

# Middle Chattahoochee Council Meeting

November 15, 2023



**GEORGIA  
WATER PLANNING**

[waterplanning.georgia.gov](https://waterplanning.georgia.gov)

# Agenda

## Objectives:

1. Discuss water planning with plan commenters (USFWS & Dr. Rosemond)
2. Hear GAEPD & GA-FIT updates
3. Review fact sheet
4. Plan future council meetings

- |          |   |
|----------|---|
| 9:45 am  | Registration  |
| 10:00 am | Welcome, Agenda Review – <i>Meagan Szydzik, GWPPC</i>   |
| 10:10 am | Chair’s Report – <i>Chairman Davis</i>  |
| 10:20 am | GAEPD Report – <i>Kelli-Ann Schrage, GAEPD</i>  |
| 10:30 am | Discussion with Plan Commenters: <ul style="list-style-type: none"><li>• Peter Maholland, US Fish &amp; Wildlife Service</li><li>• Amy Rosemond, UGA Ecology &amp; River Basin Center</li></ul> |
| 11:20 am | Fact Sheet Review – <i>Meagan Szydzik, GWPPC</i>  |
| 11:35 am | GA-FIT Report – <i>Kristin Rowles, GWPPC</i>  |
| 11:50 pm | Future Meeting Topics   |
| 12:00 pm | Adjourn   |



# Introductions

## STEVE DAVIS

Columbus Water Works

### Council Chair for:

Middle Chattahoochee

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## KELLI-ANN SCHRAGE

Georgia EPD

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Black & Veatch

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## JASON HOWARD

Black & Veatch

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## KRISTIN ROWLES

GWPPC

## MARK MASTERS

GWPPC

## MEAGAN SZYDZIK

GWPPC

## CLETE BARTON

Georgia EPD

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### Regional Water Planning Lead:

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# Middle Chattahoochee Council Members

Name	City	County
Hannah V. Anderson	Fort Gaines	Clay
John M. Asbell	LaGrange	Troup
Victoria Barrett	Richland	Stewart
Laura Lee Bernstein	Columbus	Muscogee
Patrick Bowie	LaGrange	Troup
Jimmy Bradley	Cuthbert	Randolph
Barbie Crockett	Centralhatchee	Heard
Steve Davis, Chair	Columbus	Muscogee
Philip Eidson	Tallapoosa	Haralson
Tony Ellis	Tallapoosa	Haralson
James Emery	LaGrange	Troup
Gardiner Garrard	Columbus	Muscogee
Dan Gilbert	Columbus	Muscogee
Joseph Griffith	Buchanan	Haralson
Tim Grizzard	Franklin	Heard
Jimmie L. Hayes	Morris	Quitman
Senator Jason Anavitarte (Ex-Officio)		

Name	City	County
Kevin Hayes	Franklin	Heard
Bill Heath	Bremant	Haralson
Harry Lange, Vice Chair	Cataula	Harris
Carvel Lewis	Georgetown	Quitman
Adolph McLendon	Richland	Stewart
George E. Moon III	West Point	Harris
Mac Moye	Lumpkin	Stewart
Denney Rogers	Ephesus	Heard
Kenneth M. Van Horn	Cusseta	Chattahoochee
Jason Weeks	Georgetown	Quitman
Don Watson (Alternate)	LaGrange	Troup
Matt Windom	Bowdon	Carroll
Robert York	Tallapoosa	Haralson
Representative Randy Nix (Ex-Officio)		



# Chair's Report

Steve Davis, *Chair*





# GAEPD Report

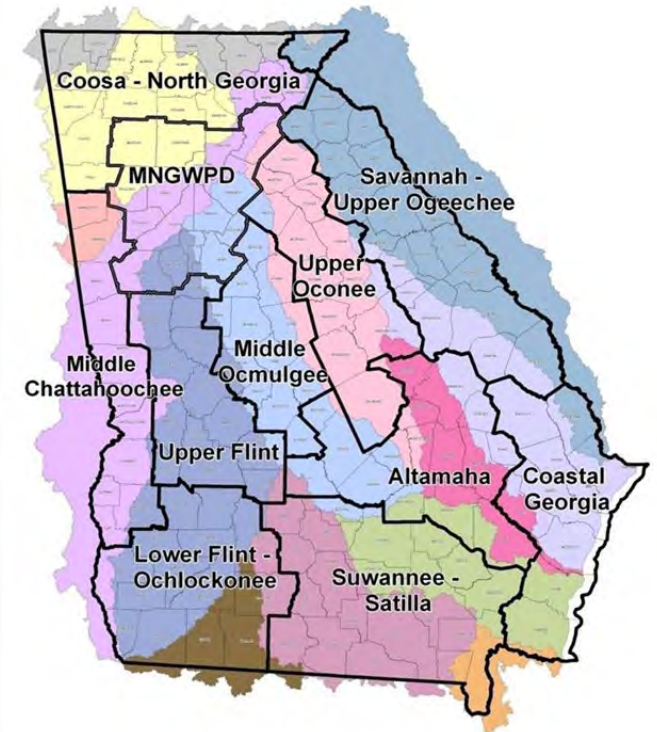
Kelli-Ann Schrage, *GAEPD*





# FY24 Seed Grant Application Period

- Applications received through Oct. 31, 2023
- No applications received in this region
- Next funding cycle will be announced in July 2024

A screenshot of a web application for the Georgia Department of Natural Resources, Environmental Protection Division. The page title is "City of Happy | Trash Free Waters Education". It displays the "RWP Seed Grant Application" form. The form has two main sections: "Application Section 1: Project Description" and "Application Section 2: Budget". Both sections show a "Complete" status and an "Edit" button. A green "Submit" button is visible at the top right of the form area. The page also includes a breadcrumb trail: "Regional Water Planning Seed Grant > City of Happy | Trash Free Waters Education".

# EPD Updates: construction/stormwater

- EPD's issuance of the construction stormwater general permits was challenged in July
  - <https://epd.georgia.gov/watershed-protection-branch/stormwater>
  - Construction sites continue to be covered under the 2018 general permits, which remain in effect during the duration of the legal challenge
- Last week, EPD released a draft Guidance for Requests to Disturb 50 Acres or More under the NPDES Construction Stormwater Permits
  - No more than 50 acres of disturbance is allowed at any one time unless the permittee has received prior written authorization from the appropriate EPD District Office
  - The draft guidance outlines the review criteria and specifies design components expected for such requests
  - Virtual meeting will be held on December 7 and comments are welcome by December 15



