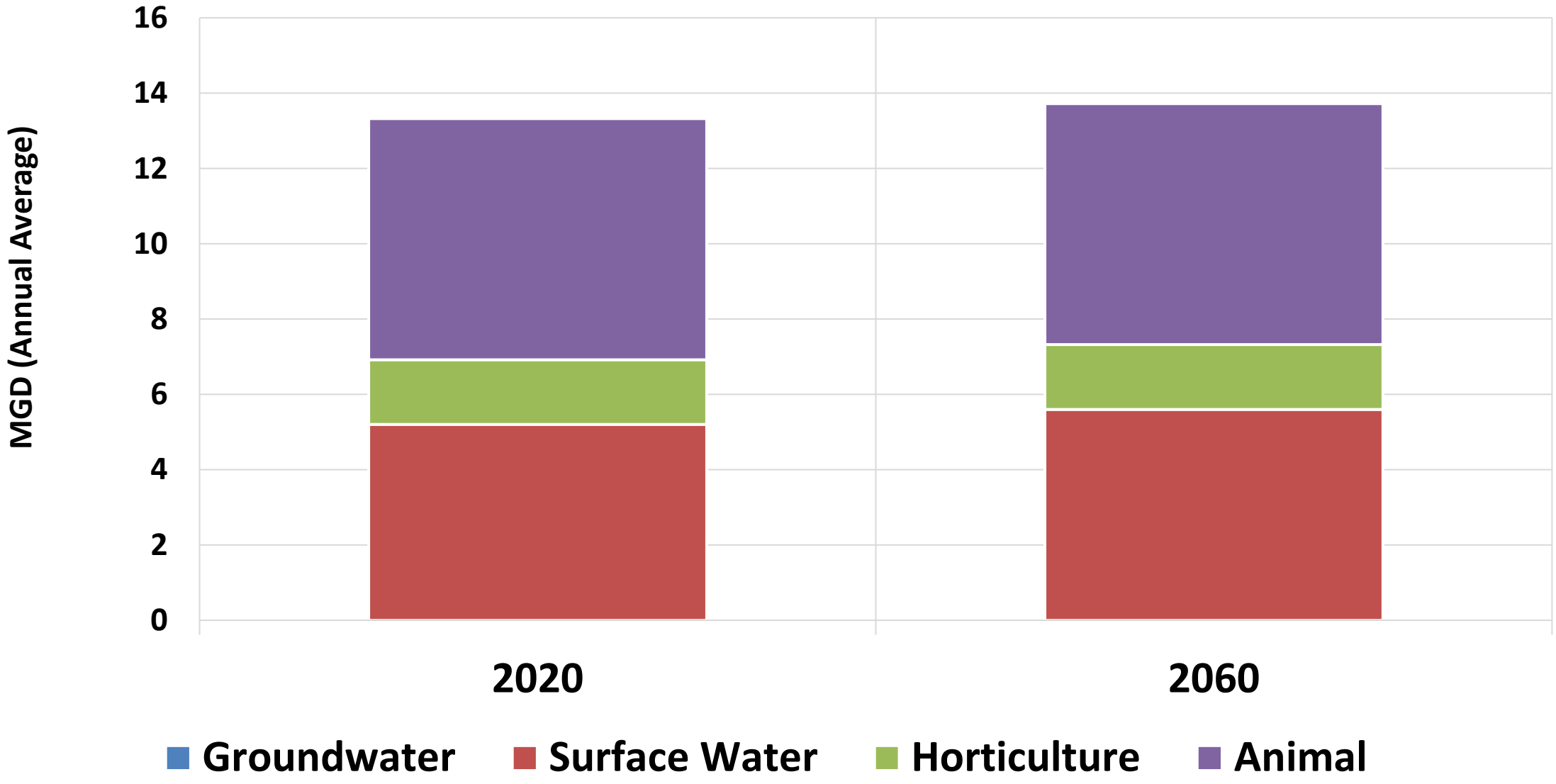


Coosa-N. Georgia RWPC - Monthly



CNG – Ag Demand – Forecast – 75th Percentile

Totals (2020 & 2060)



Questions & Discussion

Mark H. Masters
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Georgia Water Planning & Policy Center
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229-430-2900 x36

Seed Grant Updates

Coosa-North Georgia
Regional Water Planning Council

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Seed Grant Updates

- Latest Application
- 303d Project Update – Erin Lincoln, Tetra Tech

Coosa-North Georgia 303(d) Listed Streams

Coosa North Georgia Regional Water Planning Council Meeting

Erin Lincoln, PH

November 3, 2021

Thank You to our Supporters and Contributing Partners

TETRA TECH

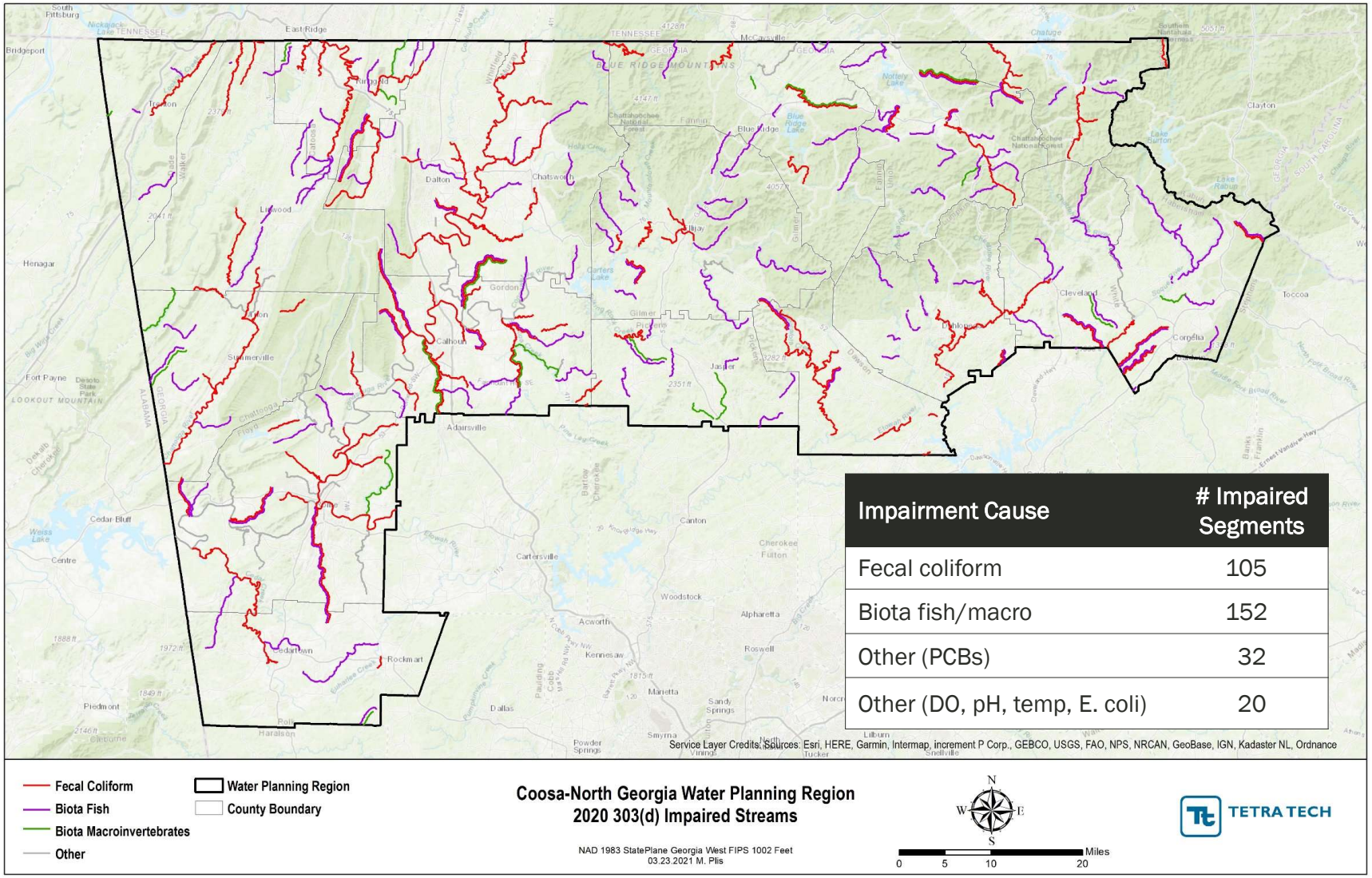
Funding through an EPD 319 grant

Support from the Northwest Georgia Regional Commission and North Georgia Water Resources Partnership

Contributions from Hawks Environmental and CCR Environmental

Project Goal

Develop an impaired stream water quality assessment tool to guide private citizens, watershed groups, local governments, and the Council and Partnership in prioritizing and delisting impaired 303(d) listed streams in the Coosa-North GA region.



Impairment Cause	# Impaired Segments
Fecal coliform	105
Biota fish/macro	152
Other (PCBs)	32
Other (DO, pH, temp, E. coli)	20

Project Activities and Tasks

- 303(d) Listed Streams Evaluation
  - Public data collection & assessment
  - Water Quality Listing Evaluation
- Prioritization Tool Development
  - Rate overall stream health
  - Prioritize streams for delisting/management efforts
- Water Quality Sampling Program
  - Collect water quality and biota data
  - Compare against prioritization tool results

303(d) Streams Evaluation

Water Quality Standards and Listing Circumstances

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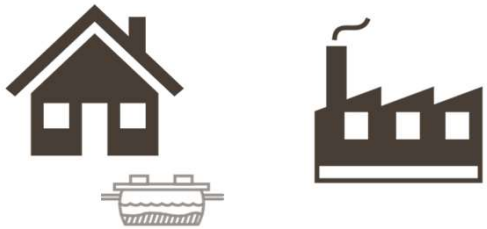
Water quality standards and scoring metrics

Listing data

Land Use



Point and non-point sources

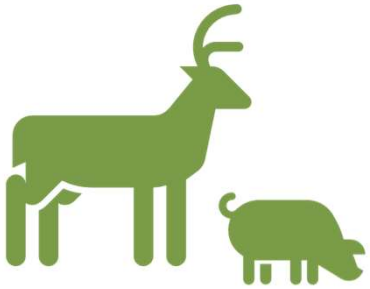
Inventory of Possible Streams for Delisting

Fecal Coliform Assessment Key Findings

- 12 impaired streams partially or fully located in national forests/wilderness areas
- 5 impaired streams with contributing areas >90% forested/wetland
- 6 impaired streams had low fecal coliform concentrations past two years

Potential Causes in Forested Areas

Decentralized Campsites



Wildlife

Hiking Trails

Biota Fish Assessment Key Findings

- 21 impaired designated trout streams with contributing areas >90% forested/wetland
- 15 impaired designated trout streams partially or fully located in national forests/wilderness areas

ArcGIS StoryMap
Coosa-North Georgia 303 (d) Listed Streams (arcgis.com)

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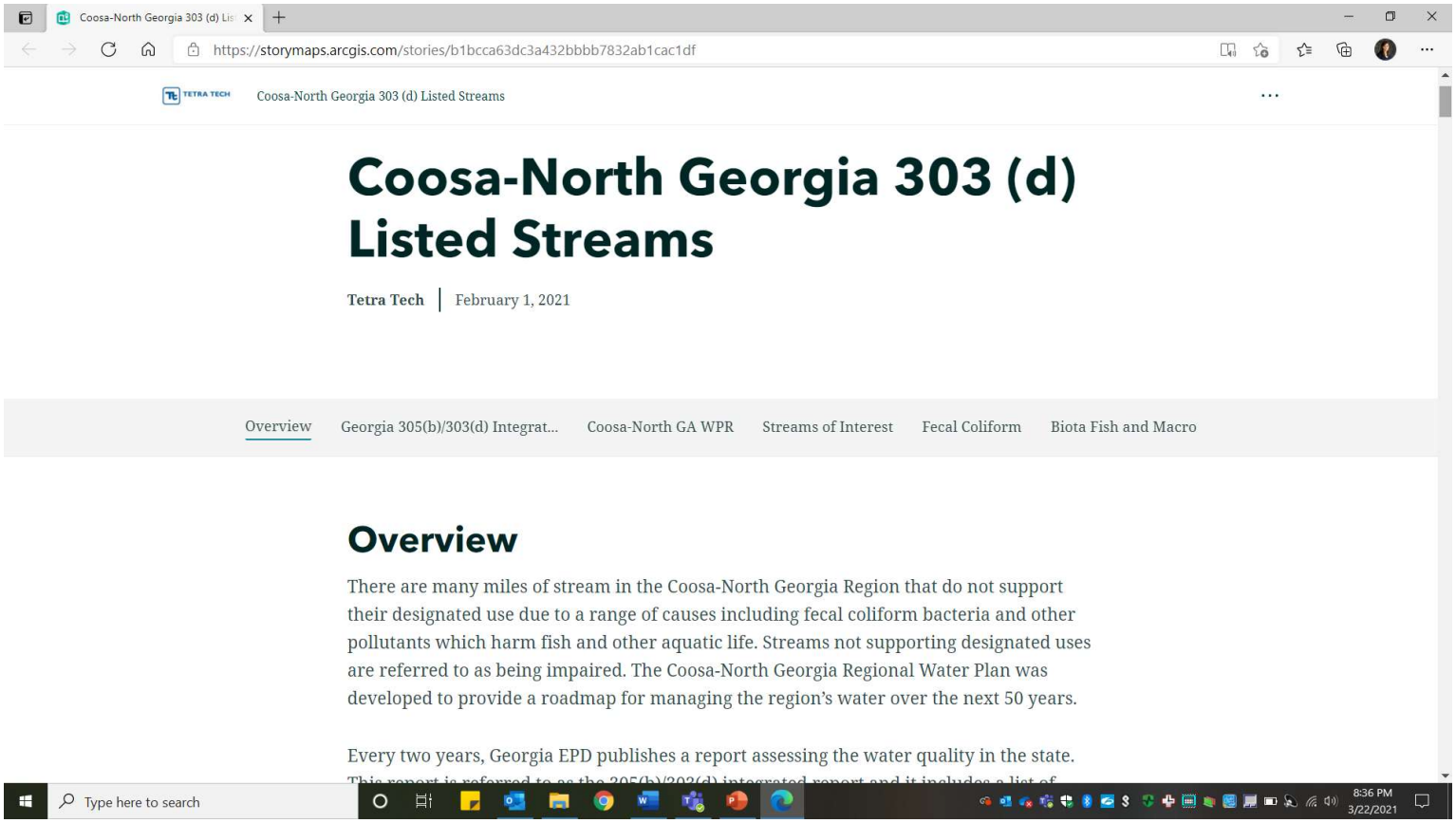

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Prioritization Tool Development

Prioritization Tool

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- Assessed current 303(d) listed stream for fecal/biota impairments
- Stream Health Assessment
  - 25 factors and metrics to assess land use, human impacts, and water quality
  - Metrics scored using weighted average based on data quality and client concerns
  - Streams receive scores from 1 to 10, 10 being 'healthy'
- Prioritization Assessment
  - 7 prioritization metrics to assess opportunities for delisting of stream segments
  - Prioritized reaches with high restoration/preservation potential based on current health, watershed size, ecological significance, and funding opportunities
  - Metrics scored using weighted average based data quality and client concerns
  - Streams receive scores from 1 to 10, 10 being 'high priority'

Coosa-North Georgia Stream Health and Stream Prioritization Tool

This spreadsheet tool should be used in tandem with the Stream Health and Prioritization Process Guidance Document

Spreadsheet Tool Tab Descriptions	
Tool Results	Provides the Stream Health Score and Prioritization Score, with scores ranging from 1 to 10. For stream health, higher scores indicate a relatively healthier stream. For prioritization, higher scores indicate the stream should be targeted for remediation.
Stream Health Metrics	The metric categories, scores, and score weighting are pre-set in this worksheet, along with descriptions of each metric is used to identify stream health characterization (ranging from extremely developed to undisturbed) and stream health prioritization (ranging from lowest to highest priority). *User can change metric scores and weighting in this tab.*
Stream Prioritization Metrics	The metric categories, scores, and score weighting are pre-set in this worksheet, along with descriptions of each metric is used to identify stream mitigation prioritization (ranging from lowest to highest priority). *User can change metric scores and weighting in this tab.*
Imported Stream Data	The processed spatial and report data for each metric by stream. *User can update or input new data in this tab.*
Data Source	The date of each data source for metrics at the time of the analysis. This will make it clear when updates may be required for stream analyses when updated GIS files or additional data become available at a later date. User should update data source documentation when new data is input into Imported Stream Data tab.
Interim Processing Scores	Shows the scores for each stream and each metric that are used to calculate the overall scores.

