Welcome to this Public Hearing

GEORGIA
DEPARTMENT OF NATURAL RESOURCES
ENVIRONMENTAL PROTECTION DIVISION

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- Please **keep your microphones muted** except when you are speaking. This will help us minimize background noise and feedback.
- Please take a moment to **open the Participants list and rename yourself** to show your full name and affiliation, so we have that for our records. You should see a “Rename” option next to your name (or click on “More” to find this option).
- **This meeting is being recorded** to document any questions or comments received during our time together.
- To make a comment or ask a question, please either:
  - Indicate you would like to make a comment using the Chat feature.
  - In the “Reactions” menu, select the “raise hand” option. The host will call on you to ask your question or make your comment.

2022 Triennial Review Opening Hearing

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3/22/2022

GEORGIA
DEPARTMENT OF NATURAL RESOURCES

ENVIRONMENTAL PROTECTION DIVISION

Clean Water Act

- "Federal Water Pollution Control Act" also known as Clean Water Act or CWA.
- Objective
  - Restore and maintain the chemical, physical, and biological integrity of the waters of the United States
  - Achieved through water quality standards that define the use of the waterbody and the criteria necessary to protect the use
- Goal: fishable/swimmable

Water Quality Standards

- Established to
  - Protect public health and welfare
  - Enhance the quality of the water
  - Provide water quality for the protection and propagation of fish, shellfish, and wildlife and for recreation in and on the water
- Need to be
  - Scientifically defensible
  - Protective of existing aquatic life and designated use
  - Compatible with existing guidance
- Consist of
  - Designated Uses
  - Water Quality Criteria to protect those uses
  - Antidegradation Policy

Designated Uses

- GA R&R Rule 391-3-6-.03 (4) types of designated uses:
  - Drinking Water Supplies
  - Recreation
  - Fishing, Propagation of Fish, Shellfish, Game and Other Aquatic Life (“Fishing”)
  - Wild River
  - Scenic River
  - Coastal Fishing
- All of Georgia’s designated uses meet the CWA fishable/swimmable goal

Water Quality Criteria

- Georgia's water quality criteria are listed in:
  - 391-3-6-.03(5) – General criteria for all waters
    - Narrative: free from visible sewage/debris, scum, objectionable color/odor, turbidity due to human causes, toxic substances in toxic amounts
    - Numeric: magnitude, duration and frequency limits for priority pollutants
  - 391-3-6-.03(6) – Specific Use criteria for
    - Dissolved oxygen
    - pH
    - Temperature
    - Bacteria

Antidegradation policy

- Protection of existing uses 40 CFR 131.12(a)(1)
- 3 tiers of water quality 391-3-6-.03(2)(b) and 40 CFR 131.12
  - Tier 1: Protection of existing designated uses (applies to all waters)
  - Tier 2: Protection of waters of a higher quality than their designated use (All waters of GA are Tier 2 or higher)
    - Antidegradation analysis required
  - Tier 3: Protection of Outstanding Natural Resource Waters (ONRW)
    - Except for temporary changes, water quality cannot be lowered in these waters

Current status of Water Quality Standards

- Latest EPA approved version
  - 2016 Triennial Review
  - Approved January 20, 2021
- 2019 Triennial Review
  - Adopted by DNR Board on January 28, 2022, Certified by SOS February 18, 2022, and Attorney General on March 18, 2022
  - EPD is currently assembling the package to send to EPA
  - Not usable for clean water act purposes until approved by EPA
- 2022 Triennial Review
  - Now open

Triennial Review

- 40 CFR 131.20 requires states to review and revise water quality standards from time to time, but at least once every three years
- 40 CFR 131.20 (b) requires states to hold one or more public hearings for the purpose of reviewing and revising water quality standards
- Updates to water quality standards may be needed if there is:
  - Change in water quality conditions
  - Change in water body uses
  - New scientific information

Items Being Considered for 2022 Triennial Review

Based on EPA recommendations

- 2015 EPA Human Health Ambient Water Quality Criteria Updates
- 2016 EPA Selenium Criteria
- 2018 EPA Aluminum Aquatic Life Criteria
- 2019 Recreational Water Quality Criteria or Swimming Advisories for Cyanotoxins
- 2021 Ambient Water Quality Criteria to Address Nutrient Pollution in Lakes and Reservoirs

Based on public comments

- Designated use change to recreation for nominated waterbodies

Based on internal recommendations

- Site specific criteria for Lakes Burton, Rabun, and Tugaloo
- City of Atlanta WER and BLM
- Updates for organization and clarification

Human Health Criteria

- EPA finalized updates to the ambient water quality criteria for the protection of human health in 2015.
- Reflected the latest scientific information and implementation of existing EPA policies found in Methodology for Deriving Ambient Water Quality Criteria for the Protection of Human Health (2000).
- Revised criteria for 94 chemicals.

$$AWQC = RfD \cdot RSC \cdot \left(\frac{BW}{DI + \sum_{i=2}^{4} (FI_i \cdot BAF_i)} \right)$$

Exposure

RSC = Relative Source Contribution (%, to account for other sources of exposure).
BW = Human Body Weight (70 kg for average adult).
DI = Drinking Water Intake (2 L/day for average adult).
FI = Fish Intake (kg/day).