# EPD Updates: public drinking water systems

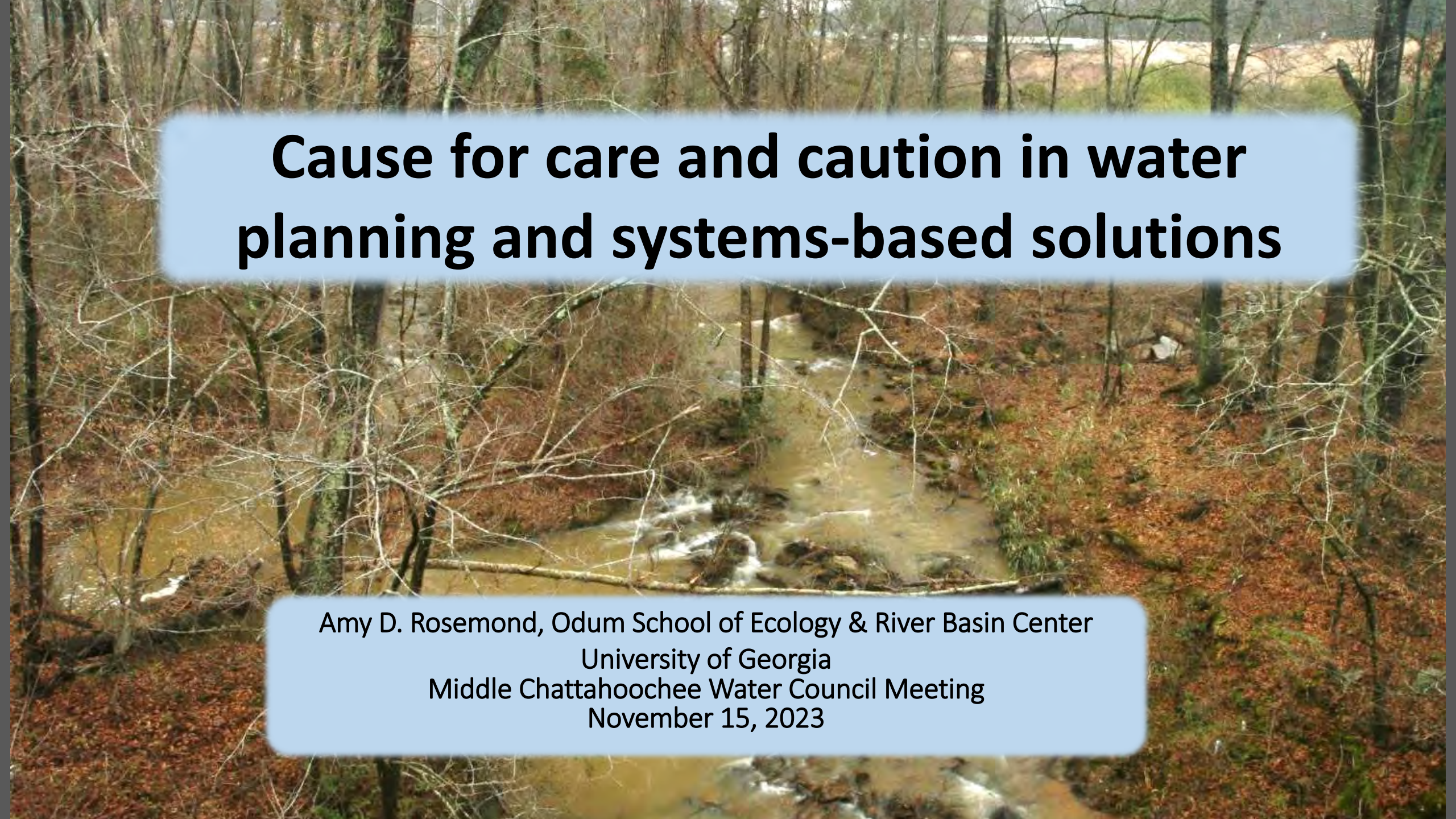
- Public drinking water systems: lead service line inventories (due Oct. 2024)
  - EPD & GEFA implementing an online system to accept & track these submissions
  - Training sessions are being held to support systems with implementation
  - <https://epd.georgia.gov/watershed-protection-branch/drinking-water>
- New Drinking Water Operator Classification
  - Operator Class III G was created by Georgia Board of Examiners for Certification of Water & Wastewater Treatment Plant Operators and Laboratory Analysts
  - Applies to operators of groundwater systems serving a population of 1,000 – 9,999
  - Updates to drinking water rules are proposed (comment period ended on Nov. 9) to incorporate this new classification

# Presentation by Dr. Amy Rosemond

*UGA Ecology & River Basin Center*





A photograph of a forest stream with a small waterfall, surrounded by trees and fallen leaves. The water is flowing over rocks, creating white rapids. The surrounding forest is dense with trees, some of which are bare, and the ground is covered in fallen brown leaves.

# **Cause for care and caution in water planning and systems-based solutions**

Amy D. Rosemond, Odum School of Ecology & River Basin Center  
University of Georgia  
Middle Chattahoochee Water Council Meeting  
November 15, 2023

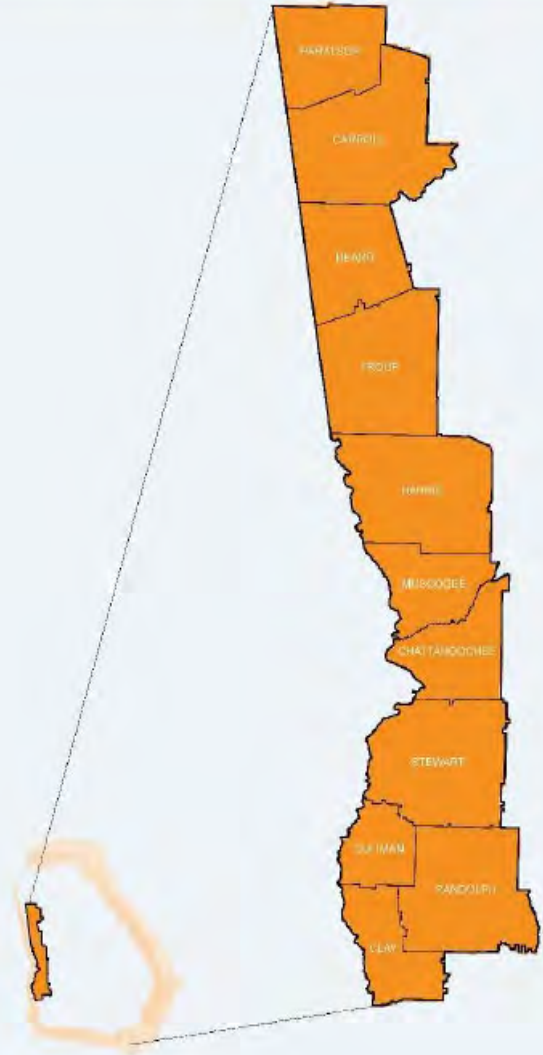




### Vision Statement

*Our vision is that our descendants have safe, clean, abundant, and sustainable water in the Middle Chattahoochee Region through cooperation, education, scientific research, best available data, conservation, and stewardship.*

## Middle Chattahoochee Water Planning Region





# Points brought up in my comments\*:

- Consider appointment process of council members so that interests of all people, and river ecology/long-term health are represented. (I say this with humility and recognize the service involved)
- More care/caution needed to have safe, clean, abundant water. Current degraded water quality in the state (61% rivers, 41% of lakes impaired).
- More monitoring and planning for extreme events (not whether they will happen, but when they will happen) is needed for long-term sustainability.