Tool Descriptions and How To	
Clear Content	Press this button to clear all contents for a new run. Note that the StreamHealthMetrics, PrioritizationMetrics, DataSource, and ImportedStreamData tabs remain unaffected by this.
Results	Press this button to display the results. The results can be viewed in the "ToolResults" worksheet.

Stream Health Metrics

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Stream Health Metrics					
Negatively Impacting Streams; High Value = Low Score = More degraded					
Metric	Metric Comment	Metric Value	Metric Score	Score Weight (Fecal Coliform)	Score Weight (Aquatic Biota)
Imperviousness (percent area)	Indicator of development in a watershed and is correlated to watershed degradation through higher runoff and stream erosion	3%	1	High	High
		1%	5		
		< 1%	10		
Residential/Urban Land (percent area)	Indicator of population, stress to the watershed, and relative lack of open space; residential areas can be a source of pollutants due to fertilizer application, pets, and trash	9%	1	High	High
		5%	5		
		< 5%	10		
Human Population (count per acre drainage area)	Correlates to higher sanitary or septic loads, higher chance for spills, higher chance for illicit discharges, and higher water quality pollutant loads	0.15	1	Low	Low
		0.07	5		
		< 0.07	10		
NPDES Dischargers (count in drainage area)	Point sources that discharge nutrients and/or pollutants to the watershed may cause additional disturbance to watershed health	2	1	Low	Low
		0	5		
		< 0	10		
Septic Systems (count per acre drainage area)	Indicator of potential human fecal or nutrient loading; however, cannot determine if systems are maintained and functioning properly	0.10	1	Med	Med
		0.05	5		
		< 0.05	10		
Land/Biosolid Application Systems/Ag Lagoons (count in drainage area)	Municipal LAS, biosolid applications, and agricultural lagoons may contribute fecal and nutrient loads to local waterways	1	1	Med	Med
		0	10		
Row Crop Land Use (percent area)	Indicator or potential nutrient (fertilizer application) loading, and erosion from agricultural land could contribute sediment to streams	1%	1	High	High
		0%	5		
		< 0%	10		
Agriculture/Pasture Land Use (percent area)	Indicator or potential nutrient (fertilizer application) and fecal (livestock) loading the rural nature of a watershed, and erosion from sites could contribute sediment to streams	15%	1	High	High
		10%	5		
		< 10%	10		
Poultry houses/land application of litter (count in drainage area)	Common practice to use poultry litter to fertilize fields and pastures. May contribute to fecal depending on volume of application and proximity to waterways.	3	1	Med	Med
		0	5		
		< 0	10		
Deer/Hog Density (count per acre drainage area)	Estimated wildlife density related to fecal inputs to local waterways	0.05	1	Med	Med
		0.02	5		
		< 0.02	10		
Dispersed Campsites in Forested Area (count in	Dispersed campsites do not have restroom facilities and could be	5	1	Med	Med
		0	5		

Stream Health Metrics					
Positively Impacting Streams; High Value = High Score = Less degraded					
Metric	Metric Comment	Metric Value	Metric Score	Score Weight (Fecal Coliform)	Score Weight (Aquatic Biota)
Existing BMPs (count in drainage area)	Existing BMPs may reduce storm flow, sediment, and bacteria from entering streams; however, this does not evaluate treated area and cannot determine if BMPs are functioning as designed	10	10	Low	Low
		5	5		
		< 5	1		
Forested Land Use (percent area)	Indicator of an undisturbed watershed, forests provide natural stormwater control and prevent erosion	80%	10	High	High
		60%	5		
		< 60%	1		
Wilderness/National Forest Area (percent area)	Generally undeveloped land should improve water quality; however higher wildlife population could contribute more fecal matter	50%	10	High	High
		20%	5		
		< 20%	1		
Wetlands (percent area)	Wetlands can act as nutrient sinks and retain floodwater, improving overall water quality; however higher waterfowl population could contribute more fecal matter	5%	10	Med	Med
		2.5%	5		
		< 2.5%	1		
Riparian Areas (percent linear stream area)	Riparian forests filter pollution and prevent erosion; however, rills/gullies in buffered areas allow stormwater flow to directly enter stream and cause erosion in localized areas	75%	10	High	High
		50%	5		
		< 50%	1		
Fish Biology Data Analysis (most recent IBI)	Instream aquatic biology data can be used to identify poor waterways conditions for potential remediation	44	10	High	High
		42	7.5		
		32	2.5		
		< 32	1		

... StreamHealthMetrics | PrioritizationMetrics | ImportedStreamData | DataSource | InterimProcessingScores

Prioritization Metrics

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Stream Prioritization Metrics				
High Value = High Score = Higher Prioritization				
Metric	Metric Comment	Metric Value	Metric Score	Score Weight
Stream Health Score	Depending on goals, can prioritize streams that are almost healthy to try to delist or prioritize very unhealthy streams to make them more healthy	7	10	High
		5	5	
		< 5	1	
MS4 area (percent of drainage area)	Indicator of potential opportunities receive funding for BMPs by partnering with MS4 that is required to address TMDL	5%	10	High
		0%	5	
		< 0%	1	
Future Development Areas (percent of drainage area)	Prioritize streams where development is expected to occur to prevent further degradation	1%	10	Low
		0%	5	
		< 0%	1	
Trout Stream Designation	Prioritize trout streams	Yes	10	Med
		No	1	
Number of Impaired Upstream Segments	Will be more difficult to improve stream health if upstream areas are also impaired; would require a larger project	0	10	High
		2	5	
		> 2	1	
Drainage Area Size	May be less expensive to improve water quality in smaller watershed by targeted known causes of impairment	2500	10	Med
		15000	5	
		> 15000	1	
DNR Element Occurrence of Sensitive Species (count per acre drainage area)	Prioritize streams that are considered significant to biodiversity due to native wildlife species and natural habitats	0.5	10	Med
		0.2	5	
		< 0.2	1	

Stream Health/Prioritization Results

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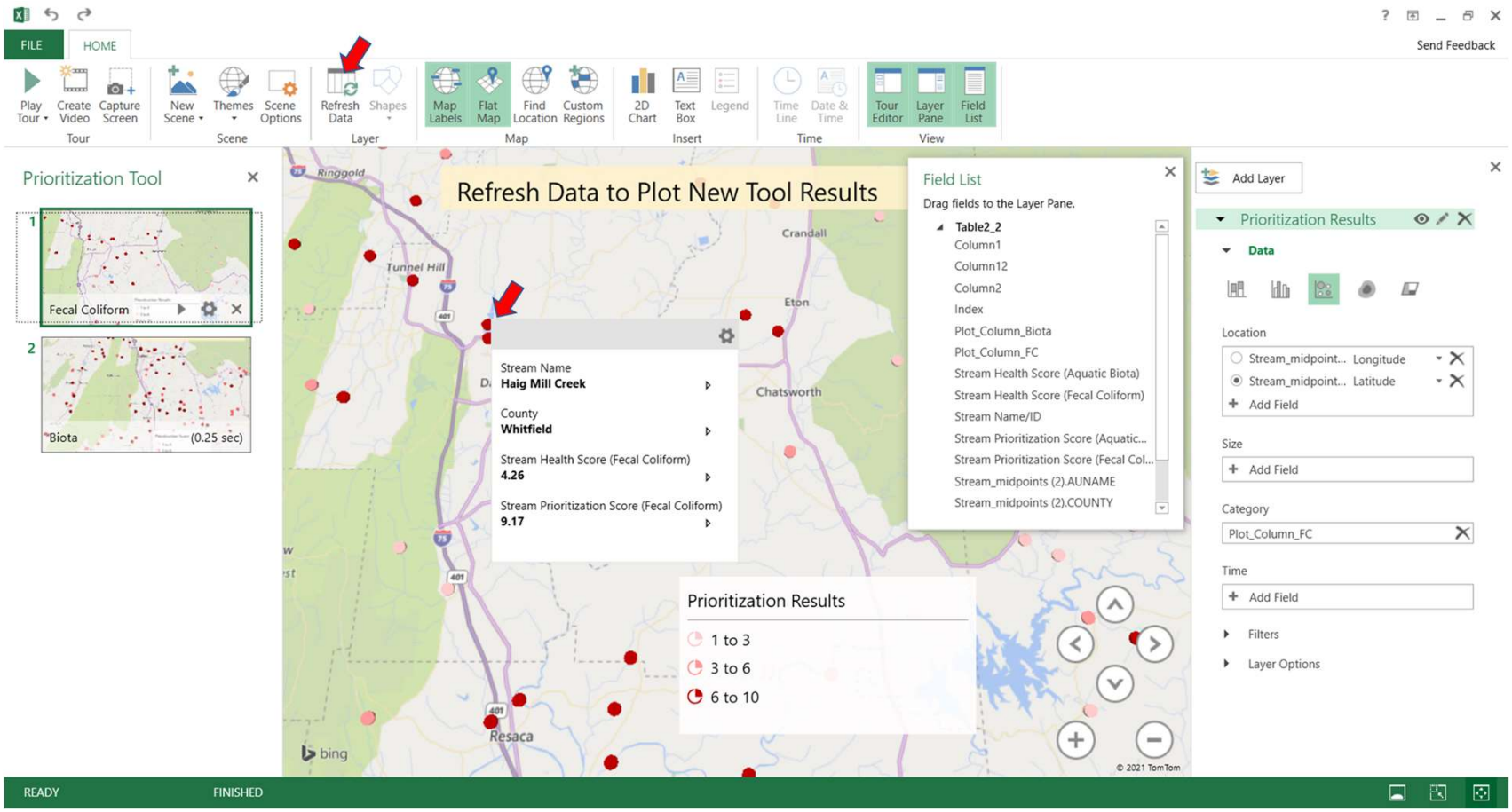
Stream Name/ID	Stream Name	County	Stream Health Score (Fecal Coliform)	Stream Health Score (Aquatic Biota)	Stream Prioritization Score (Fecal Coliform)	Stream Prioritization Score (Aquatic Biota)
GAR031501020409	Flat Creek	Gilmer	4.71	4.36	5.31	5.31
GAR031501020105	Tickanetly Creek	Gilmer	7.42	7.06	3.38	3.38
GAR031501010305	Mill Creek	Whitfield	4.02	3.71	5.13	5.13
GAR031300010205	Hazel Creek	Habersham	4.00	3.77	3.75	3.75
GAR031501020410	Fir Creek	Gilmer	7.11	7.11	4.13	4.13
GAR031501010205	Conasauga River	Murray, Whitfield	4.96	4.77	3.44	3.44
GAR060200020512	Youngcane Creek	Union	5.18	4.99	4.56	5.50
GAR031501040504	Sharp Mountain Creek	Pickens	5.26	4.86	4.06	5.00
GAR031501020101	Cartecay River	Gilmer	6.18	5.77	2.50	2.50
GAR031501020209	Boardtown Creek	Fannin, Gilmer	7.09	6.83	3.88	4.63
GAR060200020511	Wolf Creek	Union	7.55	7.43	4.50	4.50
GAR031501010502	Conasauga River	Whitfield, Murray	3.04	2.73	5.13	5.13
GAR031300010311	Mud Creek	Habersham, Hall	4.02	3.82	4.69	4.69
GAR031501020104	Clear Creek	Pickens, Gilmer	7.51	7.30	3.63	3.63
GAR031501030501	Armuchee Creek	Floyd	5.93	5.48	3.25	3.25
GAR060200010707	Cat Creek	Catoosa, Whitfield	5.23	5.45	4.88	4.88
GAR060200010713	Tributary #2 to Little Chickama	Catoosa	4.38	4.40	6.44	6.44
GAR031501050211	Horseleg Creek	Floyd	5.17	5.00	6.38	7.31
GAR031501030502	Lavendar Creek	Floyd	7.66	7.43	3.63	3.63
GAR060200010704	Little Chickamauga Creek	Catoosa	4.38	3.98	4.81	4.81
GAR031501030111	Oothkalooga Creek	Bartow, Gordon	3.98	3.69	3.75	3.75
GAR031501020811	Coosawattee River	Gordon	4.94	4.60	3.44	3.44
GAR060200010702	East Chickamauga Creek	Whitfield, Catoosa	4.67	4.33	4.94	4.94
GAR060200011015	Chattanooga Creek	Walker	4.51	4.10	5.88	5.88
GAR060200030123	Cooper Creek	Union	7.33	7.11	4.50	4.50
GAR060200010927	Peavine Creek	Walker	4.29	4.21	4.69	4.69
GAR031501020205	Big Turniptown Creek	Gilmer	7.36	7.09	3.88	3.88
GAR031501040108	Tributary to Etowah River	Lumpkin	6.04	6.21	6.13	6.13
GAR060200020503	Lower Youngcane Creek	Union	5.05	5.29	5.81	5.81

Info | ToolResults | StreamHealthMetrics | PrioritizationMetrics | ImportedStreamData | DataSource | Interim ...