Bioaccumulation

BAF = Bioaccumulation Factor (L/kg).

Human Health Criteria

- Changes to Calculation Assumptions:
  - Updated toxicology - Reference doses (RfDs) and cancer potency slopes
  - Uses Bio Accumulation Factors (BAF) instead of Bio Concentration Factors (BCF)
  - Updated default values
    - Adult body weight increased from 70 kg to 80 kg
    - Adult drinking water consumption rate increased from 2.0 L/person/day to 2.4 L/person/day
    - Adult fish consumption rate increased from 17.5 g/person/day to 22 g/person/day
  - Uses Relative Source Contributions (RSC)
- EPA used a deterministic approach
- EPD will continue work to develop appropriate criteria using Georgia specific data and a probabilistic approach.

Selenium

- EPA updated freshwater selenium criteria in 2016
- Selenium Criteria 391-3-6-.03(5)(e)(ii)(9)

Criteria Elements	Current Criteria	2016 Recommended Criteria			
	Water Column	Water Column	Intermittent Exposure	Egg/Ovary (dry Weight)	Fish (dry Weight)
Magnitude	5.0 µg/L	Still Water 1.5 µg/L Flowing Water 3.1 µg/L	$WQC\,\text{int} = \frac{WQC30-day - Cbkgrnd(1 - F\,\text{int})}{F\text{int}}$	15.1 mg/kg	Whole Body 8.5 mg/kg Muscle 11.3 mg/kg
Duration		30 days	Number of days/month with an elevated concentration		Instantaneous
Frequency	Not more than once in three years	Not more than once in three years	Not more than once in three years	Not to be exceeded	Not to be exceeded

Selenium

Criteria for Intermittent Exposure

- Addresses infrequent discharges of Se
- Prevents bioaccumulation in the ecosystem
- Prevents potential chronic effects by limiting cumulative exposure

$$WQC_{\text{int}} = \frac{WQC_{30-day} - C_{bkgrnd}(1 - F_{\text{int}})}{F_{\text{int}}}$$

Where:

WQC_{int} = Average intermittent exposure Se criteria

$WQC_{30\text{-}day}$ = Chronic Se criteria

1.5 mg/L for lakes/ponds

3.1 mg/L for rivers/streams

C_{bkgrnd} = Average background Se concentration

f_{int} = Fraction of 30-day period with $f_{int} \geq 0.0333$, which corresponds to 1 day