\*May 2023 to GA DNR regarding revision of MC Regional Water Plan

# Points for consideration

## **More care/caution**

1. Consider current conditions (miles of impaired streams)
2. Consider temperature effects on
  - Assimilative capacity
  - Food web base of rivers (+ nutrient pollution)
  - Algal blooms in lakes (+ nutrient pollution)

## **More monitoring and collaboration?**

3. Monitor/prepare for extreme events (drought, temp?)
4. Systems approach that focuses on food/water/energy & land/water
  - Are there other groups or people to involve in the water council?
  - Natural infrastructure can be used to address nutrient and thermal pollution



# More care/caution

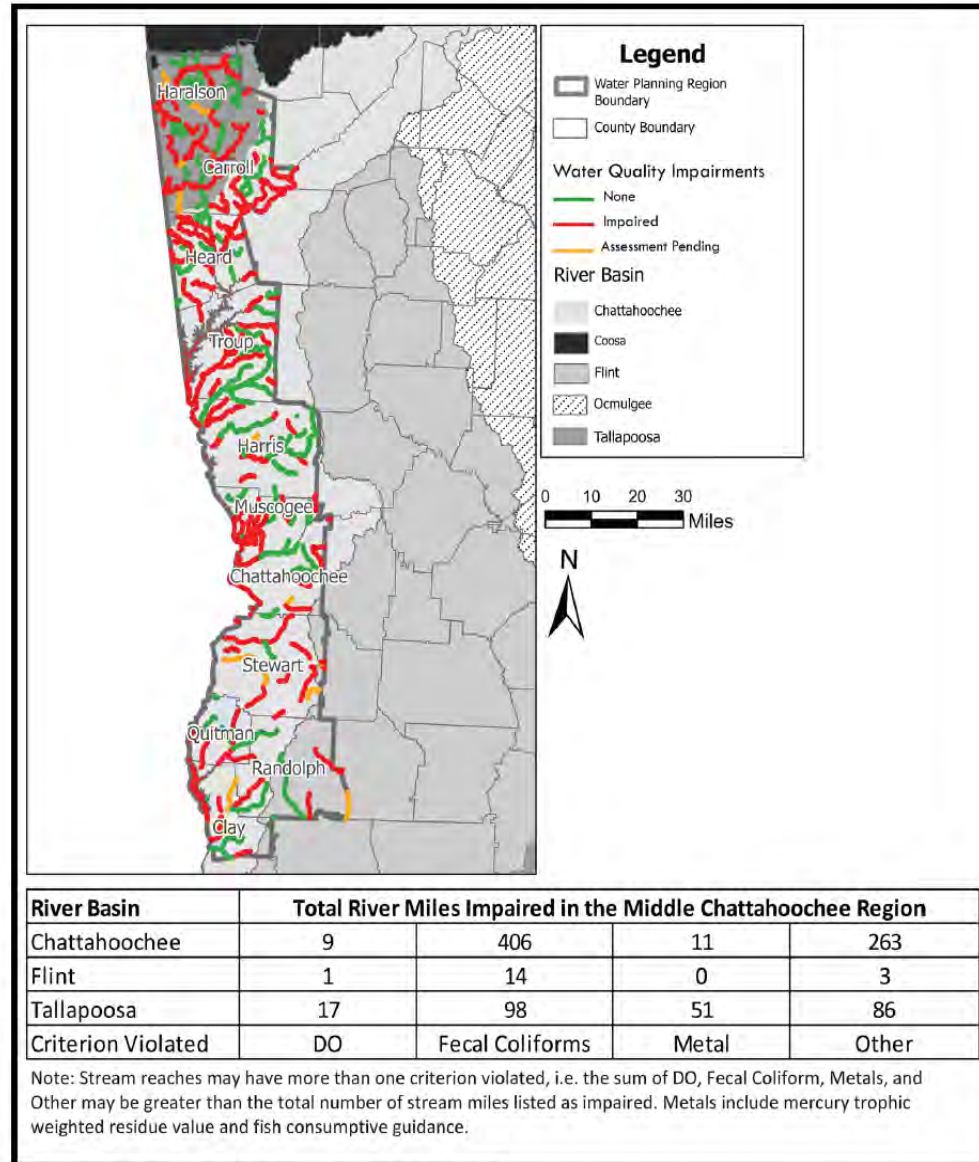
Impaired waters

Increased temperature, nutrients

# More care needed: Impairment

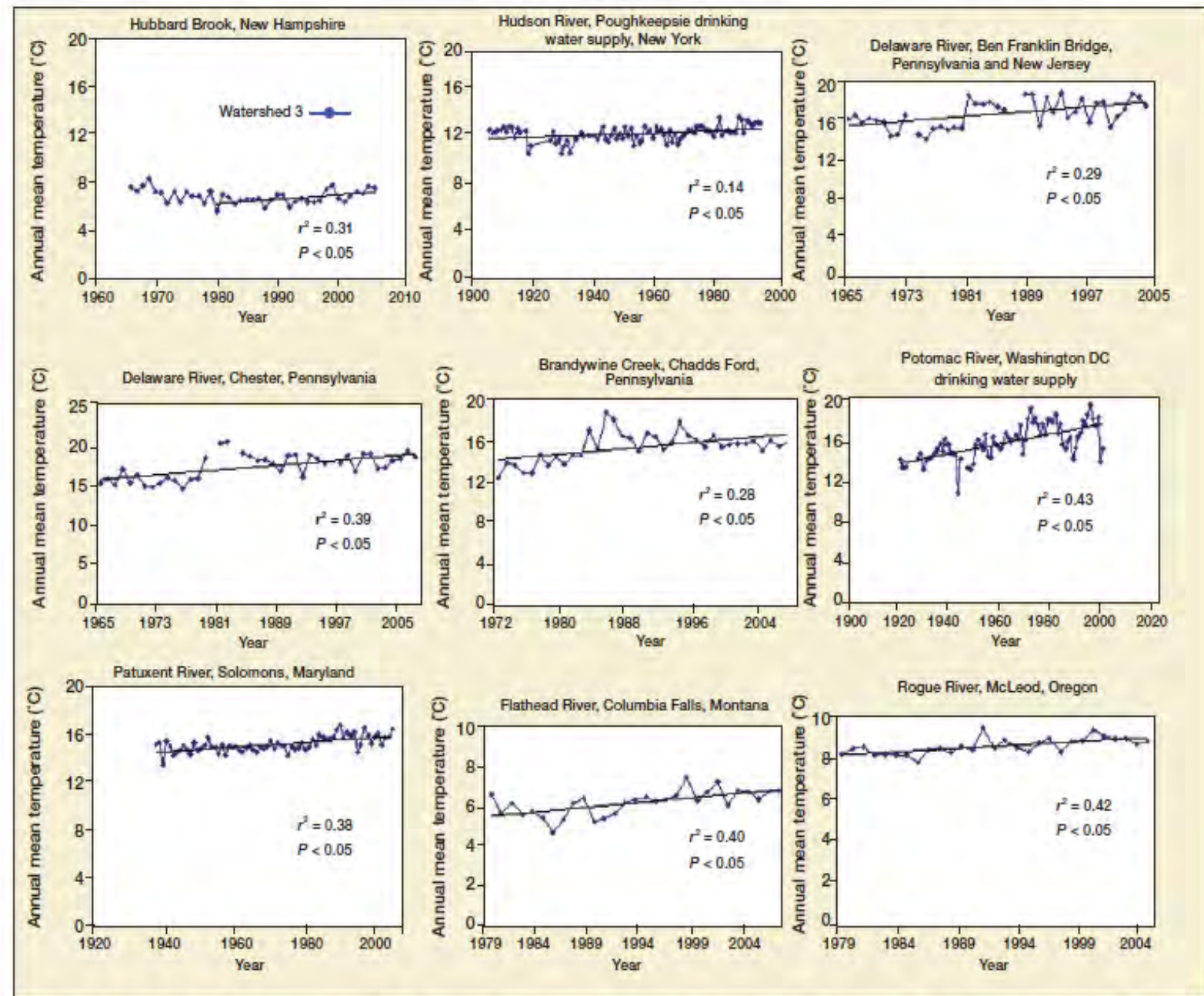
959 total miles of river impaired;  
How does long-term planning  
take this into account?