Stream Health/Prioritization Results

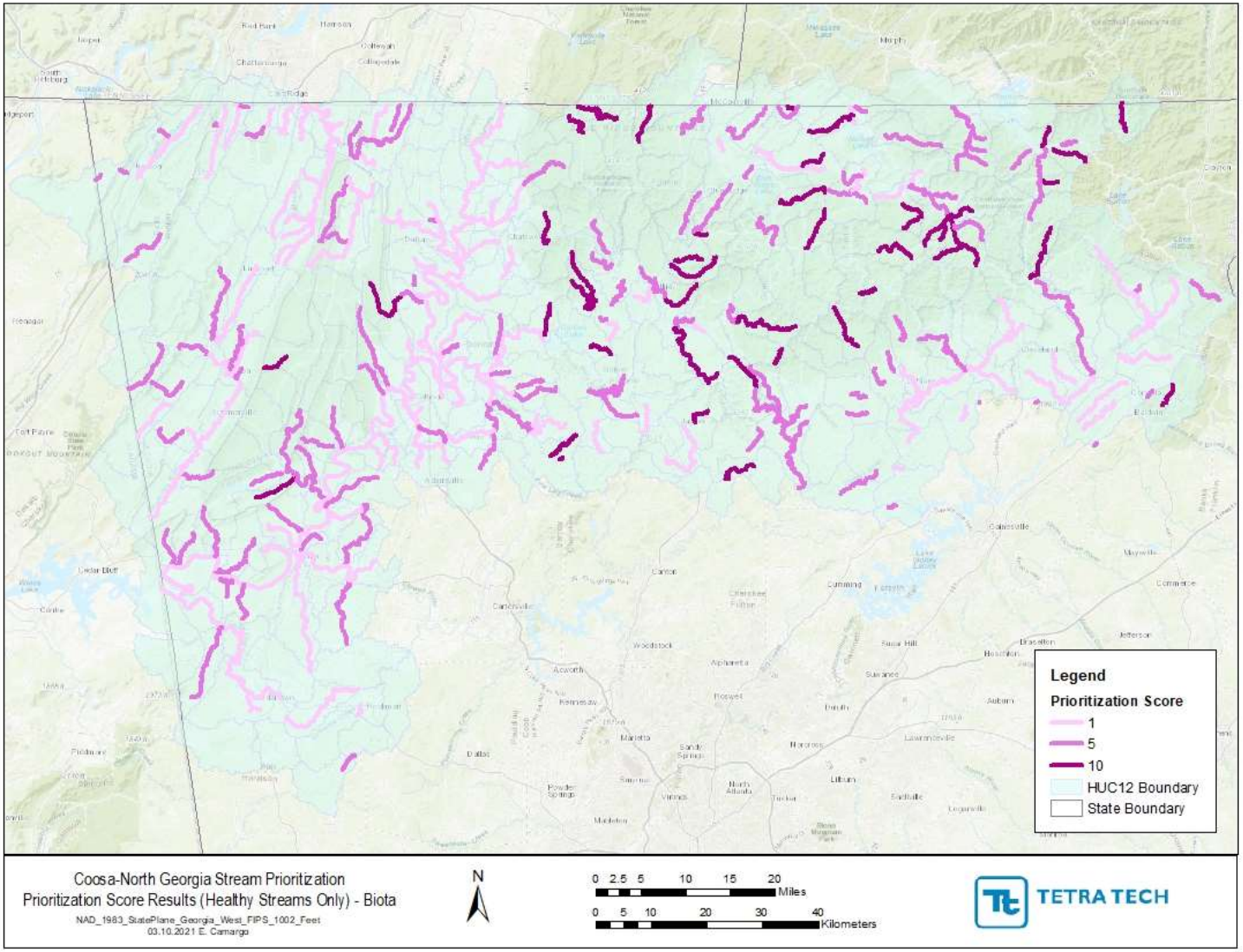


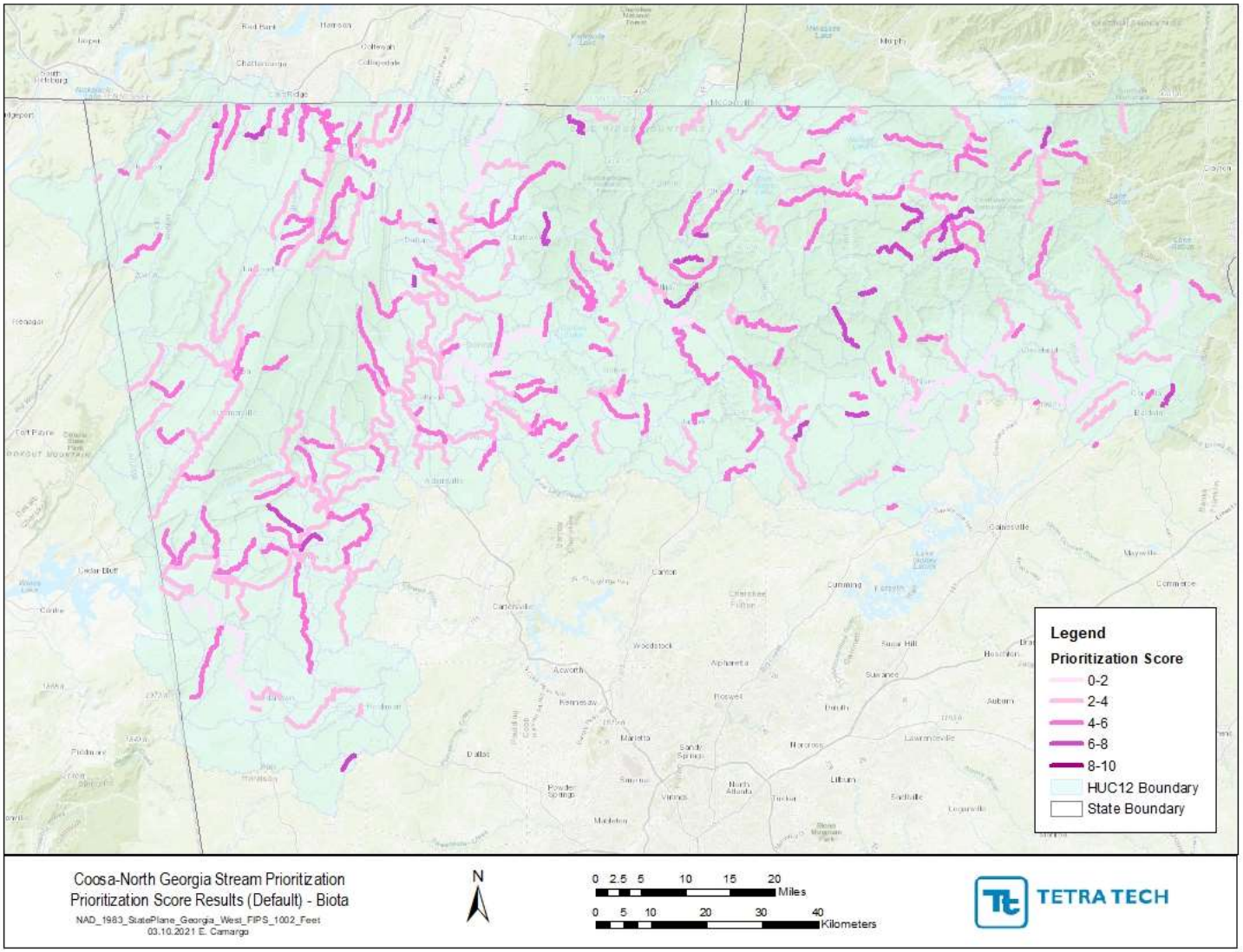
Interim Stream Health/Prioritization Results

TETRA TECH

	A	B	C	D	E	F	G	H	I	J	K	L	M	N
1	Stream Name/ID	Imperviousness (percent area)	Residential/Urban Land (percent area)	Human Population (count per acre drainage area)	NPDES Dischargers (count in drainage area)	Septic Systems (count per acre drainage area)	Land Application Systems (count per drainage area)	Row Crop Land Use (percent area)	Agriculture/Pasture Land Use (percent area)	Poultry houses/land application of litter (count per acre drainage area)	Deer/Hog Density (count per acre drainage area)	Dispersed Campsites in Forested Area (count in drainage area)	Trails/Human Use in Forested Area (miles per drainage area)	Dirt Road Crossings (count per mile)
2	Corresponding Weights (Fecal Coliform)	3	3	1	1	2	2	3	3	2	2	2	1	2
3	Corresponding Weights (Aquatic Biota)	3	3	1	1	2	2	3	3	2	2	2	1	2
4	GAR031501020409	5	1	1	10	5	10	5	1	1	5	10	10	10
5	GAR031501020105	10	10	10	10	10	10	5	10	1	5	10	5	1
6	GAR031501010305	1	1	1	5	1	10	5	10	0	5	10	5	10
7	GAR031300010205	1	1	1	1	1	10	5	1	1	5	10	10	10
8	GAR031501020410	10	5	1	10	5	10	10	10	10	5	10	10	10
9	GAR031501010205	10	10	5	5	10	10	1	5	0	5	1	1	10
10	GAR060200020512	10	5	5	10	5	10	5	1	0	5	5	1	10
11	GAR031501040504	1	1	1	10	1	10	5	5	1	5	10	10	10
12	GAR031501020101	10	5	5	5	10	10	5	10	1	5	10	5	10
13	GAR031501020209	10	10	5	10	10	10	5	10	10	5	10	5	10
14	GAR060200020511	10	10	10	5	10	10	10	10	0	5	1	1	1
15	GAR031501010502	5	1	1	1	5	1	1	1	0	5	1	1	10
16	GAR031300010311	1	1	1	5	1	10	5	1	1	5	10	10	10
17	GAR031501020104	10	5	5	10	10	10	5	10	1	5	10	10	10
18	GAR031501030501	10	10	10	1	10	10	1	5	0	5	10	1	10
19	GAR060200010707	10	5	5	10	10	10	1	1	0	10	10	10	10
20	GAR060200010713	5	1	1	10	5	10	1	1	0	10	10	10	10
21	GAR031501050211	1	1	1	10	1	10	10	10	0	10	10	10	10
22	GAR031501030502	10	10	10	5	10	10	10	10	0	5	10	10	10
23	GAR060200010704	5	1	1	10	5	10	5	1	0	10	10	10	10
24	GAR031501030111	1	1	1	1	1	10	1	1	0	10	10	10	10
25	GAR031501020811	10	5	5	1	5	1	5	10	1	5	5	1	10
26	GAR060200010702	5	5	1	10	10	10	5	1	0	5	10	1	10
27	GAR060200011015	5	1	1	10	1	10	5	5	0	5	10	10	10
28	GAR060200030123	10	10	10	10	10	10	5	10	0	5	1	1	1
29	GAR060200010927	5	1	1	10	5	10	1	1	0	5	10	10	10
30	GAR031501020205	10	5	5	10	5	10	10	10	10	5	10	10	10
31	GAR031501040108	10	1	1	10	1	10	10	10	1	5	10	10	10
32	GAR060200020503	5	1	1	10	1	10	5	1	0	10	10	10	10

... StreamHealthMetrics | PrioritizationMetrics | ImportedStreamData | DataSource | **InterimProcessingScores**


Legend
Prioritization Score
1
5
10
HUC12 Boundary
State Boundary
Coosa-North Georgia Stream Prioritization
Prioritization Score Results (Healthy Streams Only) - Biota
NAD_1983_StatePlane_Georgia_West_FIPS_1002_Feet
03.10.2021 E. Camargo
N
0 2.5 5 10 15 20
Miles
0 5 10 20 30 40
Kilometers
TETRA TECH


Legend
Prioritization Score
0-2
2-4
4-6
6-8
8-10
HUC12 Boundary
State Boundary
Coosa-North Georgia Stream Prioritization
Prioritization Score Results (Default) - Biota
NAD_1983_StatePlane_Georgia_West_FIPS_1002_Feet
03.10.2021 E. Camargo
N
0 2.5 5 10 15 20
Miles
0 5 10 20 30 40
Kilometers
TETRA TECH

Water Quality and Biota Sampling

GAEPD Sampling and Quality Assurance Plan

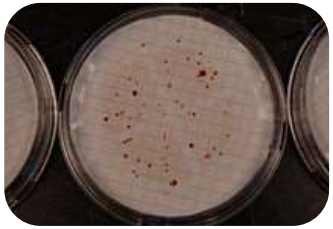
Sampling stations

Parameters

Schedule

Methods

Handling and custody



Analytical methods

Quality control

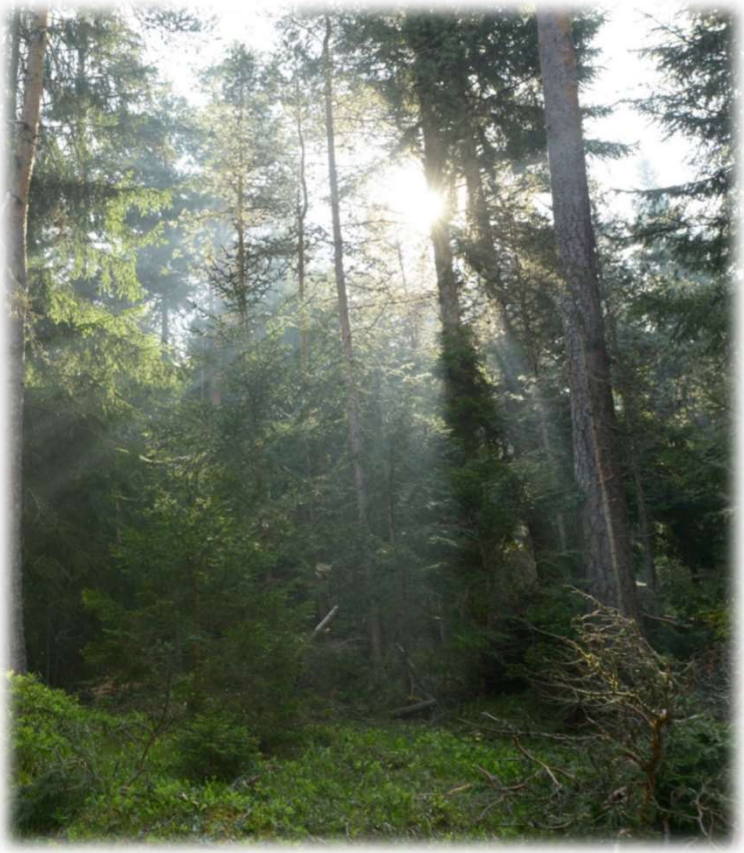
Data quality objective

GAEPD can use data in 305(b)/303(d) listing assessments

Initial Recommended Bacteria Sampling Locations

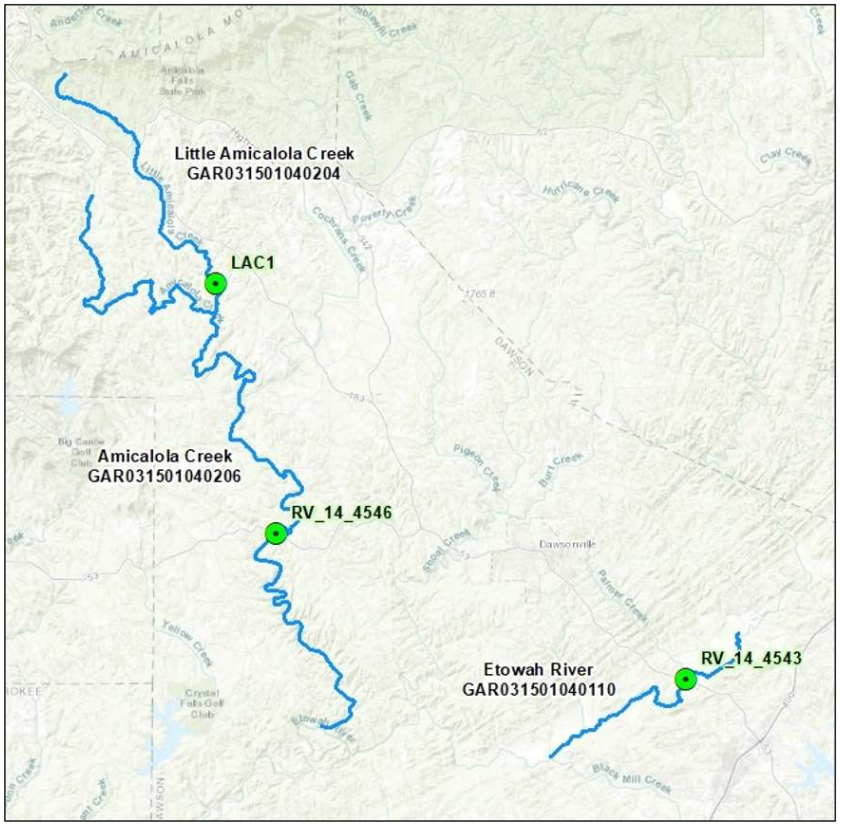
TETRA TECH

- Nottely River (2 reaches)
  - High stream health and prioritization scores
  - Watershed partially located in national forest/wilderness areas
  - Dominated by forested land uses
  - No upstream fecal coliform impairments
- GAEPD sampled both impaired Nottely River reaches in 2020
  - Upstream reach will be delisted
  - Downstream reach still impaired



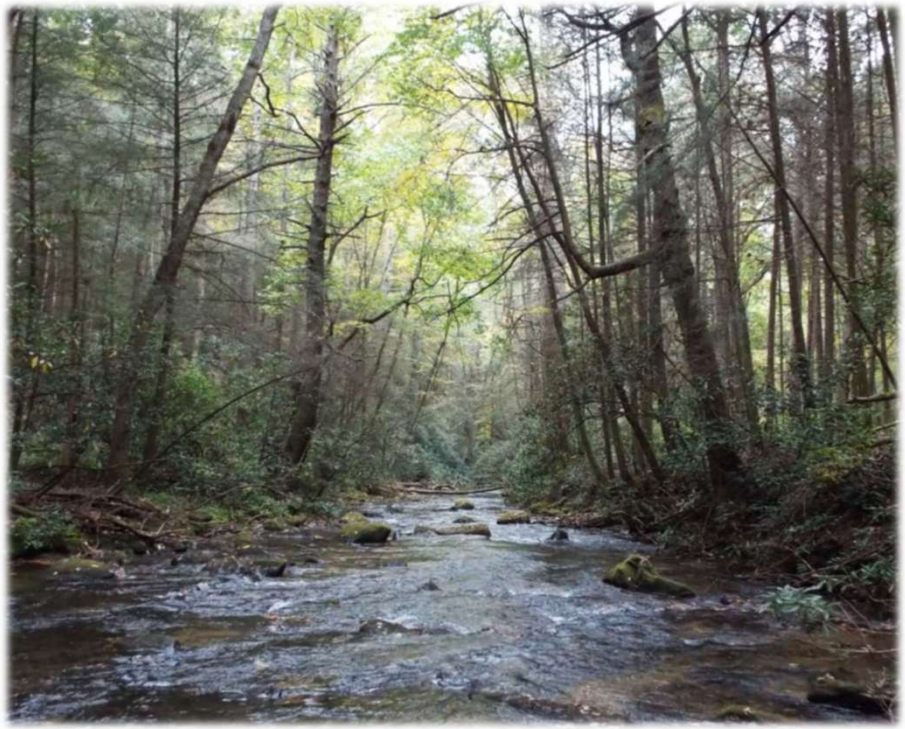
Bacteria Sampling Locations

- Ninetynine Branch, Little Amicalola Creek, Amicalola Creek (2 reaches), Etowah River
  - Generally high stream health and prioritization scores
  - Dominated by forested land uses
  - Previous summer Etowah WSA bacteria data from Etowah River and Amicalola Creek met WQ standards
- GAEPD sampling Ninetynine Branch and one Amicalola Creek reach in 2021
- Tetra Tech Team sampling Little Amicalola Creek, Amicalola Creek (1 reach), and Etowah River in 2021



Fish Biota Sampling Locations

- Wolf Creek and Helton Creek
  - High stream health and prioritization scores
  - Small upstream drainage areas
  - Designated trout streams
  - Watersheds partially located in national forest/wilderness areas
  - Dominated by forested land uses



Sampling Rainfall Conditions

- Amicola Creek USGS 02390000
- July 7 – August 6
  - Rainfall 23 of 31 days
  - Total rainfall 6.81 inches

- Etowah River USGS 02390050
- July 7 – August 6
  - Rainfall 23 of 31 days
  - Total rainfall 6.68 inches

- Amicola Creek USGS 02390000
- October 1 – October 31
  - Rainfall 15 of 31 days
  - Total rainfall 5.5 inches

- Etowah River USGS 02390050
- October 1 – October 31
  - Rainfall 13 of 31 days
  - Total rainfall 6.4 inches

Initial Bacteria Sampling Results

TETRA TECH

Month	Fecal Coliform Water Quality Standard
May - Oct.	30-day geometric mean | 200 count/100 mL of fecal coliform Non-human, rivers/streams | 500 counts/100 mL fecal coliform
Nov. - April	30-day geometric mean | 1000 counts/100 mL of fecal coliform Max | 4000 counts/100 mL of fecal coliform

	Fecal Coliform Geometric Mean (col/100 mL)	
Stream	July	October
Little Amicalola Creek	317	82
Amicalola Creek	1,002	82
Etowah River	808	185

Next Steps

- Collect January and March bacteria geometric mean samples
- Calculate fish index of biotic integrity scores
- Compare data with state standards
- Validate scoring used in the prioritization tool and determine if any changes should be made to the tool
- Recommend actions that could be taken to improve water quality
- Final report summarizing results and recommendations

TETRA TECH

Questions?