Selenium

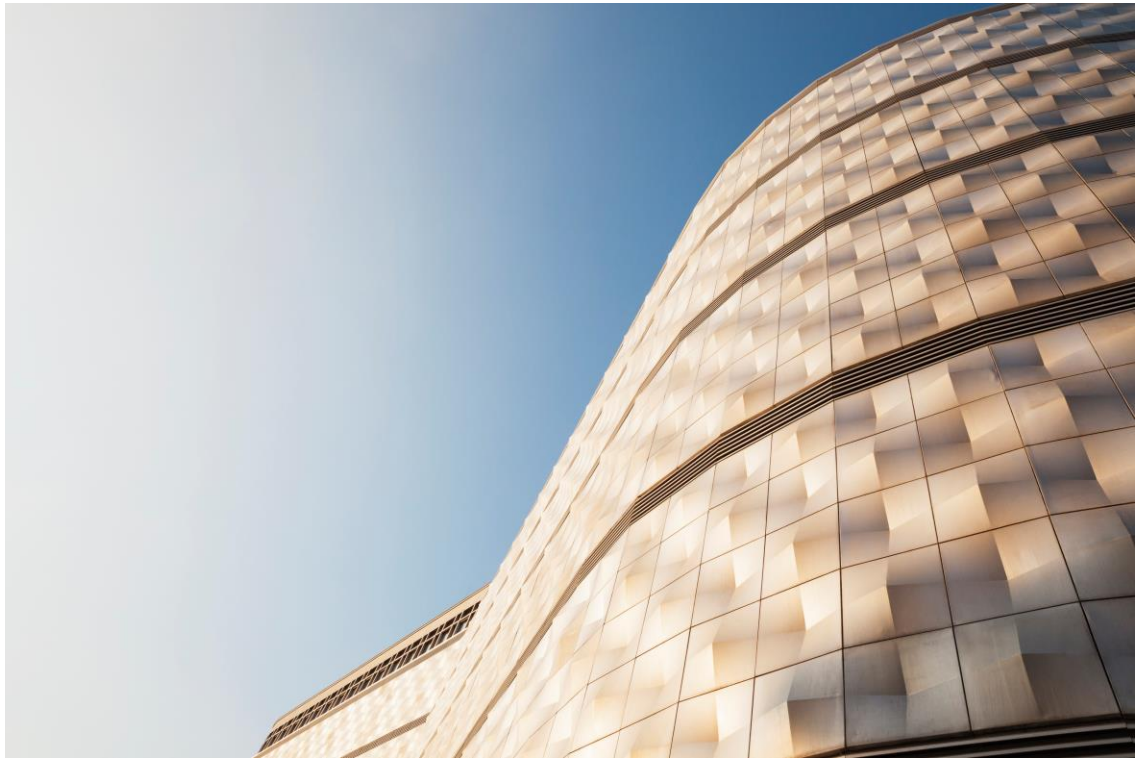
Bkgrnd Conc, C_{bkgrnd} (µg/L)	Fraction of Time, f_{int} in a 30-day period					
	0.03333 (1 day)	0.05 (1.5 days)	0.1 (3 days)	0.2 (6 days)	0.5 (15 days)	1 (30 days)
	Lotic Intermittent Criterion Element, WQC_{int} (µg/L)					
0	93	62	31	15.5	6.2	3.1
1	64	43	22	11.5	5.2	3.1
2	35	24	13	7.5	4.2	3.1
2.5	20.5	14.5	8.5	5.5	3.7	3.1
3.1	3.1	3.1	3.1	3.1	3.1	3.1
	Lentic Intermittent Criterion Element, WQC_{int} (µg/L)					
0	45	30	15	7.5	3	1.5
0.5	30.5	20.5	10.5	5.5	2.5	1.5
1	16	11	6	3.5	2	1.5
1.25	8.8	6.3	3.8	2.5	1.8	1.5
1.5	1.5	1.5	1.5	1.5	1.5	1.5

Selenium

- GA DNR Wildlife Resources Division collects fish for tissue analysis related to the development of annual fish consumption guidelines
- EPD will likely adopt the recommended fish tissue criteria, water column criteria, and water column intermittent criteria
- EPD will likely use EPA's recommendation that fish tissue data supersede water column data when the system is in a steady state.
- In the absence of fish tissue data, water column data will be used for assessment purposes