Figure 3-11: Surface Water Quality Assessment in  
Middle Chattahoochee Water Planning Region 305(b) Report 2022



Source: GAEPD, Water Quality in Georgia 2022

More care  
needed:  
Temperatures  
are increasing  
in U.S. rivers

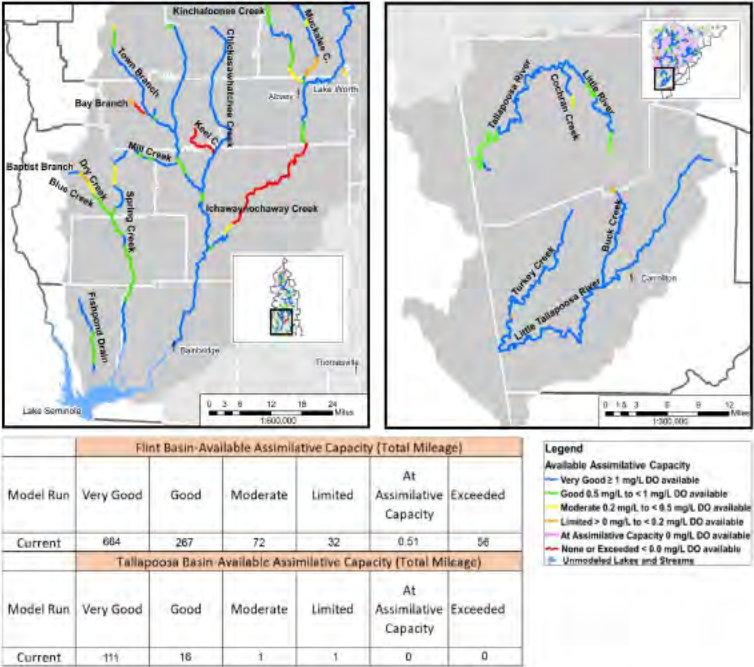


**Figure 1.** Examples of long-term trends in historical water temperature in streams and rivers in the US (linear regression). Results from comparative analyses for all datasets using Mann-Kendall trend test and Sen's slope estimates are also found in WebTable 3.



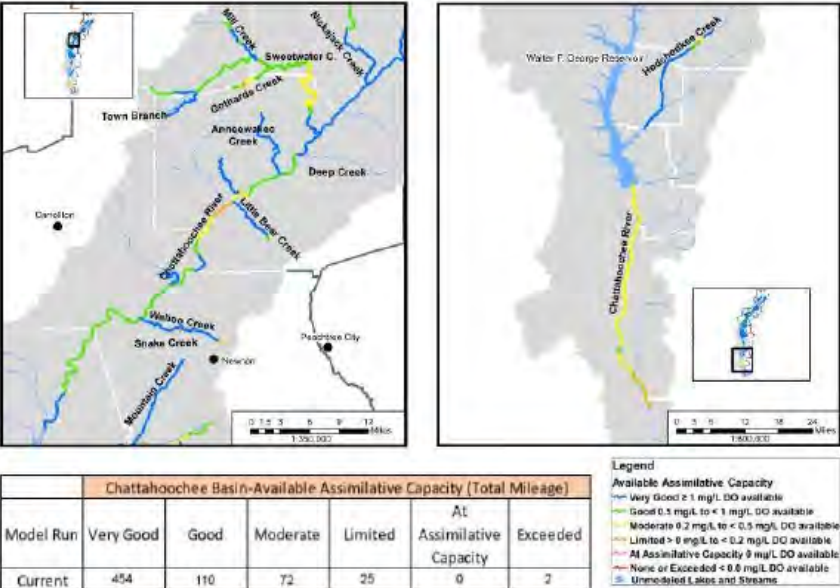
# More care needed: Temperature effects on Assimilative Capacity

Figure 3-8: Assimilative Capacity Results from Dissolved Oxygen Assessment: Flint and Tallapoosa River Basins (Current)



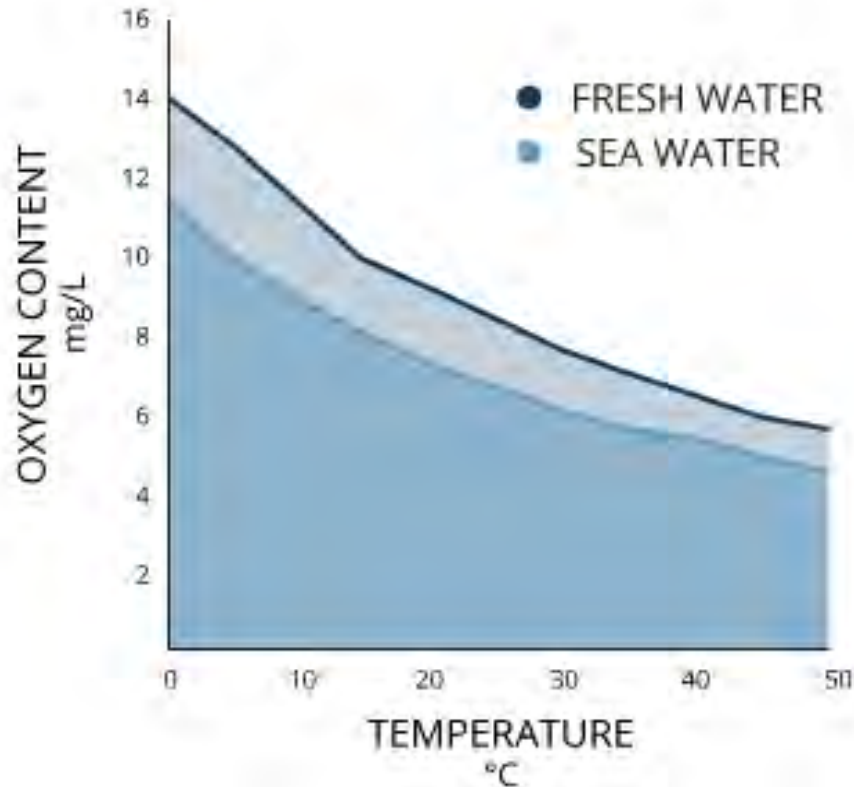
Source: GAEPD, Synopsis Report – Surface Water Quality (Assimilative Capacity) Resource Assessment, July 2022.