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Natalie Postel, PE
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Planning Updates from Georgia EPD

Coosa-North Georgia
Regional Water Planning Council

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WATER PLANNING

Regional Water Plan Update Process

- Coordinated with the Metro Water District
- Process began in 2020 with Forecasting work
- Target for updated Plans by end of 2022
  - Draft Plans on public notice by Sept. 30, 2022
  - Updated Plans completed by Dec. 2022
- Technical work completed/ongoing that underlies the Regional Water Plans
- Quarterly Council Meetings

Regional Water Plan Update

Regional Water Plan Review and Revision Schedule

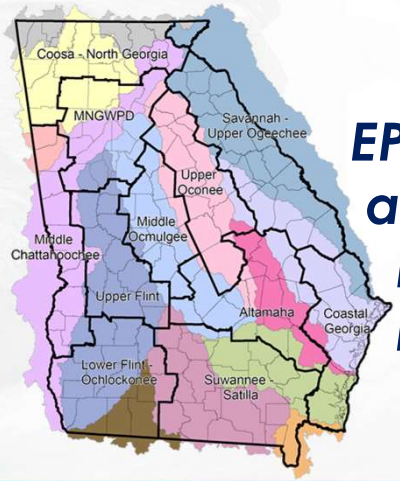
Council Meeting
4th Quarter 2021

Council Meeting
1st Quarter 2022

Council Meeting
2nd Quarter 2022

Council Meeting
3rd Quarter 2022
Draft Plan

Council Meeting
4th Quarter 2022
Final Plan



EPD targeted date of adoption of revised Regional Water Plan by December 2022

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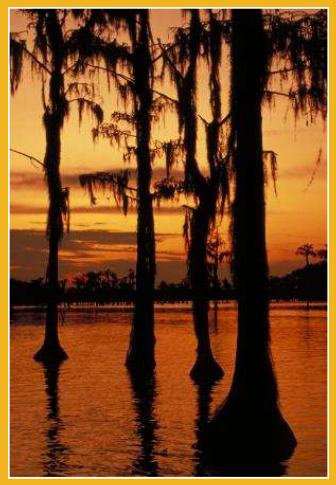
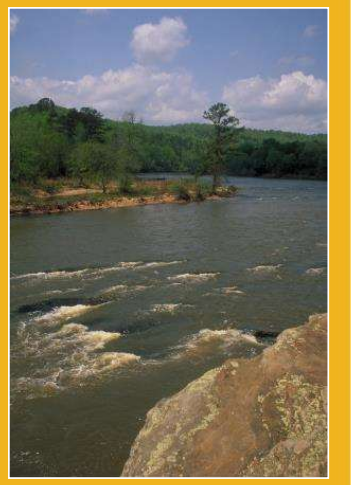
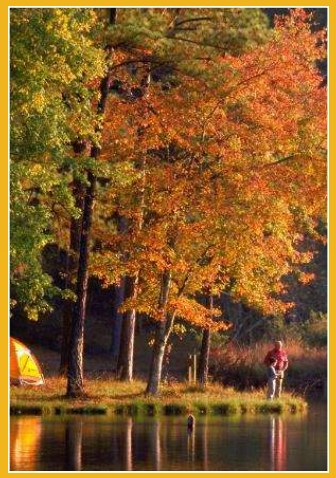
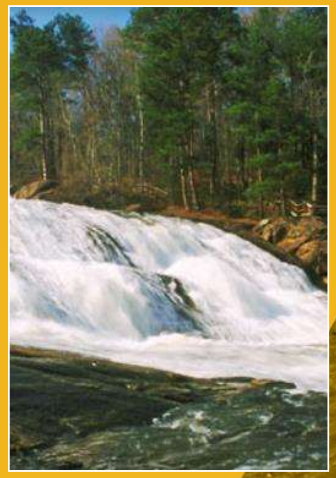
WATER PLANNING

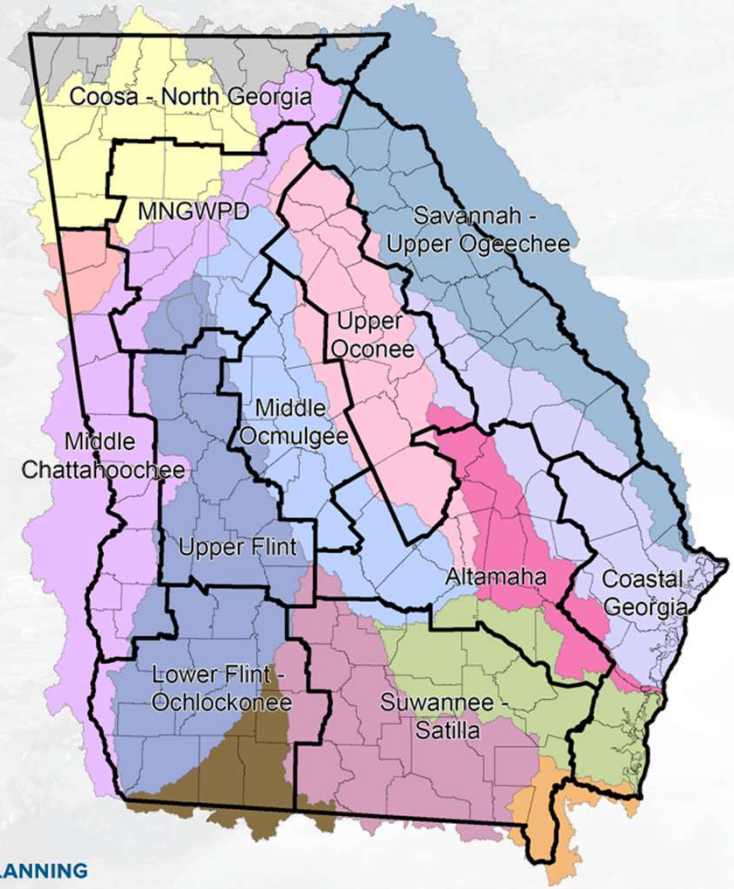
Regional Water Plan Review and Revision Process

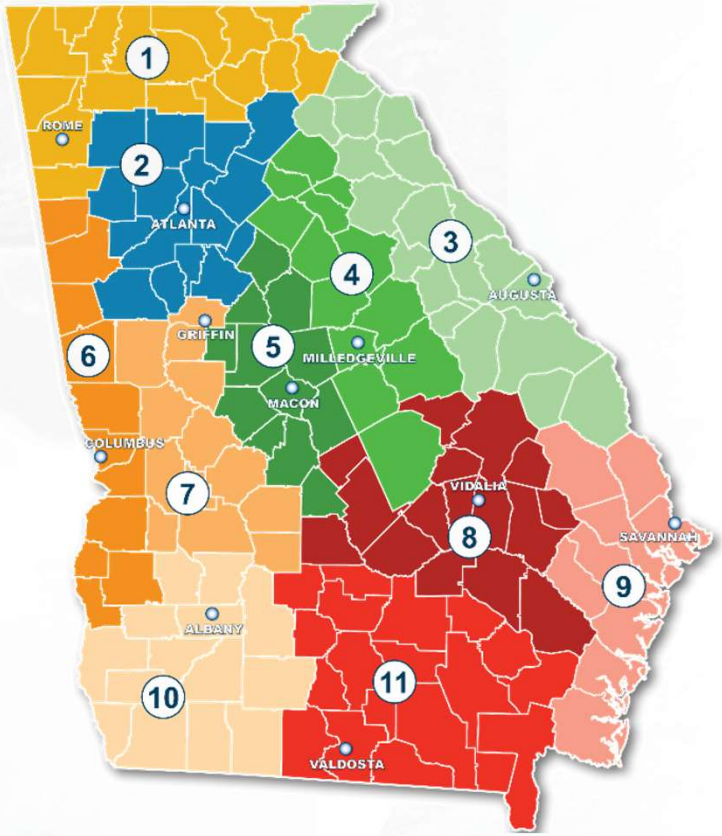
The 5-Year Review Process will focus on:

- Updated water demand and wastewater forecasts
- Update Surface Water and Ground Water Availability Resource Assessments (Quantity)
- Updated Surface Water Quality Availability Resource Assessment
- Refine Management Practices, if needed, to address water resource

Regional Water Planning Councils





1. COOSA-NORTH GEORGIA
2. METRO WATER DISTRICT
3. SAVANNAH-UPPER OGEECHEE
4. UPPER OCONEE
5. MIDDLE OCMULGEE
6. MIDDLE CHATTAHOOCHEE
7. UPPER FLINT
8. ALTAMAHA
9. COASTAL
10. LOWER FLINT-OCHLOCKONEE
11. SUWANNEE-SATILLA

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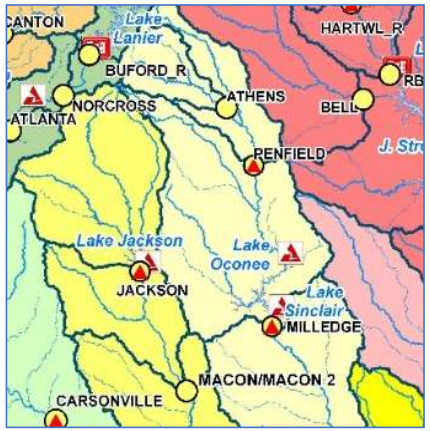
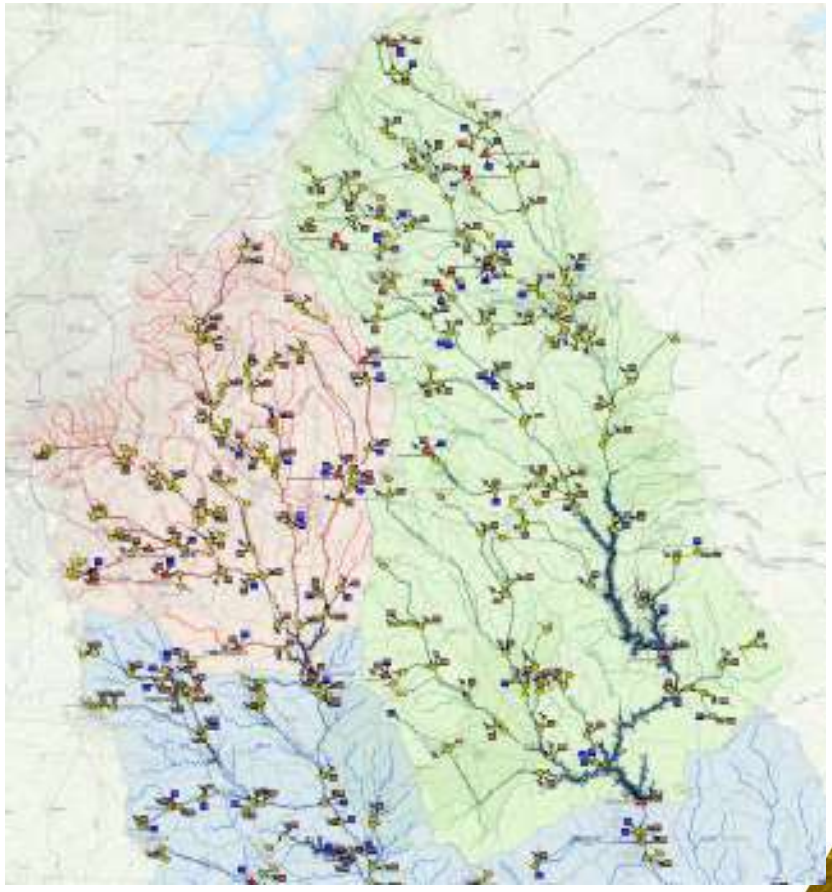
WATER PLANNING

Surface Water Resource Assessments

- Updates to Surface Water Availability Resource Assessment
  - New modeling tool: Basin Environmental Assessment Model ("BEAM")
  - Provides analysis at more nodes

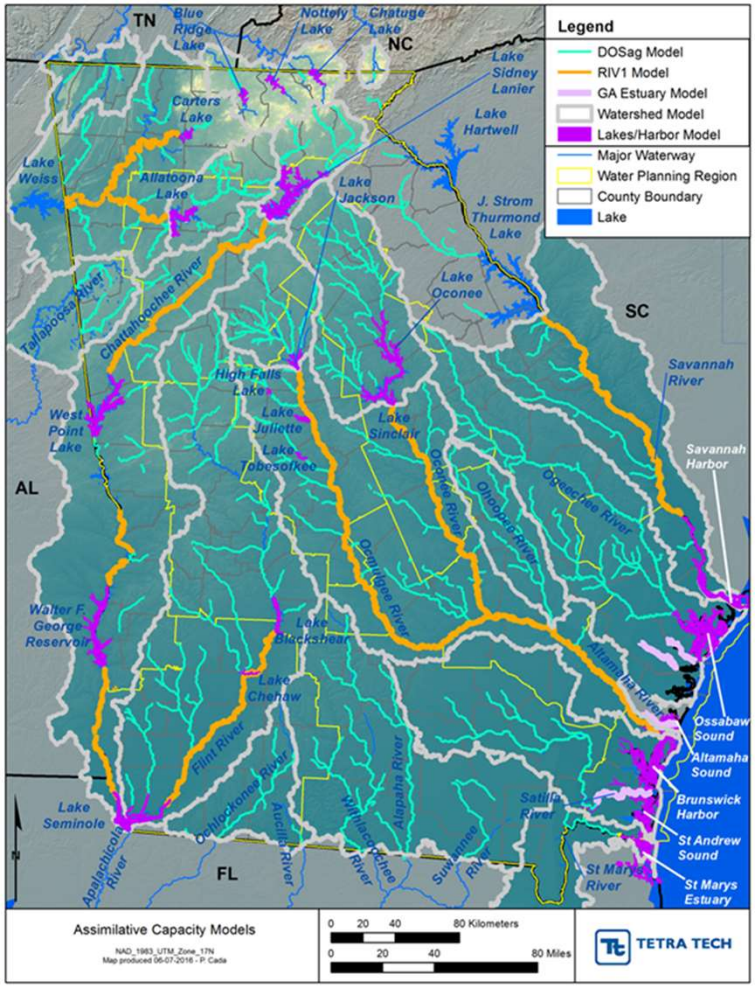




GEORGIA WATER PLANNING

Surface Water Resource Assessments

- Updates to Surface Water Quality (Assimilative Capacity) Resource Assessment
  - Updated information & model recalibration