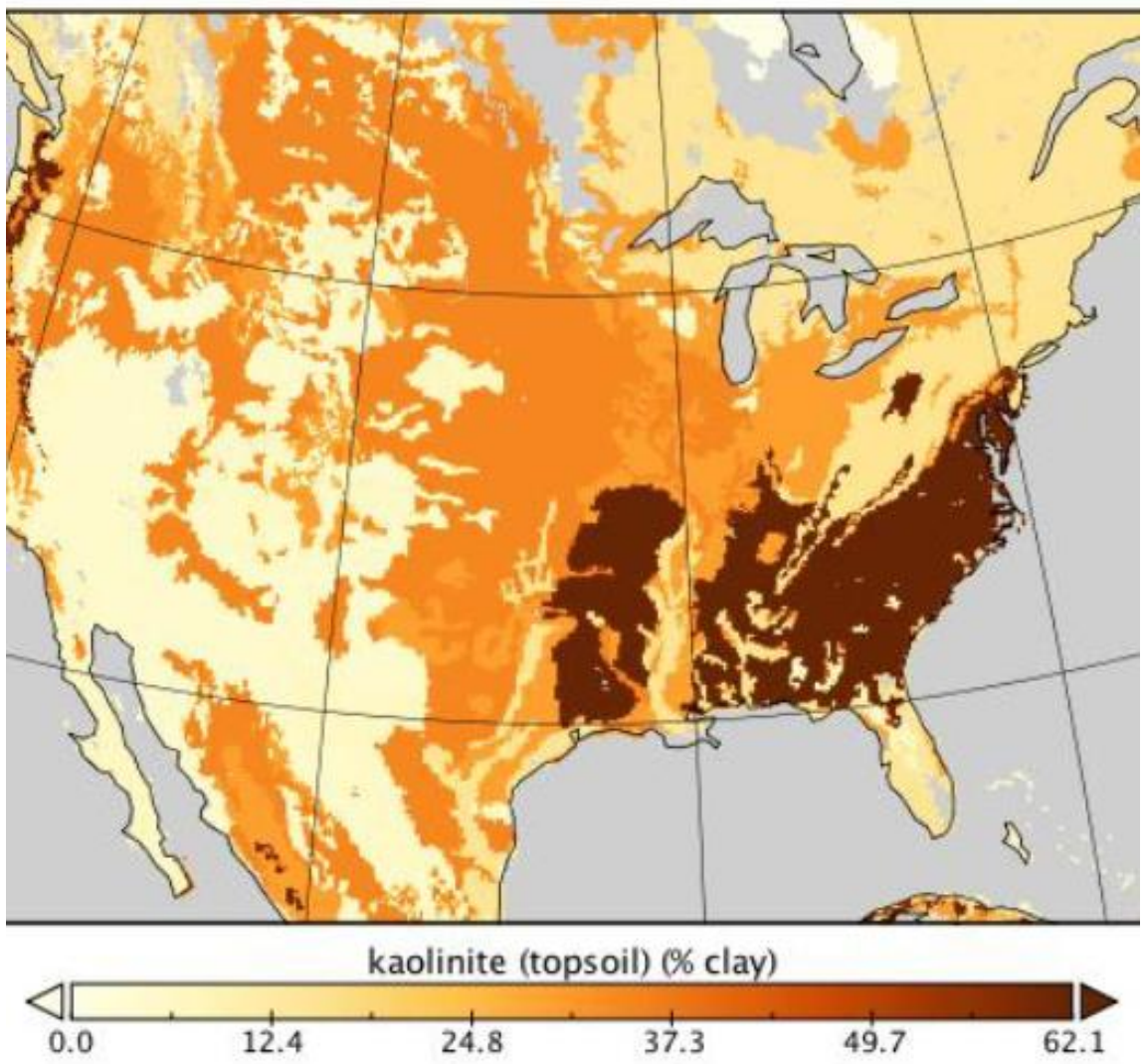
Aluminum

- EPA recommended Aluminum Aquatic Life Criteria in 2018.
- Recommended Criteria are based on a Criteria Calculator dependent on site specific water hardness, pH and Dissolved Organic Carbon (DOC).
    - EPD has started collecting aluminum and DOC data in order to evaluate the recommended criteria calculator



Aluminum

- Georgia has a lot of naturally occurring aluminum.
  - Kaolin is a hydrated aluminum silcate.
- EPD would like to evaluate aluminum data to look for trends based on ecoregion
- Working with monitoring staff on a research project to identify if high levels of aluminum are due to a point source or due to underlying geology
  - Alum is an aluminum salt used as a flocculant by water treatment plants
  - Compare aluminum data upstream and downstream of treatment plants to determine natural levels of aluminum



Cyanobacteria and Cyanotoxins

- 2019 EPA cyanotoxin magnitude recommendation:

Microcystins	Cylindrospermopsin
8 µg/L	15 µg/L

- States have the option to adopt cyanotoxin criteria or to issue swim advisories if magnitude is exceeded.
- EPD is working with lake managers to develop a sampling protocol to be implemented following visual observation of blue-green algae events.
  - Meetings were held in August 2019 and April 2021
  - EPD is planning to hold a follow up meeting later this year
- Swim advisories will be issued when cyanotoxins are present above the EPA recommended magnitude

Cyanobacteria and Cyanotoxins

- Developed an informational flyer and HABs Story Map.
- Further coordination and meetings need to happen to ensure involvement from all parties and to establish acceptable procedures for sampling and possible beach closures.
- Need to determine how to incorporate swimming advisories into our rules and/or listing methodology.

Harmful Algal Blooms may be present.
"When in doubt, stay out."

GA EPD is sharing information on Harmful Algal Blooms (HAB) to protect you and your pets. If you see a bloom, please use caution.

An HAB is caused naturally by blue-green algae (cyanobacteria) collecting in open water that can become harmful. People and animals that touch, swallow or breath-in toxins from this water can become sick, sometimes suddenly. Not all blooms are harmful and they can be short-lived.