Figure 3-6: Assimilative Capacity Results from Dissolved Oxygen Assessment: Chattahoochee River Basin (Current) – cont.



Increased temperature will reduce assimilative capacity by reducing solubility of dissolved oxygen (DO)

# Temperature reduces D.O. concentrations due to solubility (~0.4 mg/l,+3.5°F)



<https://www.fondriest.com/environmental-measurements/parameters/water-quality/dissolved-oxygen/>

Temperature-Oxygen Solubility Relationship	
Temperature (°C)	Oxygen Solubility (mg/L)
0	14.6
5	12.8
10	11.3
15	10.2
20	9.2
25	8.6
100	0

<https://www.ysi.com/ysi-blog/water-blogged-blog/2013/05/what-is-affecting-your-dissolved-oxygen-measurements-part-1-of-4>



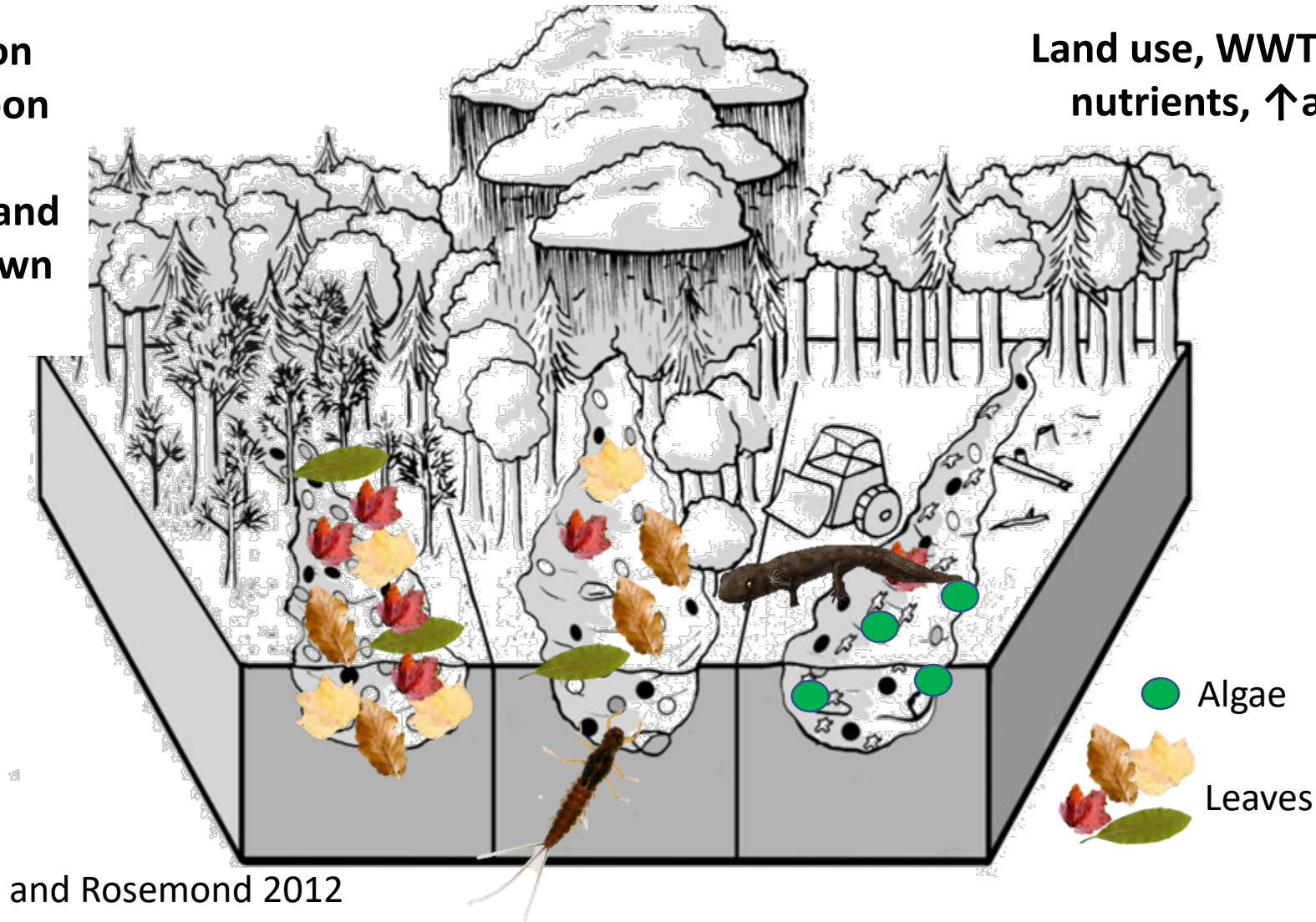
# More care needed: +Temperature, +nutrients negatively affects 'brown' food web base of streams