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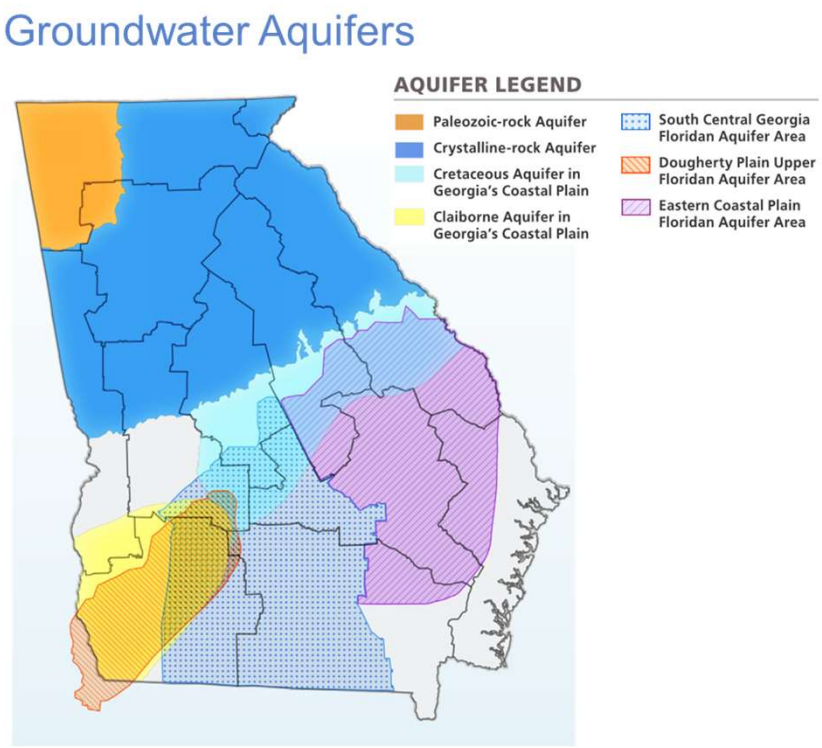
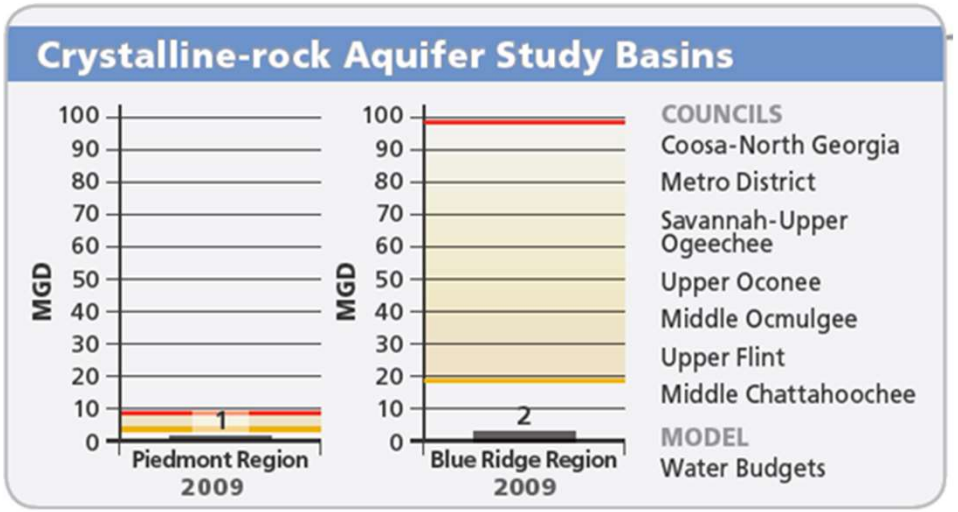
Groundwater Resources in Georgia



- Updates to Groundwater Availability Resource Assessment
  - Refined groundwater model with smaller grid spacing and transient pumping in the Coastal Plain (multiple aquifer layers)
  - Will compare updated forecasts to existing sustainable yield estimates in northern Georgia

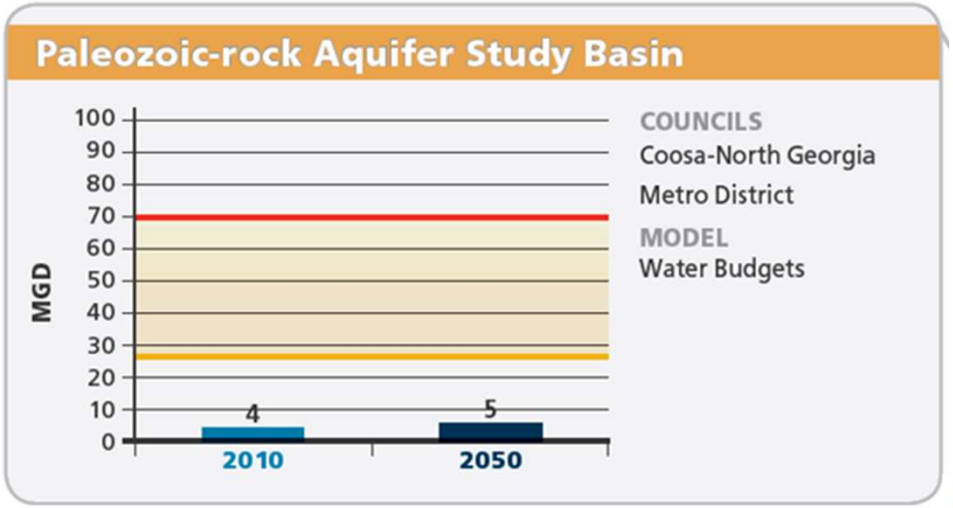
Groundwater Resources in Georgia

Crystalline Rock Aquifer Study Basins: Water Budget Modeling Approach



Range of Sustainable Yield

Paleozoic Rock Aquifer Study Basin: Numerical Groundwater Flow Model



Christine Voudy
Georgia Environmental Protection Division
(470) 607-2621
christine.voudy@dnr.ga.gov

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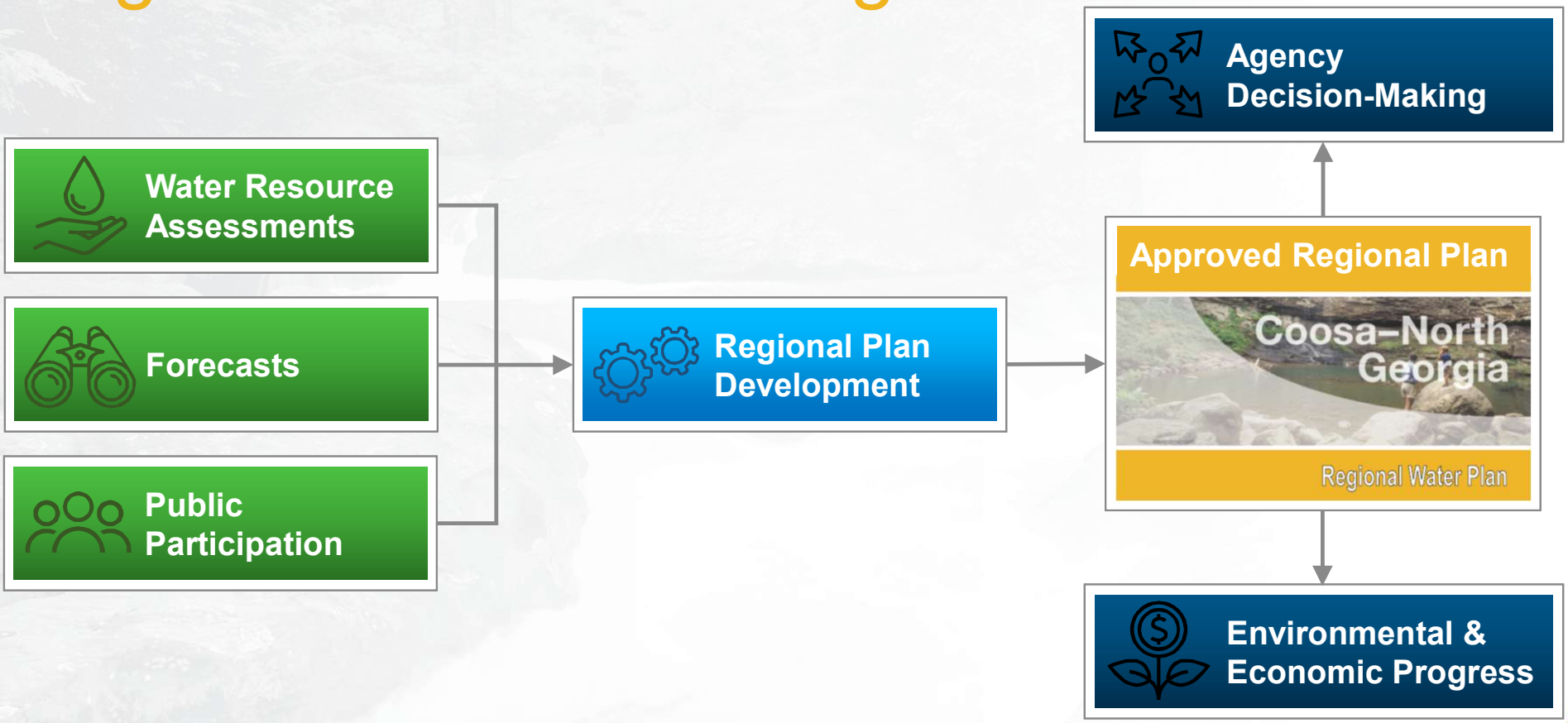
Water and Wastewater Demand Forecasting

Coosa-North Georgia
Regional Water Planning Council

GEORGIA
WATER PLANNING

Regional Water Planning Process



Industrial Water Demand Forecasting

- Industrial Forecasting Stakeholder Group
  - Initial stakeholder meeting held on June 3, and final stakeholder meeting held on November 13, 2020
  - Developed subgroups by major sectors to further inform data and methodology:
    - Poultry & Food Processing
    - Mining
    - Paper and Forest Products
    - Manufacturing

Industrial Water Demand Forecasting (Cont'd)

- Participating Industrial Stakeholders:
  - Industry Trade Groups:
    - Georgia Poultry Federation
    - Georgia Mining Association
    - Georgia Paper and Forest Products Association
    - Georgia Association of Manufacturers
    - Georgia Chemistry Council
  - Governor's Office of Planning and Budget
  - Georgia Department of Economic Development
  - Georgia Tech Research Institute
  - Representatives from a cross-section of industries, including:
    - International Paper
    - Mohawk Industries
    - Gulfstream
    - BASF
    - KIA Motors
    - Rayonier Performance Fibers
    - Packaging Corp. of America

Industrial Water Demand Forecasting

Survey Questions:
- **Average Water Use**
- **Water Sources**
- **Municipal Customer**
- **Average Discharge**
- **Receiving Bodies**
- **Municipal WW Customer**
- **Anticipated changes in next 5 – 10 years**

Forecast no longer relies upon employment projections

Three of the sub-sector groups conducted surveys to inform the best approach to estimating future water demand:

- Georgia Poultry Federation survey of membership with assistance from Georgia Tech Research Institute
- Georgia Mining Association survey of membership
- Georgia Association of Manufacturers survey of membership

The Paper and Forest Products group developed recommendations for estimating future water demand for their sub-sector.

Water demands should stay constant (on an annual avg. basis) due to conservation/ efficiency efforts

Modest growth in water demands

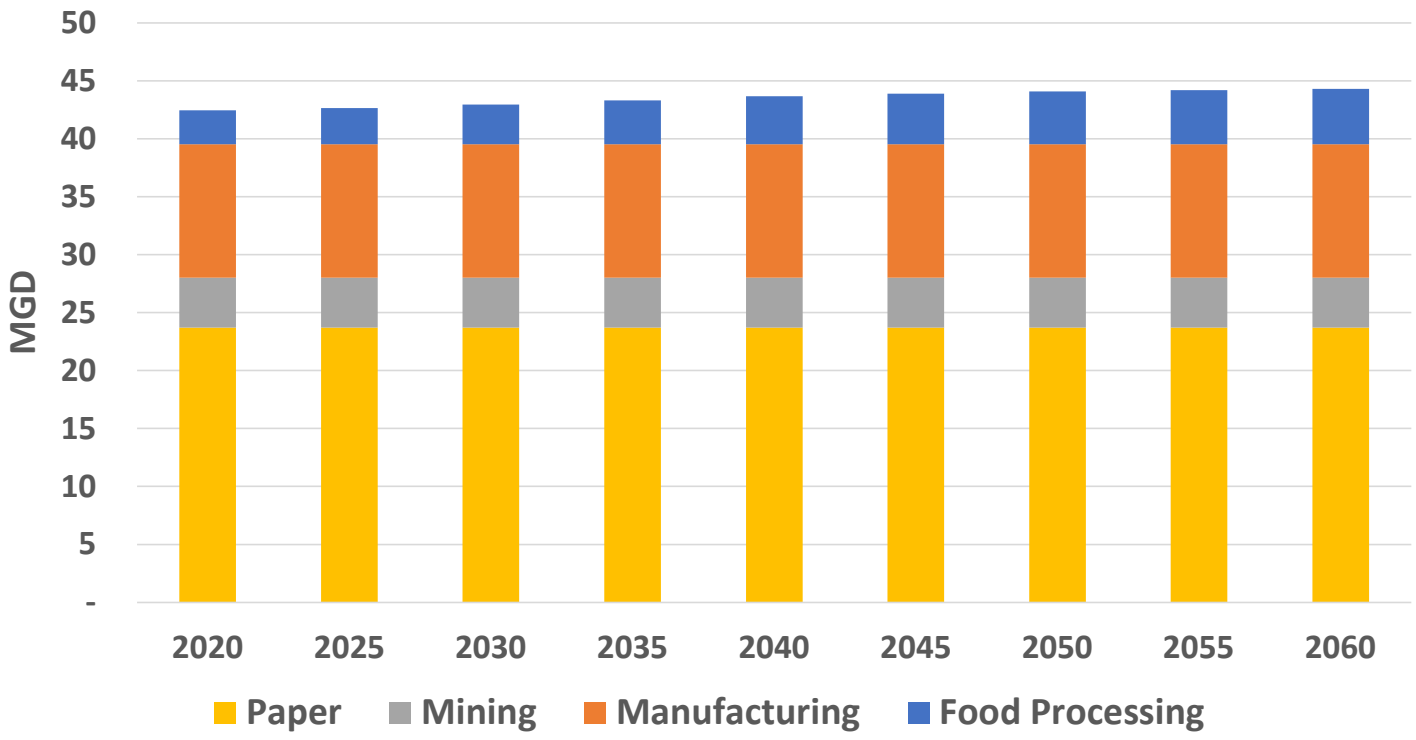
Industrial Water Demand Forecasting

Planning Region	Sub-sector	2020 MGD	2030 MGD	2040 MGD	2050 MGD	2060 MGD
Coosa - North Georgia	Food	2.94	3.43	4.14	4.55	4.79
	Manufacturing	11.52	11.52	11.52	11.52	11.52
	Mining	4.30	4.30	4.30	4.30	4.30
	Paper	23.72	23.72	23.72	23.72	23.72
	Total	**42.48**	**42.97**	**43.68**	**44.09**	**44.32**

Final report posted on Water Planning website:

https://waterplanning.georgia.gov/forecasting/industrial-water-use

Industrial Water Demand Forecasting



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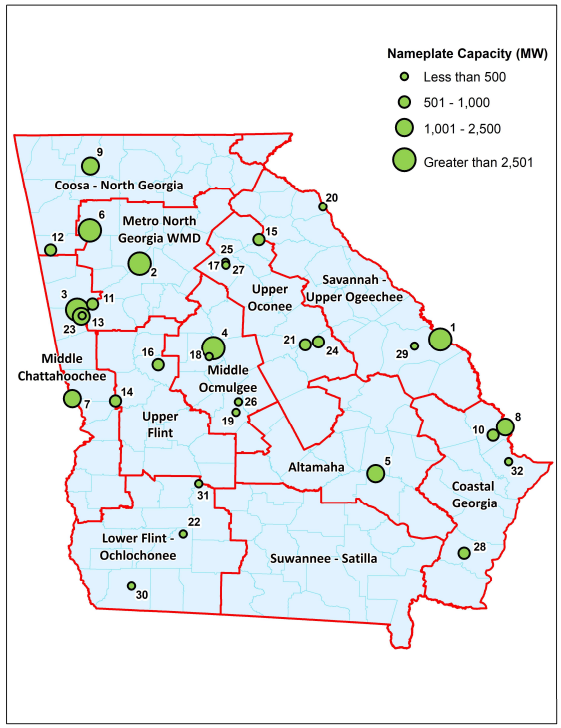
WATER PLANNING

Energy Water Demand Forecasting

- Stakeholders provide input on the methodology to estimate future water demand for thermoelectric power generation and statewide energy generation
- Factors evaluated:
  - List of thermoelectric facilities
  - Forecasts for water withdrawal and consumption by facility
  - Other available data