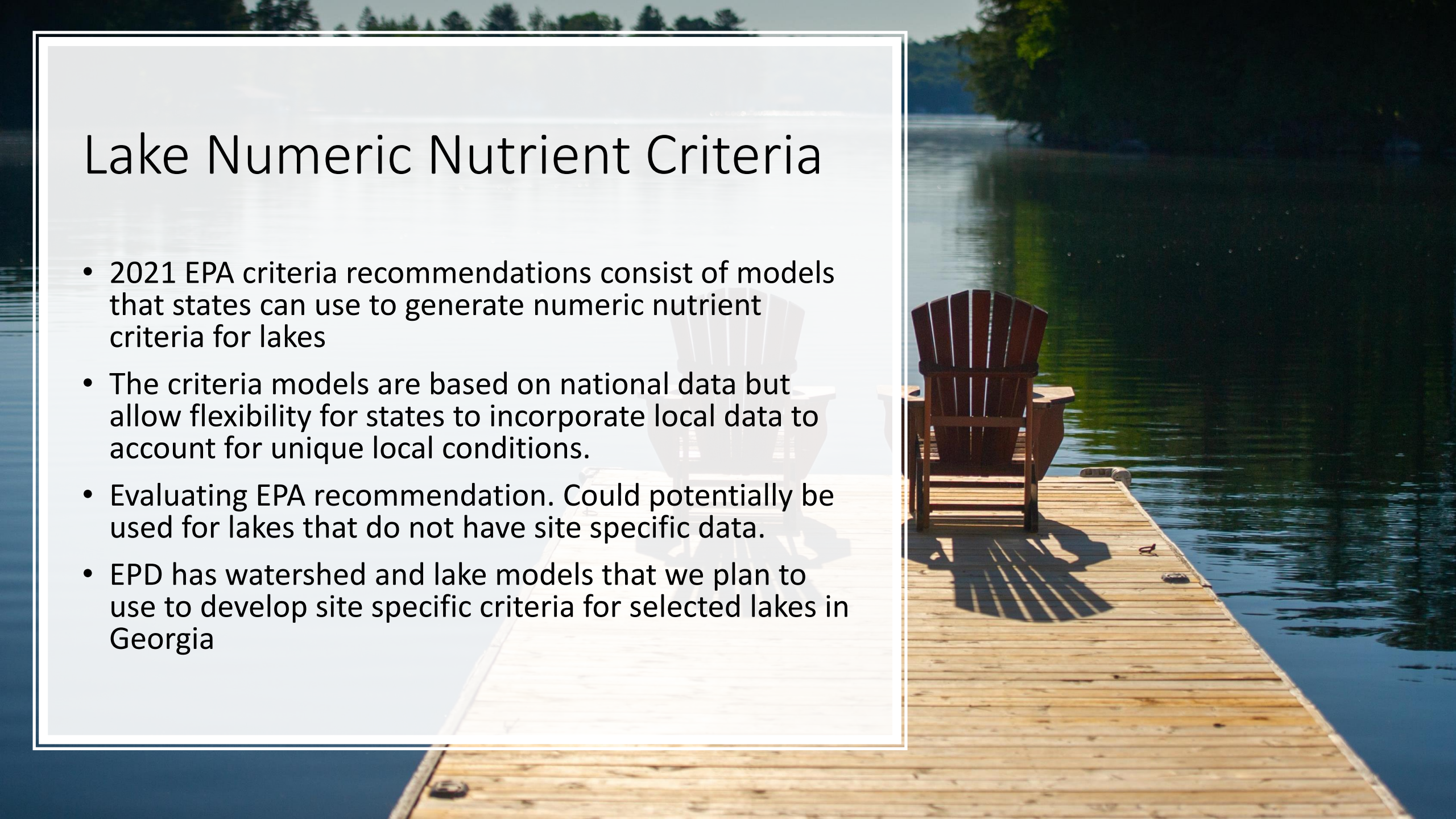
How To Identify A Potential HAB

What Should You Do If You See A Possible Harmful Algal Bloom?

- Keep children and pets away from the bloom. . Do not swim or wade through algal scum. Avoid playing fetch with pets in the water near the bloom.
- If you or your animals come into contact with an algal bloom, don't swallow or inhale the water and wash with fresh water and soap afterward. Wash animals' fur thoroughly before allowing them to lick themselves.
- Do not drink, cook, or shower with untreated water from lakes, ponds, or streams.
- Do not drive your boat, water ski, or jet ski through a bloom.
- Do not fish from lakes, ponds, or rivers where floating algal scum is found.
- Avoid exposure to irrigation water drawn from untreated sources.
- If you or an animal begin to have a rash, vomiting, diarrhea, respiratory or nervous system problems, call or visit a healthcare provider soon and be sure to mention the possibility of contacting an HAB.
- Report any possible HAB to nearby rangers, or workers in charge of the lake.