Climate  $\Delta$ : Warming + high/low flows – reduce retention

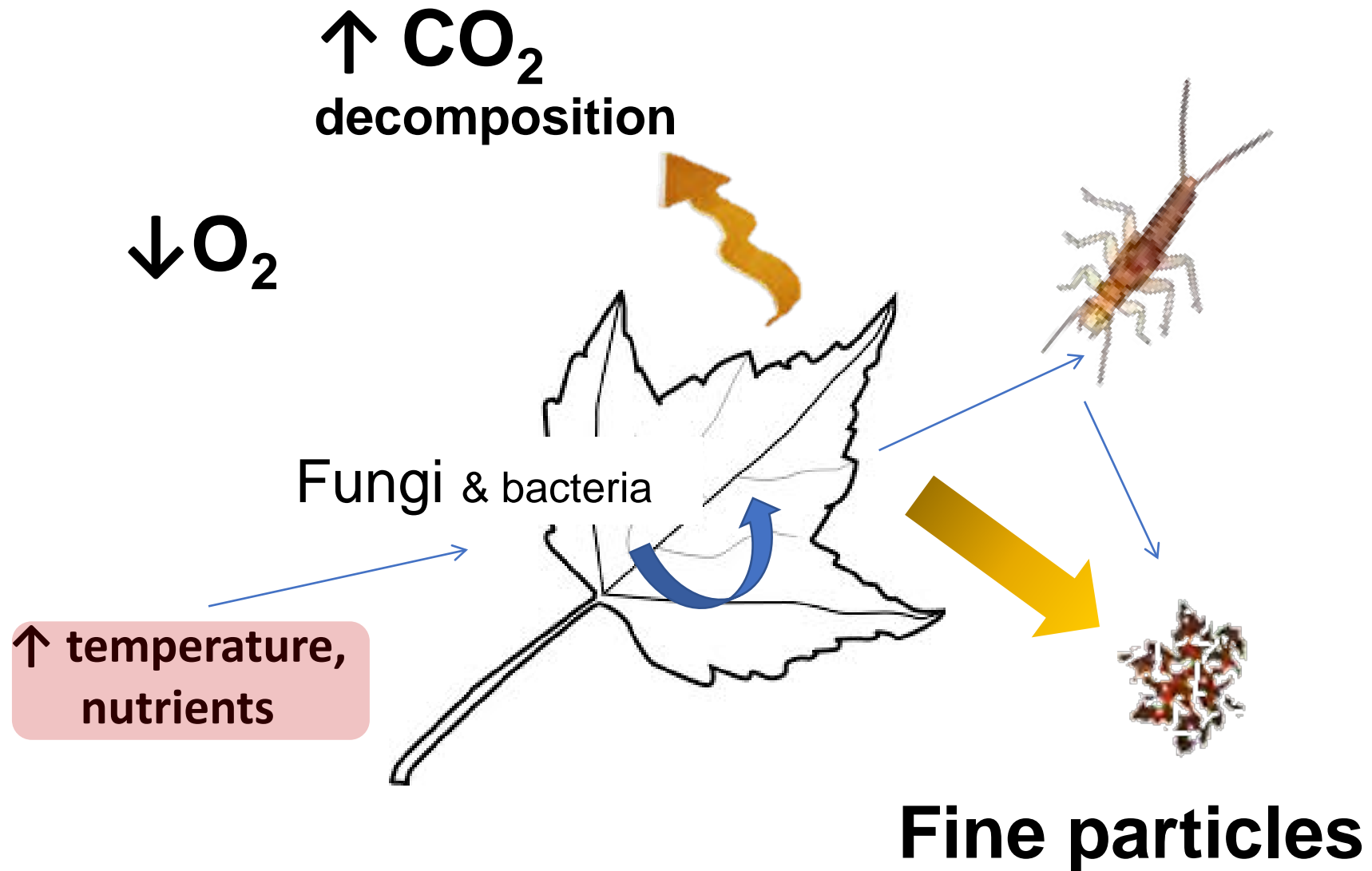
Streams depend on  
land inputs of carbon

Carbon like leaves and  
sticks is called 'brown  
carbon'