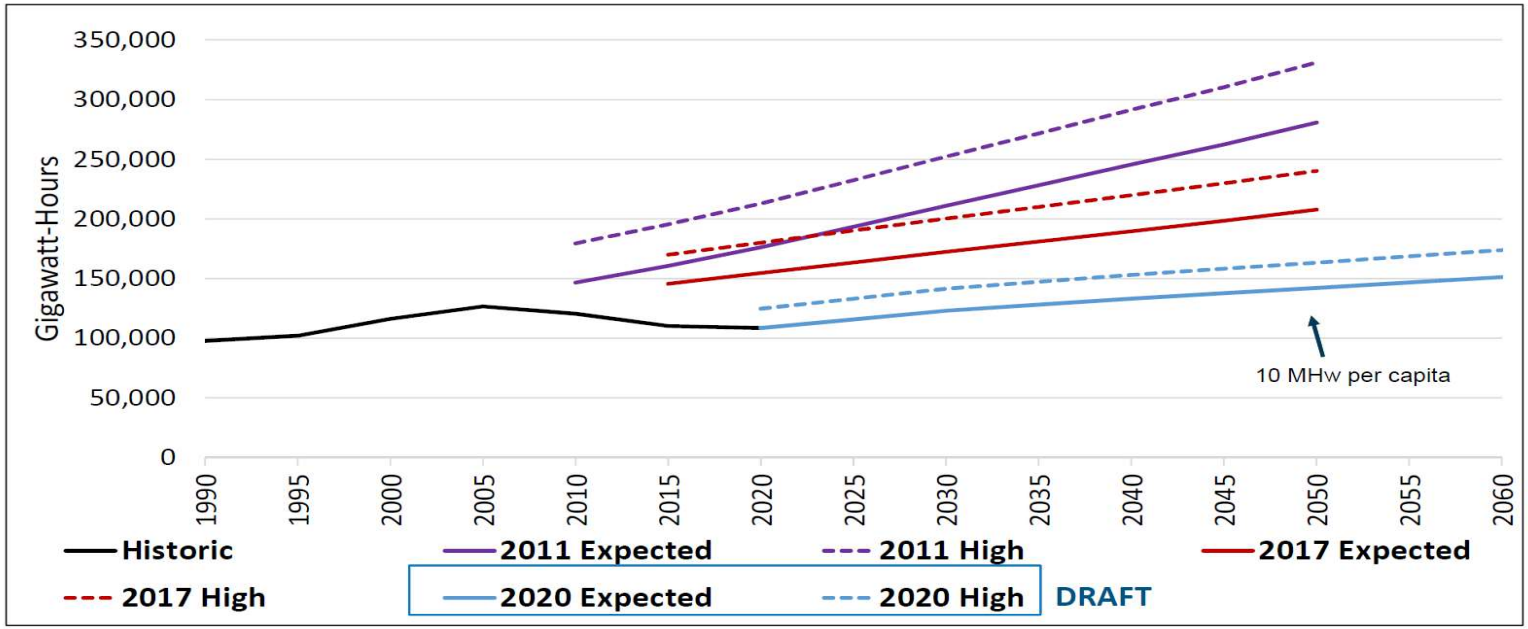
Energy Water Demand Forecasting (Cont'd)

Stakeholder group includes representatives from:

- Georgia Power / Southern Company
- Municipal Electric Authority of Georgia (MEAG)
- Oglethorpe Power Corporation
- Dalton Utilities
- Georgia Public Service Commission
- Georgia Environmental Finance Authority

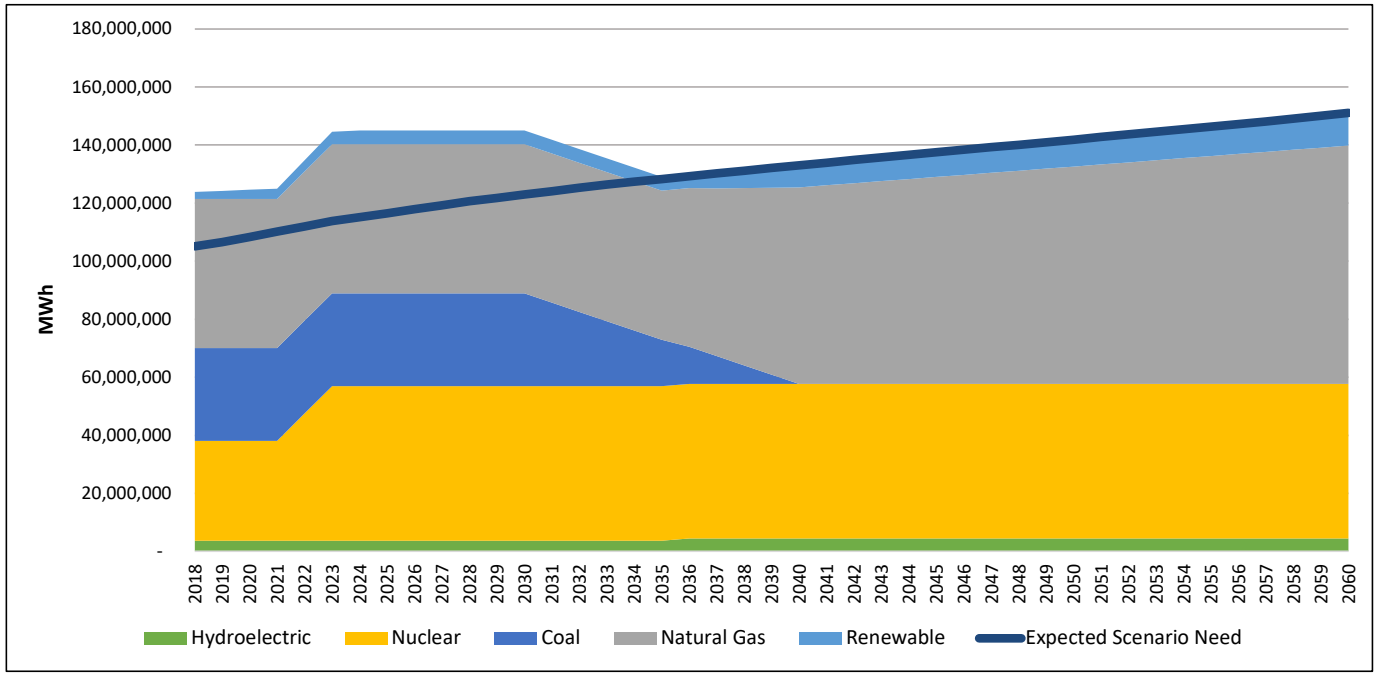
Energy Forecasting – Looking back…

Step 1: How Much Power will Georgia Need?



GEORGIA
WATER PLANNING

Energy Forecasting – Estimated Power Generation



Energy Water Demand Forecasting

Thermoelectric Energy Water Demand Forecast

Statewide (MGD)	2020	2030	2040	2050	2060
Withdrawals	383	487	354	360	367
Consumption	235	301	242	247	253

Coosa-North Georgia	2020	2030	2040	2050	2060
Withdrawals - High Demand Scenario	4.29	4.29	6.55	7.21	7.87
Withdrawals - Expected Demand Scenario	4.29	4.29	5.65	6.25	6.85
Consumption - High Demand Scenario	3.78	3.78	5.77	6.34	6.92
Consumption - Expected Demand Scenario	3.78	3.78	4.97	5.50	6.03

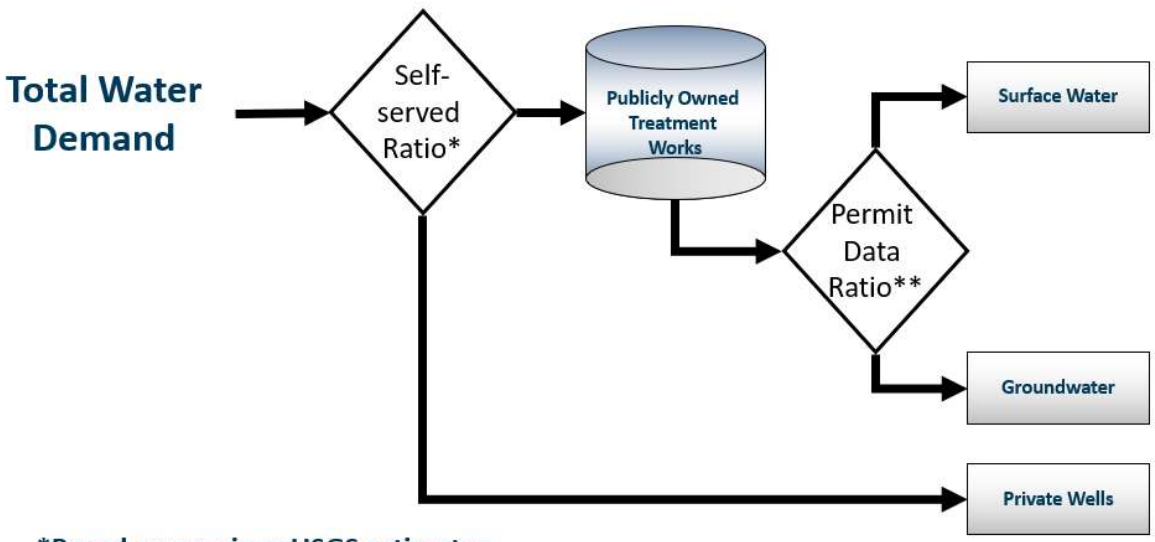
https://waterplanning.georgia.gov/forecasting/energy-water-use

Water Demand Forecasting – Municipal

- Black & Veatch/Jacobs planning contractor team preparing water demand forecasts for this sector
- Municipal Forecasting Stakeholder Group
  - Includes one representative from each Council & the Metro Water District (Brooke Anderson represented Coosa-North Georgia Council)
  - Initial Stakeholder Meeting held on April 16, 2020
    - Reviewed methodology and initial data collection
  - Second Stakeholder Meeting held on June 3, 2020
    - Reviewed draft forecast results
  - Final Stakeholder Meeting held on February 2, 2021
    - Presented revised forecasting results
- Information collected from Industrial forecasting efforts were incorporated into this forecast (municipally-supplied industries)
- Information about county-to-county transfers were incorporated for source modeling.
- Report has been finalized and is posted to website

https://waterplanning.georgia.gov/forecasting/municipal-water-use

Municipal Water Demands



*Based on previous USGS estimates
**Based on existing GA EPD permit data

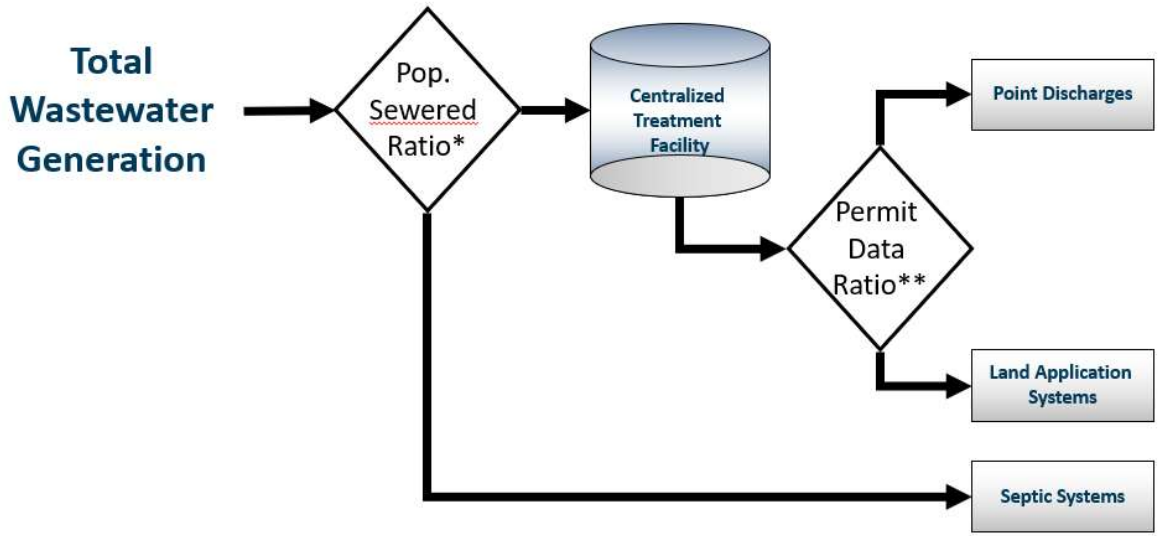
Municipal Water Demands

		Projected Need per Yr per County and Source (AADD-MGD)				
County	Source	2020	2030	2040	2050	2060
Catoosa	Surface Water	6.59	6.89	6.65	6.21	5.67
	Groundwater	-	-	-	-	-
	Self-Supplied	0.25	0.26	0.25	0.23	0.21
Chattooga	Surface Water	2.22	2.23	2.20	2.15	2.12
	Groundwater	1.06	1.06	1.05	1.03	1.01
	Self-Supplied	0.09	0.09	0.09	0.09	0.08
Dade	Surface Water	2.06	2.03	1.96	1.88	1.83
	Groundwater	0.08	0.08	0.08	0.07	0.07
	Self-Supplied	-	-	-	-	-
Dawson	Surface Water	1.85	2.79	3.64	4.60	5.87
	Groundwater	0.21	0.31	0.41	0.52	0.66
	Self-Supplied	0.58	0.49	0.40	0.32	0.24
Fannin	Surface Water	1.86	1.86	1.62	1.35	1.18
	Groundwater	0.09	0.09	0.07	0.06	0.05
	Self-Supplied	0.76	0.76	0.65	0.54	0.47
Floyd	Surface Water	11.35	11.69	11.08	10.22	9.34
	Groundwater	0.84	0.87	0.82	0.76	0.69
	Self-Supplied	0.39	0.39	0.37	0.33	0.30
Gilmer	Surface Water	2.89	3.03	3.09	3.04	2.99
	Groundwater	-	-	-	-	-
	Self-Supplied	1.23	1.26	1.14	1.01	0.92
Gordon	Surface Water	7.88	8.24	8.47	8.60	8.71
	Groundwater	2.07	2.16	2.23	2.26	2.29
	Self-Supplied	0.17	0.18	0.18	0.18	0.18
Habersham	Surface Water	5.39	5.99	6.61	7.07	7.49
	Groundwater	0.82	0.92	1.01	1.08	1.14
	Self-Supplied	0.62	0.59	0.57	0.54	0.51
Lumpkin	Surface Water	1.39	2.05	2.64	3.24	3.98
	Groundwater	0.27	0.39	0.50	0.62	0.76
	Self-Supplied	1.85	1.81	1.76	1.72	1.68

Municipal Water Demands

		Projected Need per Yr per County and Source (AADD-MGD)				
Murray	Surface Water	1.74	1.80	1.85	1.87	1.90
	Groundwater	1.46	1.51	1.55	1.57	1.60
	Self-Supplied	0.75	0.73	0.71	0.69	0.67
Pickens	Surface Water	2.38	2.79	2.92	3.01	3.16
	Groundwater	1.41	1.66	1.74	1.79	1.88
	Self-Supplied	0.40	0.39	0.38	0.37	0.36
Polk	Surface Water	4.14	4.27	4.18	3.97	3.72
	Groundwater	1.77	1.83	1.79	1.70	1.59
	Self-Supplied	0.10	0.10	0.09	0.08	0.07
Towns	Surface Water	1.27	1.39	1.56	1.83	2.21
	Groundwater	0.19	0.20	0.23	0.27	0.32
	Self-Supplied	0.14	0.15	0.17	0.20	0.24
Union	Surface Water	1.48	1.73	1.81	1.89	2.07
	Groundwater	0.46	0.54	0.56	0.59	0.65
	Self-Supplied	0.03	0.03	0.03	0.03	0.04
Walker	Surface Water	1.28	1.28	1.26	1.24	1.23
	Groundwater	5.80	5.78	5.72	5.62	5.59
	Self-Supplied	0.50	0.49	0.48	0.46	0.45
White	Surface Water	1.10	1.33	1.47	1.62	1.81
	Groundwater	0.94	1.13	1.25	1.38	1.54
	Self-Supplied	1.18	1.41	1.55	1.69	1.87
Whitfield	Surface Water	26.69	27.30	27.70	27.69	27.50
	Groundwater	-	-	-	-	-
	Self-Supplied	0.37	0.37	0.37	0.36	0.35

Municipal Wastewater Demands



*Based on 1990 US Census Bureau data
**Based on existing GA EPD permit data

Municipal Wastewater Demands

County	Source	2030	2040	2050	2060
Catoosa County	Point Source	0.01	0.01	0.01	0.01
	LAS	0.00	0.00	0.00	0.00
	Septic	2.97	2.93	2.81	2.63
Chattooga County	Point Source	5.84	5.89	5.88	5.93
	LAS	0.03	0.03	0.03	0.03
	Septic	0.99	0.99	0.99	1.00
Dade County	Point Source	0.48	0.47	0.46	0.46
	LAS	0.00	0.00	0.00	0.00
	Septic	0.80	0.79	0.77	0.77
Dawson County	Point Source	0.00	0.00	0.00	0.00
	LAS	0.84	1.09	1.40	1.84
	Septic	1.78	2.16	2.61	3.22
Fannin County	Point Source	0.40	0.35	0.30	0.26
	LAS	0.00	0.00	0.00	0.00
	Septic	1.36	1.20	1.01	0.90
Floyd County	Point Source	5.91	5.74	5.41	5.07
	LAS	0.00	0.00	0.00	0.00
	Septic	2.83	2.75	2.59	2.43
Gilmer County	Point Source	1.75	1.70	1.63	1.59
	LAS	0.00	0.00	0.00	0.00
	Septic	1.73	1.60	1.45	1.35
Gordon County	Point Source	5.84	6.08	6.25	6.42
	LAS	0.00	0.00	0.00	0.00
	Septic	2.62	2.73	2.80	2.88
Habersham County	Point Source	4.45	4.88	5.31	5.78
	LAS	0.01	0.01	0.02	0.02
	Septic	2.17	2.31	2.45	2.62
Lumpkin County	Point Source	0.88	0.98	1.08	1.20
	LAS	0.02	0.03	0.03	0.03
	Septic	2.03	2.24	2.47	2.75