Lake Numeric Nutrient Criteria

- 2021 EPA criteria recommendations consist of models that states can use to generate numeric nutrient criteria for lakes
- The criteria models are based on national data but allow flexibility for states to incorporate local data to account for unique local conditions.
- Evaluating EPA recommendation. Could potentially be used for lakes that do not have site specific data.
- EPD has watershed and lake models that we plan to use to develop site specific criteria for selected lakes in Georgia

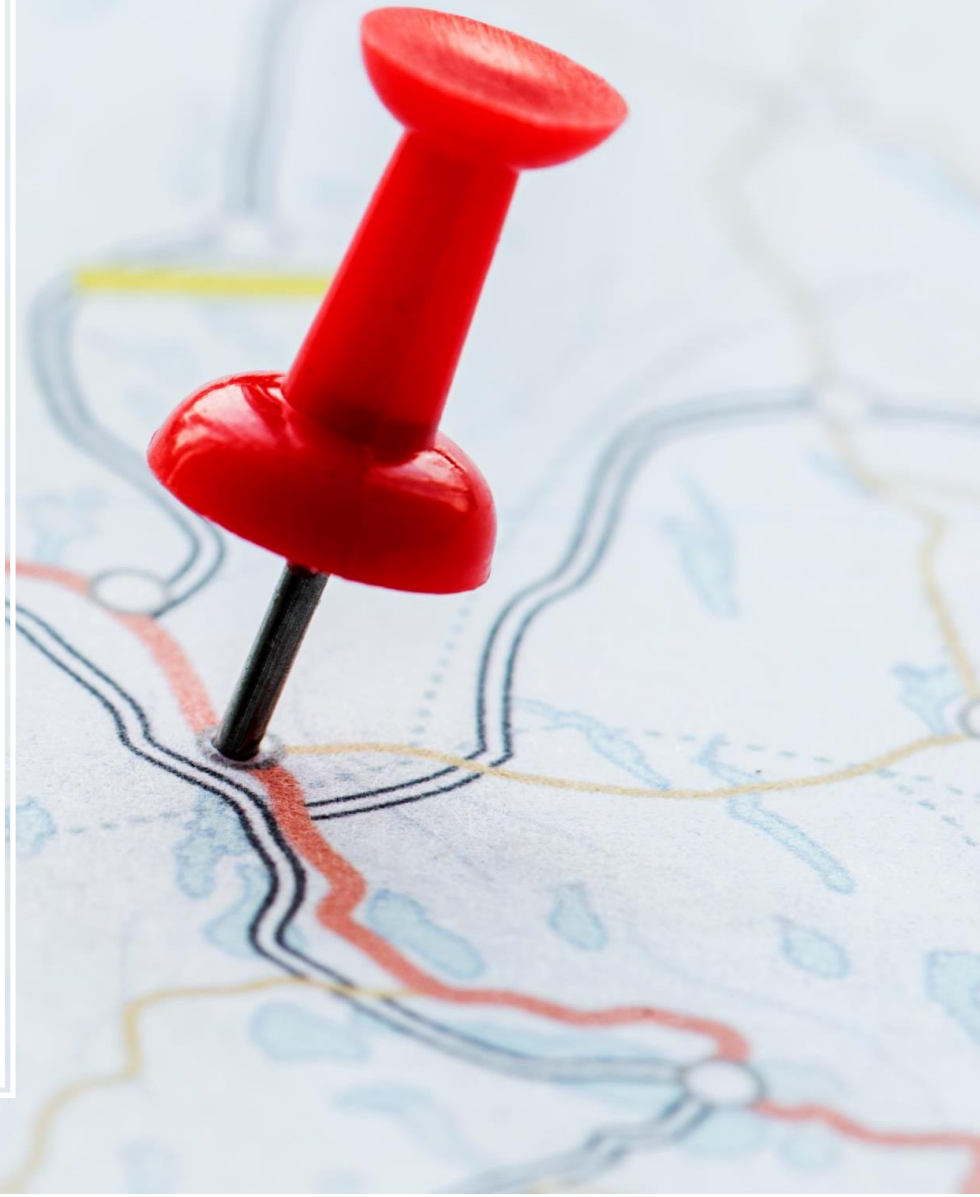