Land use, WWTPs add  
nutrients,  $\uparrow$ algae

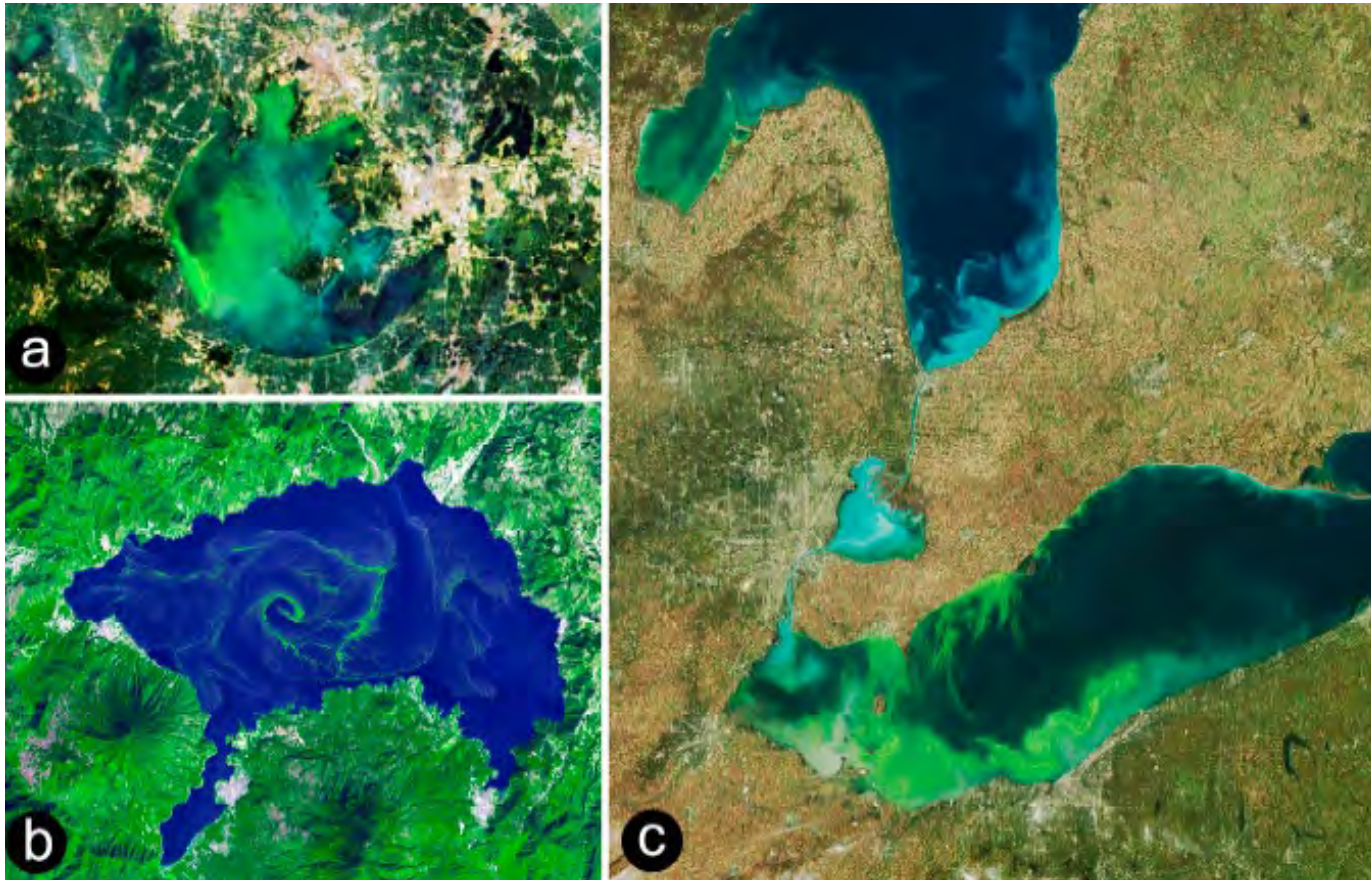


# ↑ Temperature, nutrients reduce valuable stream carbon



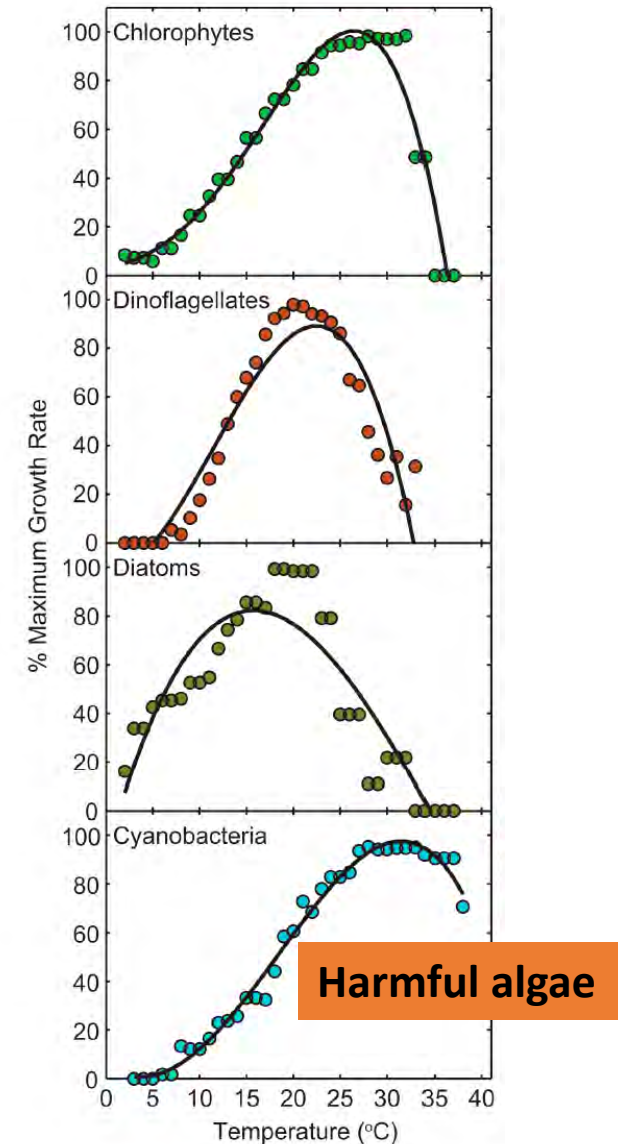


# ↑ Temperature, nutrients increase HABs



Harmful algal blooms (HABs) are on the rise globally, including GA

Paerl 2018



# More monitoring/systems approach/collaboration?

Monitoring discharge, temperature, nutrients?