County	Source	2030	2040	2050	2060
Murray County	Point Source	1.76	1.82	1.87	1.92
	LAS	0.00	0.00	0.00	0.00
	Septic	2.09	2.17	2.22	2.29
Pickens County	Point Source	0.87	0.92	0.95	1.01
	LAS	0.02	0.02	0.02	0.02
	Septic	2.03	2.13	2.22	2.34
Polk County	Point Source	3.51	3.46	3.34	3.19
	LAS	0.00	0.00	0.00	0.00
	Septic	2.00	1.96	1.85	1.72
Towns County	Point Source	0.42	0.48	0.57	0.70
	LAS	0.00	0.00	0.00	0.00
	Septic	0.73	0.83	0.99	1.21
Union County	Point Source	0.43	0.46	0.49	0.55
	LAS	0.00	0.00	0.00	0.00
	Septic	1.62	1.73	1.85	2.08
Walker County	Point Source	4.17	4.23	4.26	4.35
	LAS	0.00	0.00	0.00	0.00
	Septic	3.46	3.51	3.54	3.61
White County	Point Source	0.65	0.73	0.81	0.92
	LAS	0.03	0.04	0.04	0.05
	Septic	2.03	2.28	2.54	2.88
Whitfield County	Point Source	0.18	0.18	0.18	0.18
	LAS	11.18	11.42	11.51	11.54
	Septic	3.86	3.96	4.00	4.02
Total	**Point Source**	**37.55**	**38.37**	**38.82**	**39.54**
	LAS	**12.14**	**12.64**	**13.05**	**13.53**
	Septic	**37.08**	**38.26**	**39.17**	**40.68**

Metro Water District Update

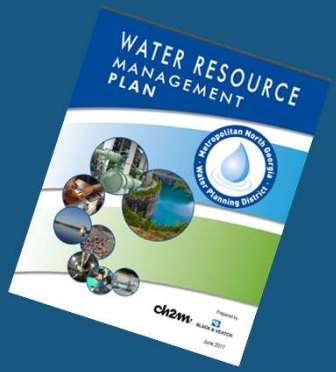
Coosa-North Georgia
Regional Water Planning Council

GEORGIA
WATER PLANNING

Metro Water District Update

- Danny Johnson

2022 Plan Update Schedule



	Sep-20	Dec-20	Mar-21	Jun-21	Sep-21	Dec-21	Mar-22	Jun-22	Sep-22	Dec-22
Data Collection/Resource Forecasting										
Action Items Review and Update										
Appendix A - River Basin Profiles										
Appendix B - Facility Planning										
Stormwater Forecasting										
Supporting Efforts										
Localized Demands Drought Response Options Menu Watershed Resilience										
Full Draft Plan for Review										
Public Comment										
EPD/Board Approval										

Stormwater Forecasting Update

- Planning-level forecast based on total runoff volume at a watershed-scale
  - Support stormwater/ watershed planning
  - Compliment existing (non-district) regulatory requirements
- Timeline
  - July 20, 2021 - Stormwater Watershed TCC
  - Early November – Distribute County Level Fact Sheets
  - Late Early November – Stormwater Watershed TCC

Concepts for Potential Action Item Updates - Efficient Technologies and Water Waste

Codes for New / Renovated Buildings to require More Efficient Technologies

- Plumbing Fixtures
- Landscape Irrigation System Design
- Water-Efficient Appliances
- HVAC Cooling Towers

Adjust Premise Plumbing Sizing Requirements to Account for Efficiency

Update Water Waste Model Ordinance

Concepts for Potential Action Item Updates- Beyond Mandatory Codes

Rebate Programs to promote leading efficient technologies

- Smart Irrigation Controller rebate program
- Smart Leak Detector rebate program

Promoting whole home water efficiency

- HERS H2O Whole House Water Efficiency Rating

79,300 live views!

Nearly 2,000 pageviews since

441 questions from students

1,247 pop quiz responses

Lunch

Council Member Meet and Greet

GEORGIA
WATER PLANNING

Forestry Update

Coosa-North Georgia
Regional Water Planning Council

GEORGIA
WATER PLANNING

Forest and Water Connection: Maximizing Privately Owned Forests as a Solution to Safe and Abundant Water Supply

- Robert Farris, Georgia Forestry Foundation

GEORGIA FORESTRY
FOUNDATION

Coosa North Georgia Water Council

November 3, 2021

OUR MISSION

to ensure the long-term sustainability of Georgia's forests

by reconnecting youth and adults to the land

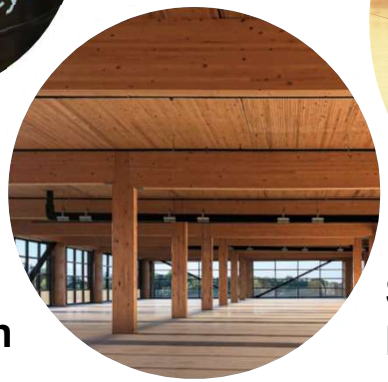
and by demonstrating working forests' environmental, educational, and economic importance to the state.

WORKING FORESTS

AN AT-SCALE SOLUTION TO OUR GREATEST CHALLENGES

Recyclability, Circularity

Carbon Reduction



Sustainable Buildings

Clean Water

Rural Jobs

GEORGIA FORESTRY FOUNDATION

FORESTRY STATE IN THE NATION

GEORGIA FORESTRY AT A GLANCE

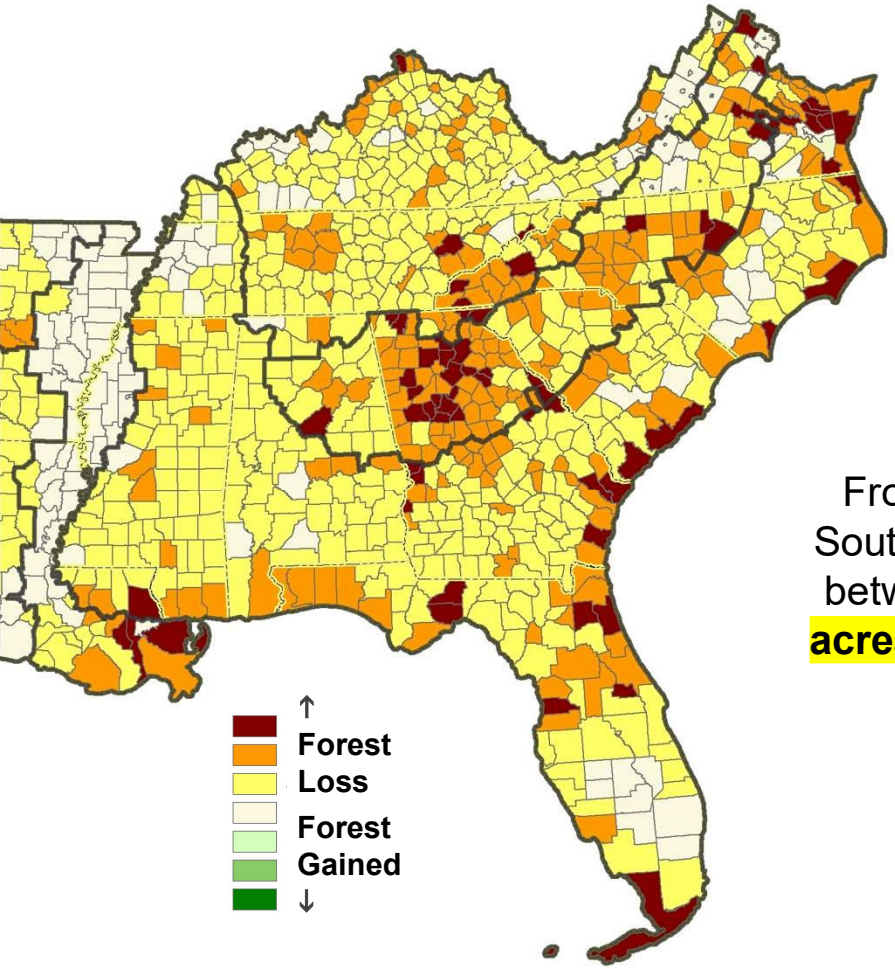
#1 IN PRIVATELY-OWNED TIMBERLAND
with 22 million acres of commercially-available timber.[1]

#1 IN ANNUAL HARVEST VOLUME
while growth exceeds removals by 48%.[2]

#1 EXPORTER OF FOREST PRODUCTS
leading the nation in the export of 21 commodities with an estimated trade value of $3.9 billion.[3]

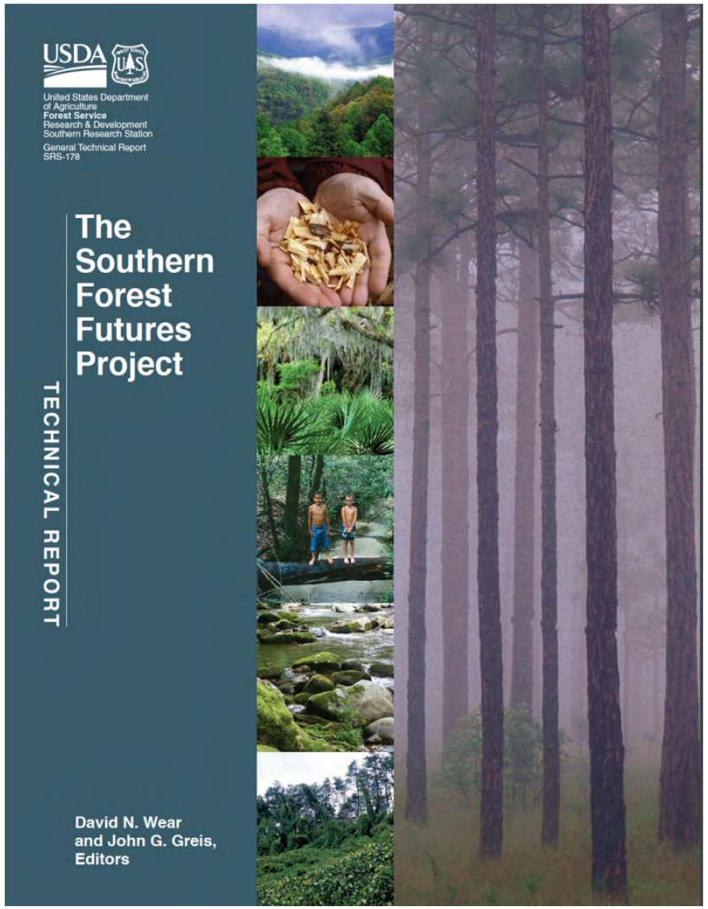
#1 IN WOOD HARVESTED FOR PINE PRODUCTION & PINE PULPWOOD PRODUCTION IN THE U.S. SOUTH[4]

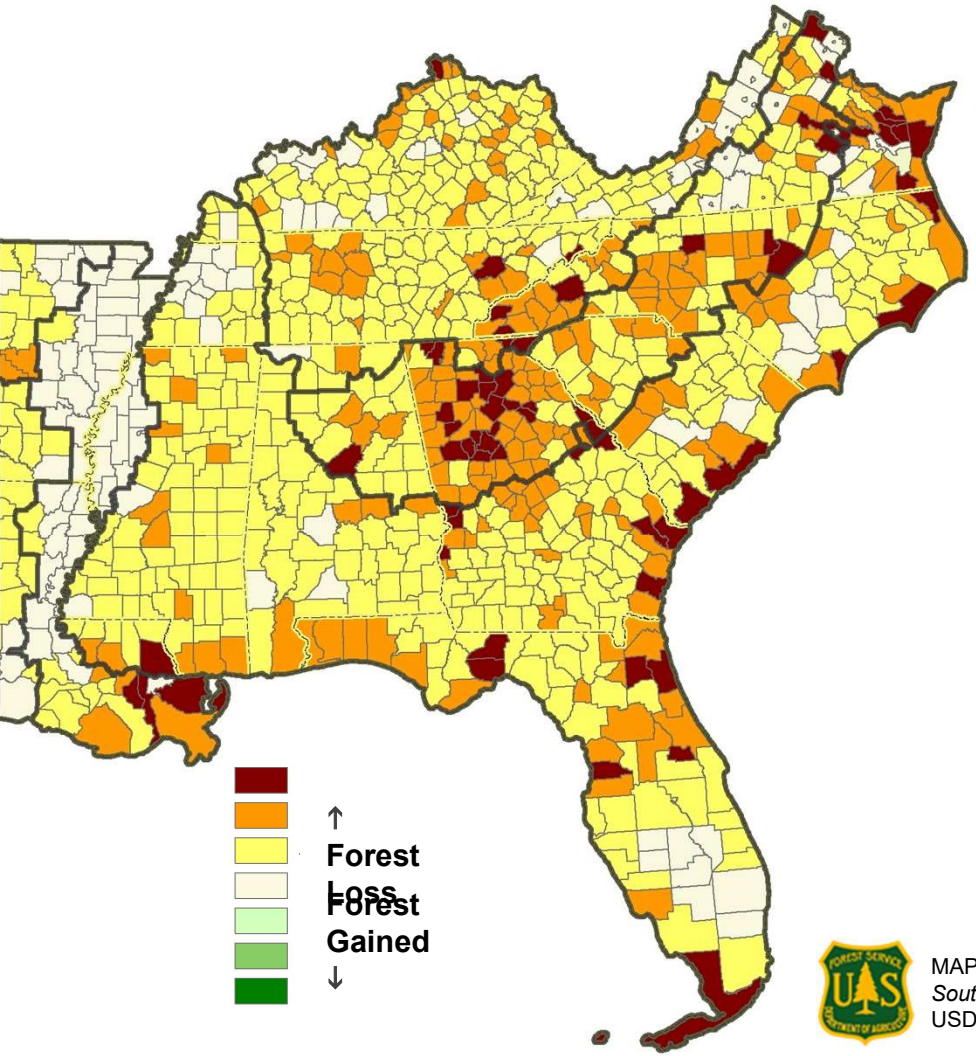
#1 IN SEEDLING PRODUCTION FOR REFORESTATION[5]



“

From 1997 to 2060, the South is forecasted to lose between **11 to 23 million acres of forests**, nearly all to urban uses.