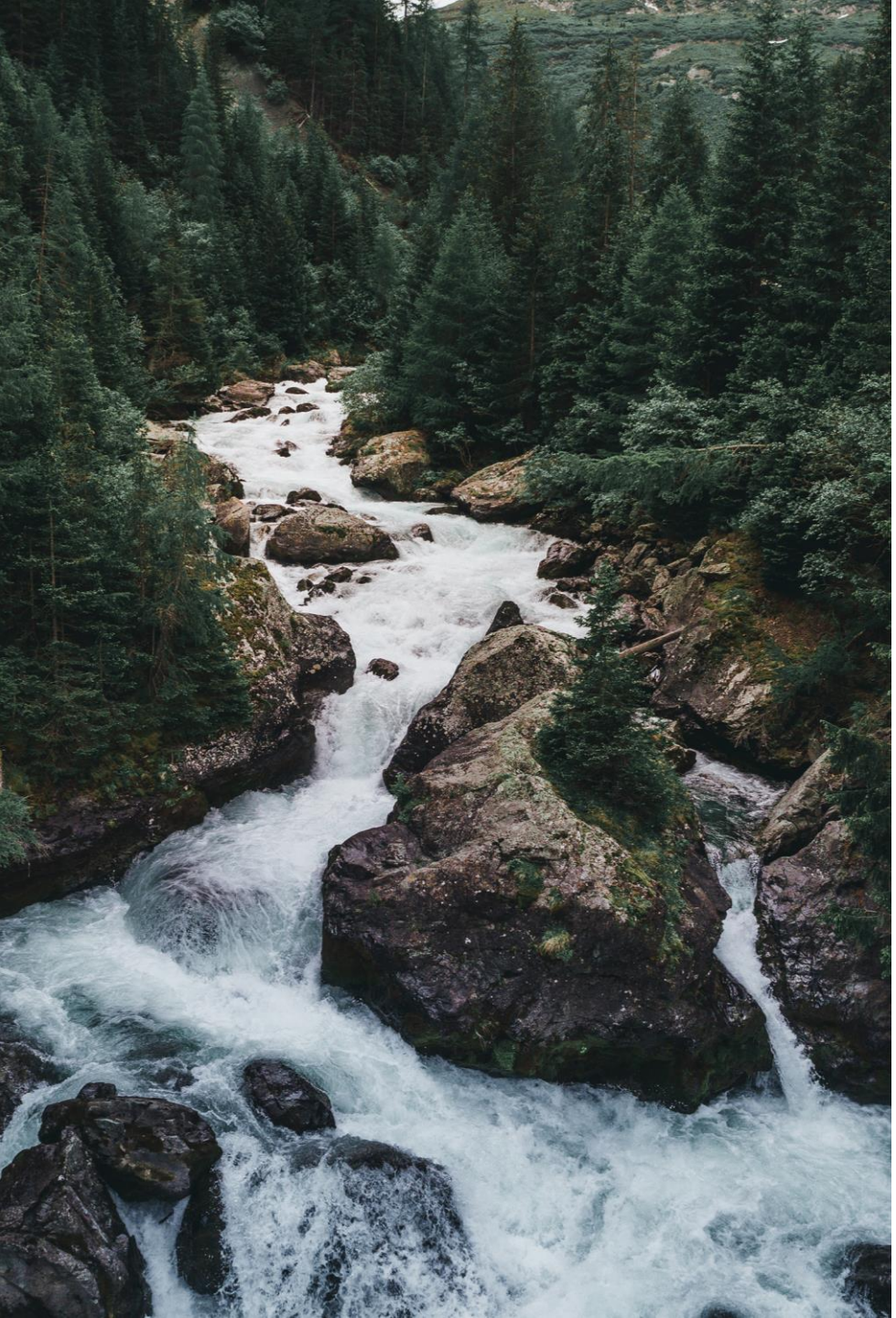
Lake Criteria

- Use watershed and lake models to develop site specific criteria for:
  - Lake Rabun
  - Lake Tugaloo
  - Lake Burton

Designated Use Changes

- Riverkeeper groups and other organizations nominated many waterbodies for a designated use change to recreation in the 2019 Triennial Review
- Some waterbodies that were not able to be thoroughly evaluated during the last triennial review will continue to be evaluated during the 2022 Triennial Review
- Guidance for Recommending a Change in Designated Use finalized on March 16, 2022





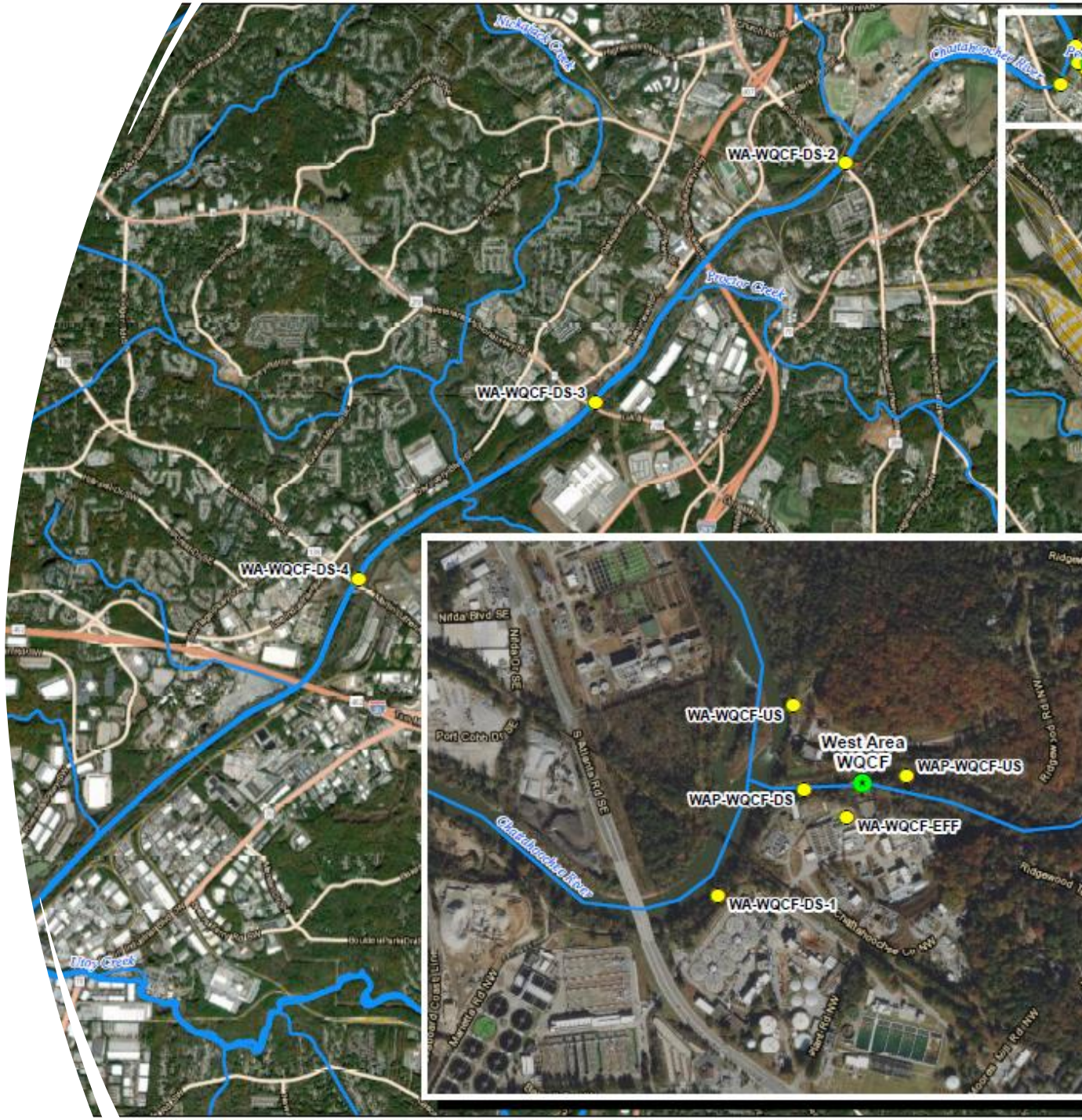
Waterbodies Under Consideration for Designated Use Change to Recreation

- Altamaha River - Savannah Hwy. (Georgia Hwy. 23/ U.S. Hwy. 25) to Doctors Creek
- Broad River - Scull Shoal Creek to Athens Hwy. (Georgia Hwy. 72)
- Chattahoochee River - Sweetwater Creek to Pea Creek
- Chattahoochee River - North Highland Dam to Bull Creek
- Satilla River - Jamestown Landing to Alabaha River
- Withlacoochee River – Georgia Hwy. 37 to Tiger Creek
- Etowah River
- South River - Panola Shoals to Honey Creek (Henry County)

EPD anticipates additional nominations. All initial nomination forms received by September 22, 2022 will be considered for the current Triennial Review.

City of Atlanta Water Effects Ratio and Biotic Ligand Model

- City of Atlanta is conducting WER and BLM studies
- Studies will be used to develop site specific copper and zinc criteria for:
  - Tanyard Creek
    - CSO discharge to Peachtree Creek
  - Unnamed Tributary to Proctor Creek
    - North Ave. CSO discharge to Proctor Creek
  - Intrenchment Creek
    - Custer Ave. CSO discharge to South River
  - Chattahoochee River
    - Peachtree Creek to Proctor Creek
  - Clear Creek
    - CSO discharge to Peachtree Creek



Comments, Contacts, and WQS Webpage

- If you would like to submit official comments for any of the materials in this presentation, please send them in an email to:

  epd.comments@dnr.ga.gov with the subject of 2022 Triennial Review

- Questions regarding Water Quality Standards and the Triennial Review Process can be sent to Gillian Gilbert-Wason at:

  Gillian.Wason@dnr.ga.gov

- The EPD webpage dedicated to Water Quality Standards can be found at: https://epd.georgia.gov/watershed-protection-branch/georgia-water-quality-standards