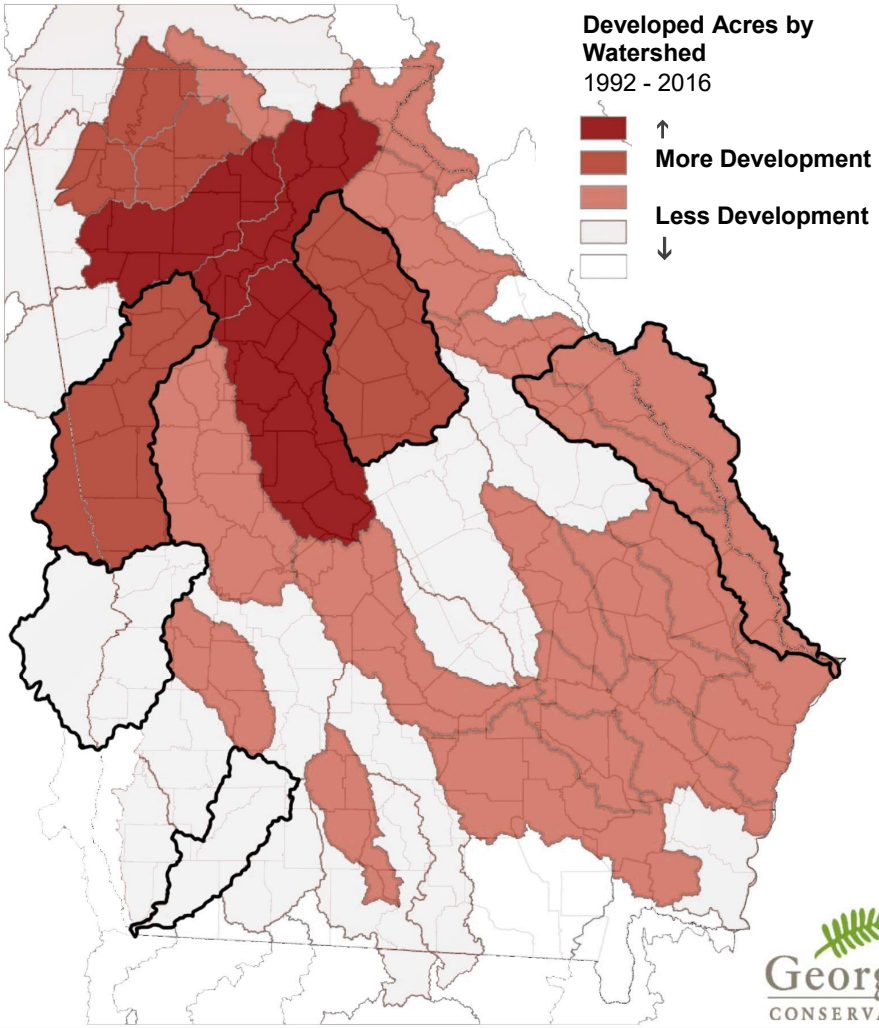
WHAT IS AT STAKE

↑ **Urban Sprawl + ↓ Timber Prices = ↑ Forest Loss**

Loss of forests means a loss of critical ecosystem services:

- Water Quality and Quantity
- Air Quality and Carbon Sequestration
- Wildlife Habitat
- Recreation and Aesthetics
- Soil Formation and Stability
- Pollination
- Human Health and Well Being

MAP SOURCE
Southern Forest Futures Report,
USDA Forest Service, Southern Research Station



WHAT IS AT STAKE

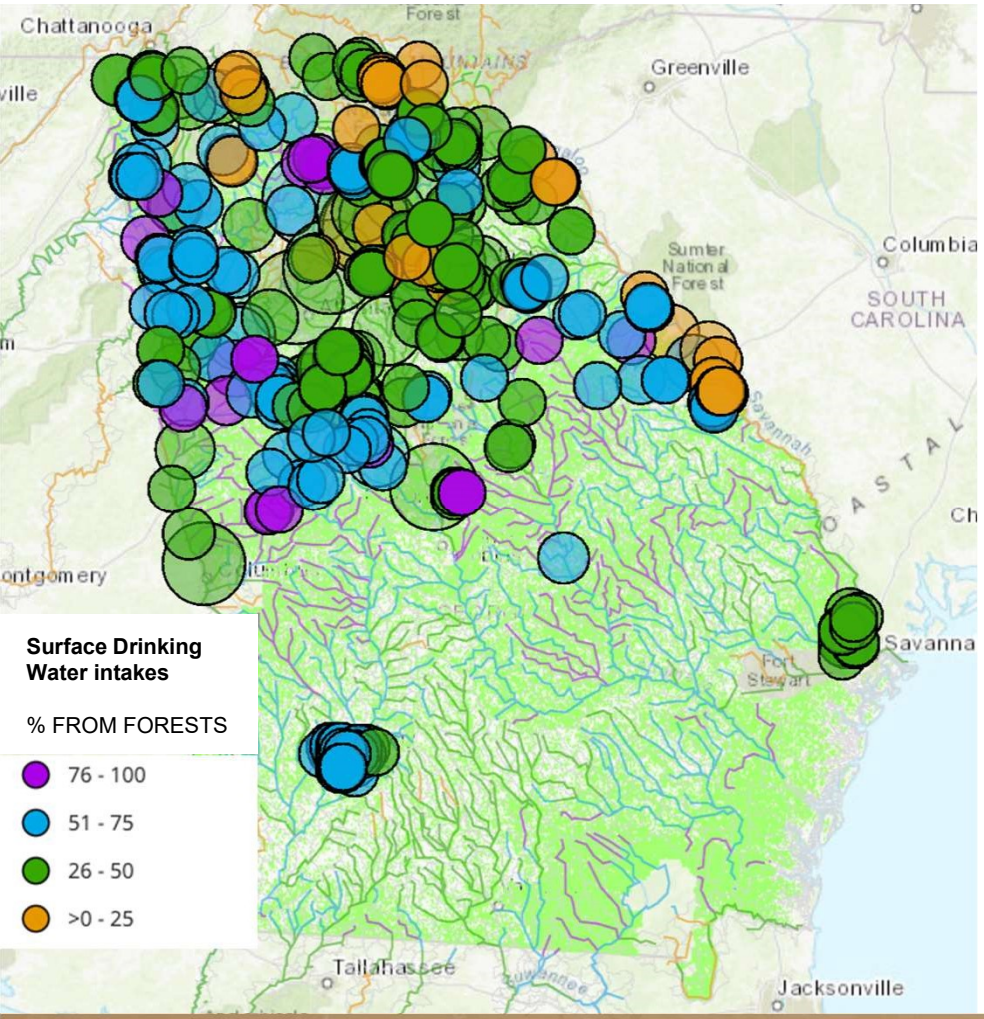
↓ **Water Quality = ↑ Water Treatment Costs**

Loss of clean water services from forests can lead to a drinking water emergency

- → Loss of natural filtration of precipitation and storm runoff
- → Increase in sediment and contaminants
- → Loss of stream flow moderation and increase in flooding impacts
- → Increased soil erosion

Georgia CONSERVANCY

MAP SOURCE
Georgia: Now and Forever
Georgia Conservancy



WHAT IS AT STAKE

↑ **Forest Loss = ↓ Water Quality**

Privately-owned forests serve as the greatest at-scale solution for water quality and quantity in Georgia

- 404 surface drinking water intakes
- 5,910,180 people
- 146 communities

MAP SOURCE
Benefits of State and Private Forests for the South
USDA Forest Service, Southern Research Station

67,900 miles of perennial
and intermittent streams!

65% OF GEORGIA WATERSHEDS

FLOW THROUGH PRIVATELY-OWNED, WORKING FORESTS

SOURCE: GEORGIA FORESTRY COMMISSION

5.9 MILLION GEORGIANS

57% of the state's total population!

DEPEND ON WATER FROM FORESTED WATERSHEDS

SOURCE: USDA FOREST SERVICE, SOUTHERN RESEARCH STATION

$500,000 - $6 BILLION IN SAVINGS

OBSERVED ACROSS SEVEN U.S. CITIES BY MAINTAINING HIGH QUALITY SOURCE WATER AND AVOIDING WATER TREATMENT COSTS THROUGH NATURAL INFRASTRUCTURE INVESTMENTS

SOURCE: WORLD RESOURCES INSTITUTE

GEORGIA FORESTRY
FOUNDATION

FOREST & WATER INITIATIVE

Maximizing Water Quality Benefits Through a Voluntary, Landowner, Market Driven System

COLLABORATORS

U.S. Endowment for Forestry and Communities

GEORGIA FORESTRY FOUNDATION

KEEPING FORESTS

DOVETAIL PARTNERS

GEORGIA FORESTRY COMMISSION

UNIVERSITY OF GEORGIA
Warnell School of Forestry & Natural Resources

SUSTAINABLE FORESTRY INITIATIVE GEORGIA
SFI-01121

Georgia STATE COMMITTEE

SOUTHEASTERN PARTNERSHIP FOR FORESTS&WATER

PROJECT OBJECTIVE

Establish a land conservation project within a selected watershed to provide a proactive, non-regulatory approach to protecting water quality in concert with forest landowners.

GEORGIA FORESTRY FOUNDATION

What is the role of a payment ecosystem services market?

Direct payments to landowners for the natural infrastructure they provide

WATER PROVIDERS

Diversifying your toolbox for source water protection at-scale

- ✓ Long-Term Conservation Easements
- ✓ Direct Land Purchases
- ⚡ Ecosystem Services Market

LANDOWNERS

Increasing the value of your forestland investment

- ✓ Timber Harvests
- ✓ Hunting Leases
- ⚡ Ecosystem Services Market

FORESTS & WATER
CONNECTION INITIATIVE

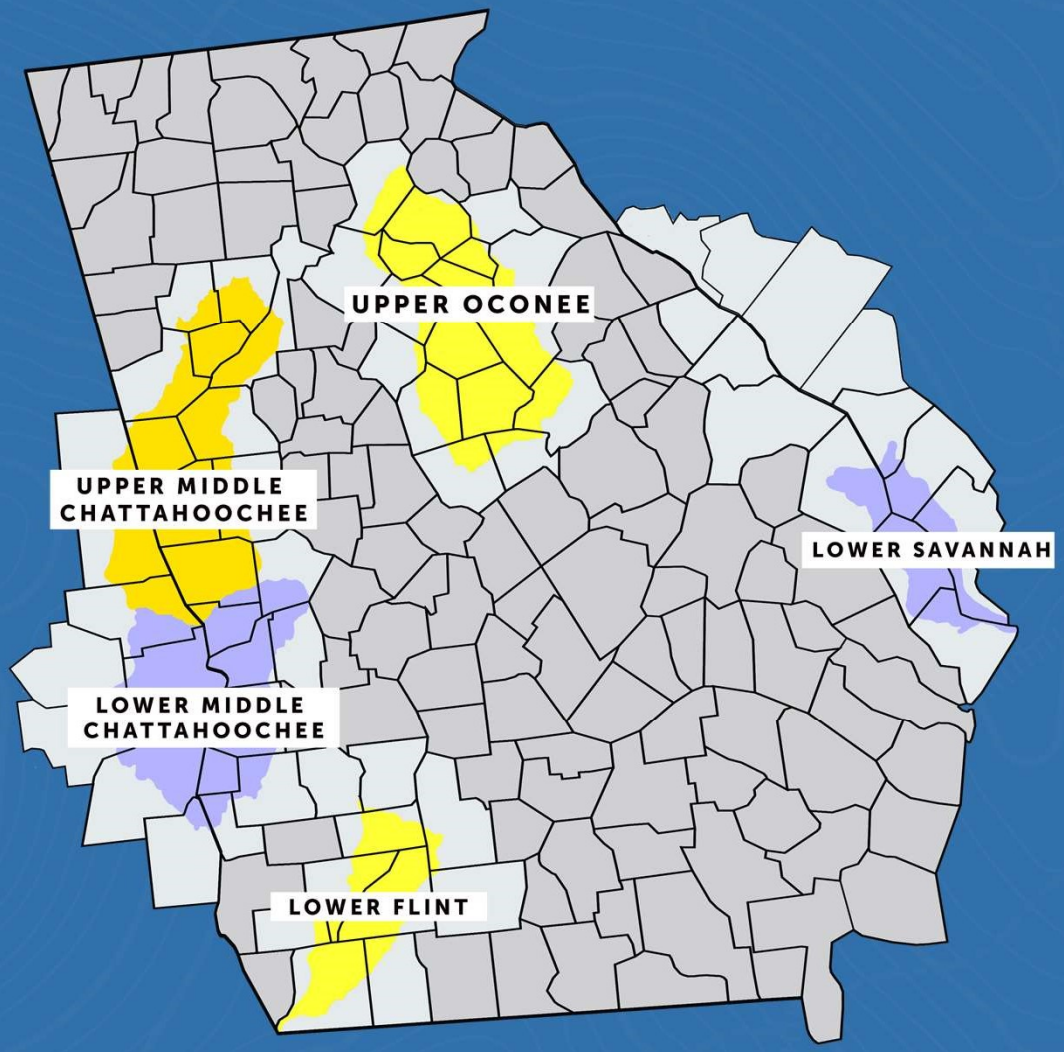
FORESTS HAVE ALWAYS CLEANED OUR WATER.

So, why does this project matter?

DIRECT INVESTMENTS IN FORESTS AS NATURAL INFRASTRUCTURE MAKES SENSE.

- ✓ Keep Forests as Forests
- ✓ Maintain High Quality Source Water
- ✓ Reduce Water Treatment Costs

FORESTS & WATER
CONNECTION INITIATIVE



PRIORITY WATERSHEDS

- Threat to forest
- Threat to water
- Existing grassroots networks established
- Perceived greatest chance for success

FORESTS & WATER
CONNECTION INITIATIVE

INITIATIVE OBJECTIVE

Identifying ecosystem service market structures that work for Georgia forest owners and water users.

1. IDENTIFY PREFERRED CONSERVATION MECHANISMS
2. GATHER FEEDBACK FROM LANDOWNERS AND PROVIDERS
3. DEVELOP PROGRAM AND ENGAGEMENT RECOMMENDATIONS

FORESTS & WATER
CONNECTION INITIATIVE

INITIAL PROJECT REACH

347 TOTAL FORUM REGISTRANTS

LOWER SAVANNAH
- → 37 Landowners
- → 24 Water Professionals

UPPER OCONEE
- → 100 Landowners
- → 33 Water Professionals

MIDDLE CHATTAHOOCHEE
- → 53 Landowners
- → 38 Water Professionals

LOWER FLINT
- → 36 Landowners
- → 26 Water Professionals

FORESTS & WATER
CONNECTION INITIATIVE

Forum Findings

- **Landowners Top Concerns:**
  - Overcomplicated Agreements
  - Restrictions on harvest or land use
  - Dealing with the government

Water Professional Top Concerns:

- Identifying and / or convincing stakeholders of value

Dovetail Key Findings

Collaborate and share understanding
- Establish and leverage a strong collaboative team
- Establish support through regulatory structures and funding

Plan and invest capacity
- Do not underestimate resources needed to establish program
- Establish a long-term, sustainable funding strategy

Follow the science
- Leverage the scientific foundation that exsists
- Additional research will strengthen the program

Geek out
- Include team members that can access and use technology availble to conduct modeling, mapping, and analysis

Know your watershed
- Understand your source water area
- Understand the threats to your landscape

Know your neighbor
- Sucess relies on the people;including willing landowners
- Understand interests of PES program and sellers

KEEPING FORESTS

NC STATE UNIVERSITY College of Natural Resources

Department of Forestry & Environmental Resources

Quantifying forest benefits for water quantity and quality in the southern United States

- **Phase I:** Modeling to quantify forest water relationships
- **Phase II:** Estimate economic value
- **Phase III:** Share results

Partnership Progress

Keeping Forests: How the River Flows Podcasts / NC State Grant
- Middle Chattahoochee & Lower Savannah River

Savannah Clean River Fund: Mini-documentary / Alec / CPI & RPI

Southeastern Partnership for Forests & Water

Upper Oconee River Partnership

Outreach: GMFLA
- GA Legislature Environmental Policy Academy
- Georgia Association of Water Professionals
- Georgia Rural Water Association
- Institute for Environmental Leadership (IGEL)
- FORESTSANDWATER.org domain

HOW CAN WE HELP YOU WITH YOUR SOURCE WATER PROTECTION PLANS?

1. **Give us your feedback!**

2. **Become a Collaborator!**
   Join our growing list of collaborators, add your logo to our site at www.forestsandwater.org, and help us spread the word

CONTACT US

Robert Farris
Georgia Forestry Foundation
Farris@gffgrow.org

FORESTS & WATER
CONNECTION INITIATIVE

GEORGIA FORESTRY
FOUNDATION

Discuss Council Vison, Goals, and MOA

Coosa-North Georgia
Regional Water Planning Council

GEORGIA
WATER PLANNING

Discuss Council Vision, Goals and MOA

- Vision
- Goals
- MOA (homework)

Coosa-North Georgia Region

Council's Vision:

Enhance the potential and quality of life for all communities through sustainable use of water resources in the region and state with partnerships among a broad spectrum of stakeholders.

Coosa-North Georgia Region

Council's Goals

1. Plan for appropriate levels of water storage, water sources, and long-term supply to meet anticipated need for local communities.
2. Minimize adverse effects to local communities and adjacent regions, and, when possible, enhance, natural systems.
3. Ensure that management practices support economic development and optimize existing water and wastewater infrastructure.
4. Promote alternative technologies that conserve, return, and recycle water; protect water quality; and ensure adequate capacity for water storage within the Coosa-North Georgia region.
5. Promote properly managed wastewater discharges.
6. Educate stakeholders in the region on the importance of water resources, including water conservation, efficiency, and pollution prevention.
7. Identify practices that reduce nonpoint source pollution and control stormwater to protect and enhance water quality and ecosystems in lakes and streams, particularly those in Priority Watersheds and listed streams.

Public Comments

Coosa-North Georgia
Regional Water Planning Council

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Please limit comments to 3 minutes total

Council encourages written submission of comments as well

Next Steps

Coosa-North Georgia
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Next Steps

- Next Council Meeting
  - February 23, 2022, Location TBD
- Adjourn

Thank You

Coosa-North Georgia

WATER

WASTEWATER

STORMWATER

https://waterplanning.georgia.gov/water-planning-regions/coosa-north-georgia-water-planning-region

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