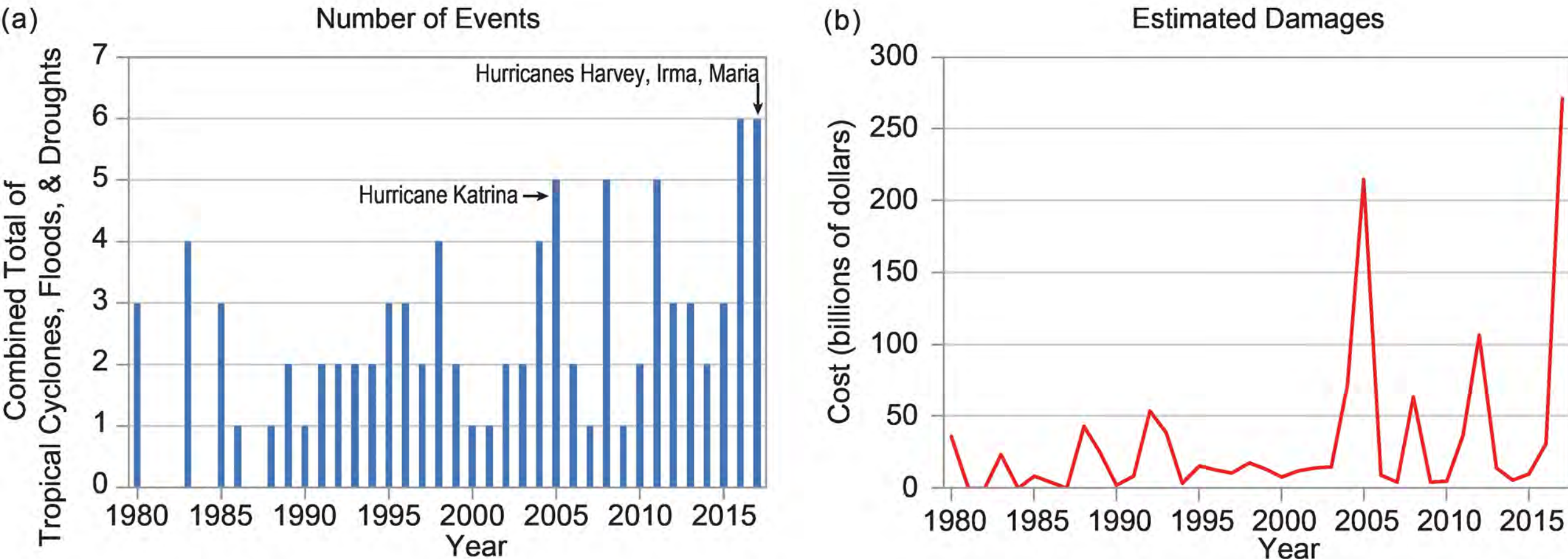
Systems approaches

People/stakeholders

Natural infrastructure



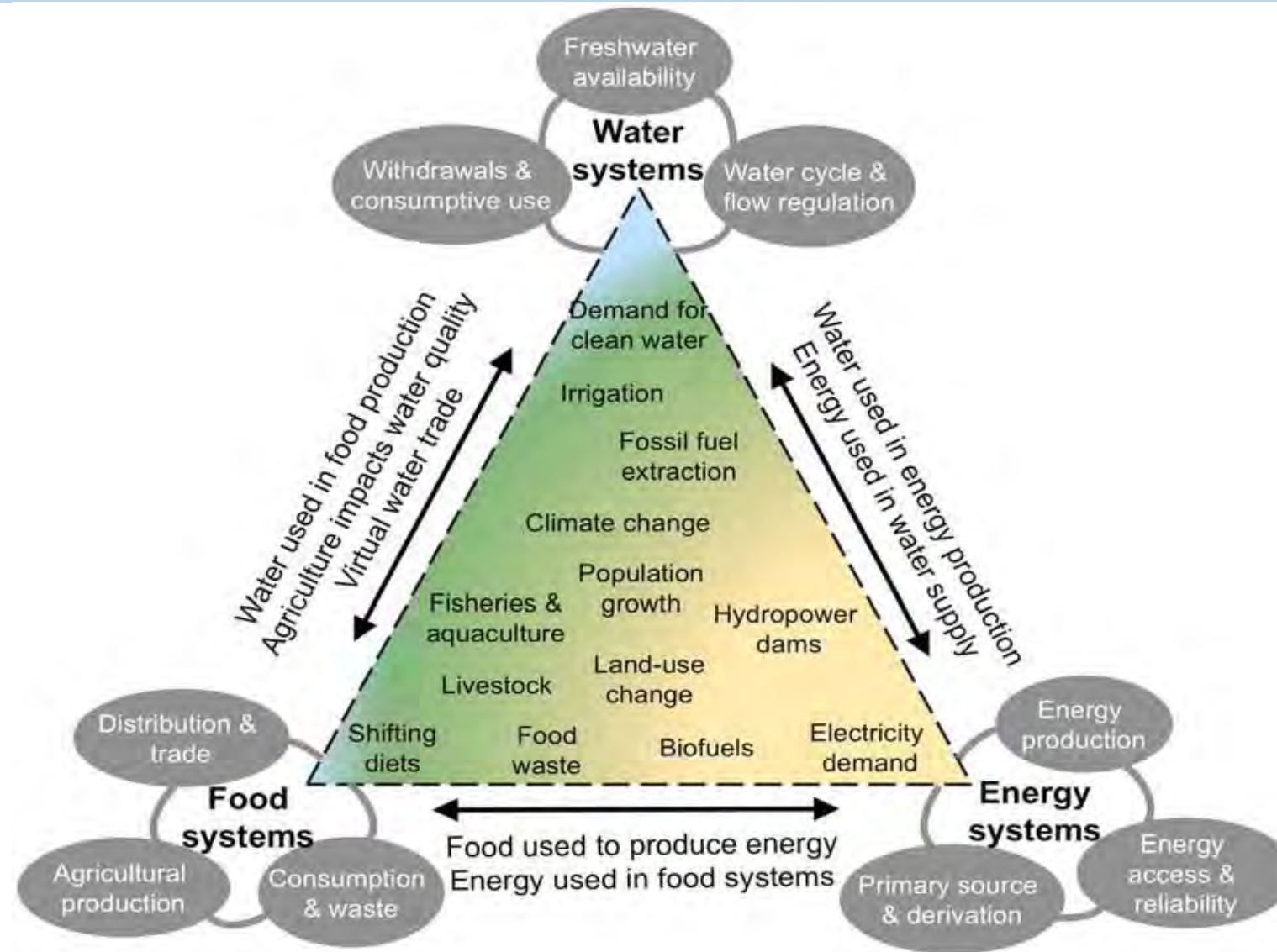
Extreme events are increasing. Is monitoring, planning sufficient for baseline & events (e.g., drought, temperature, nutrients)?



Billion-Dollar Weather and Climate Disaster Events in the U.S.

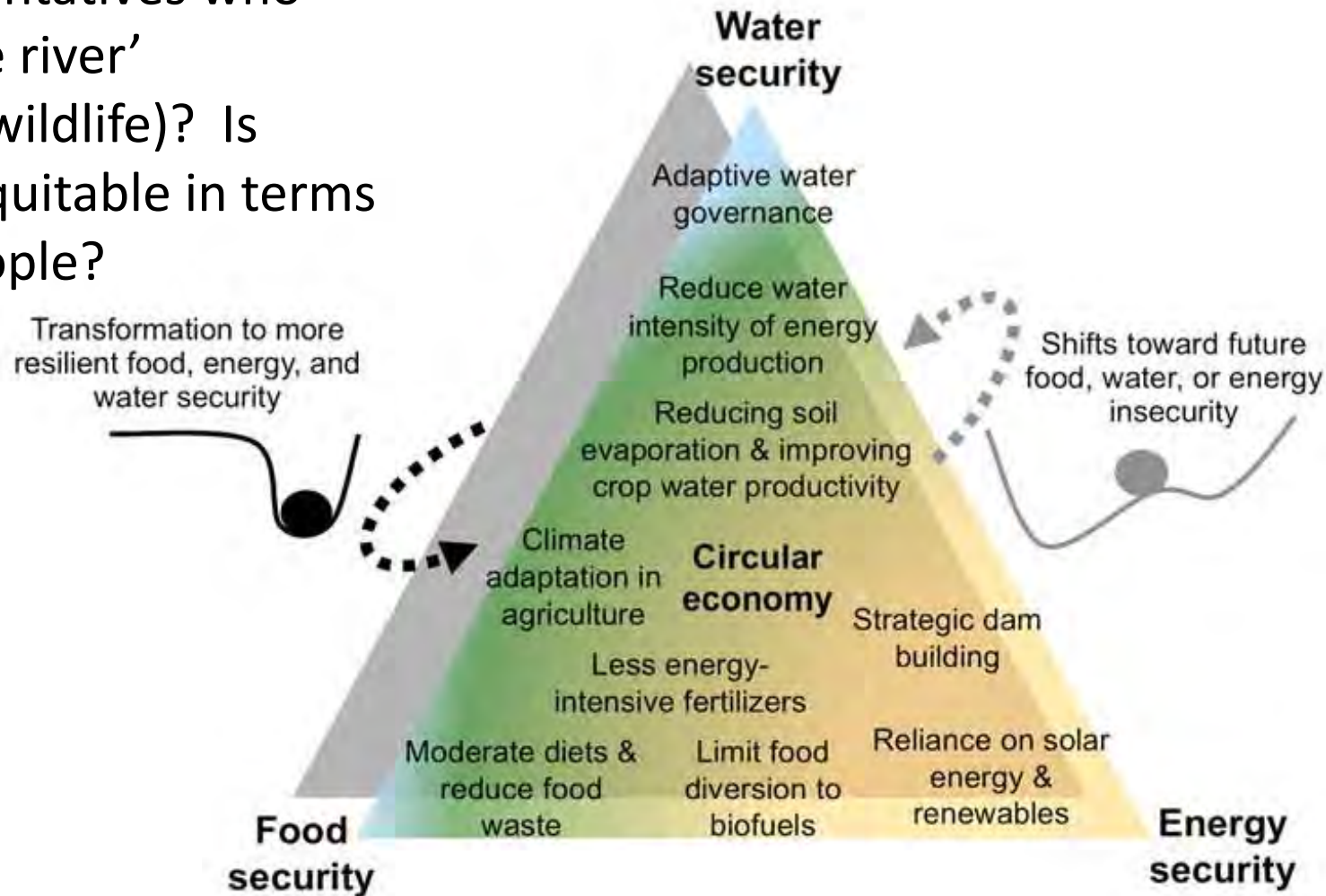
**Figure 3.1:** The figure shows (a) the total number of water-related billion-dollar disaster events (tropical cyclones, flooding, and droughts combined) each year in the United States and (b) the associated costs (in 2017 dollars, adjusted for inflation). Source: adapted from NOAA NCEI 2018.<sup>19</sup>

# Systems approach: people with multiple demands for water



# Systems approach: people can also be part of the solution - 'all hands on deck' for water security!

Are there representatives who can 'speak for the river' (ecology/health/wildlife)? Is representation equitable in terms of benefits to people?





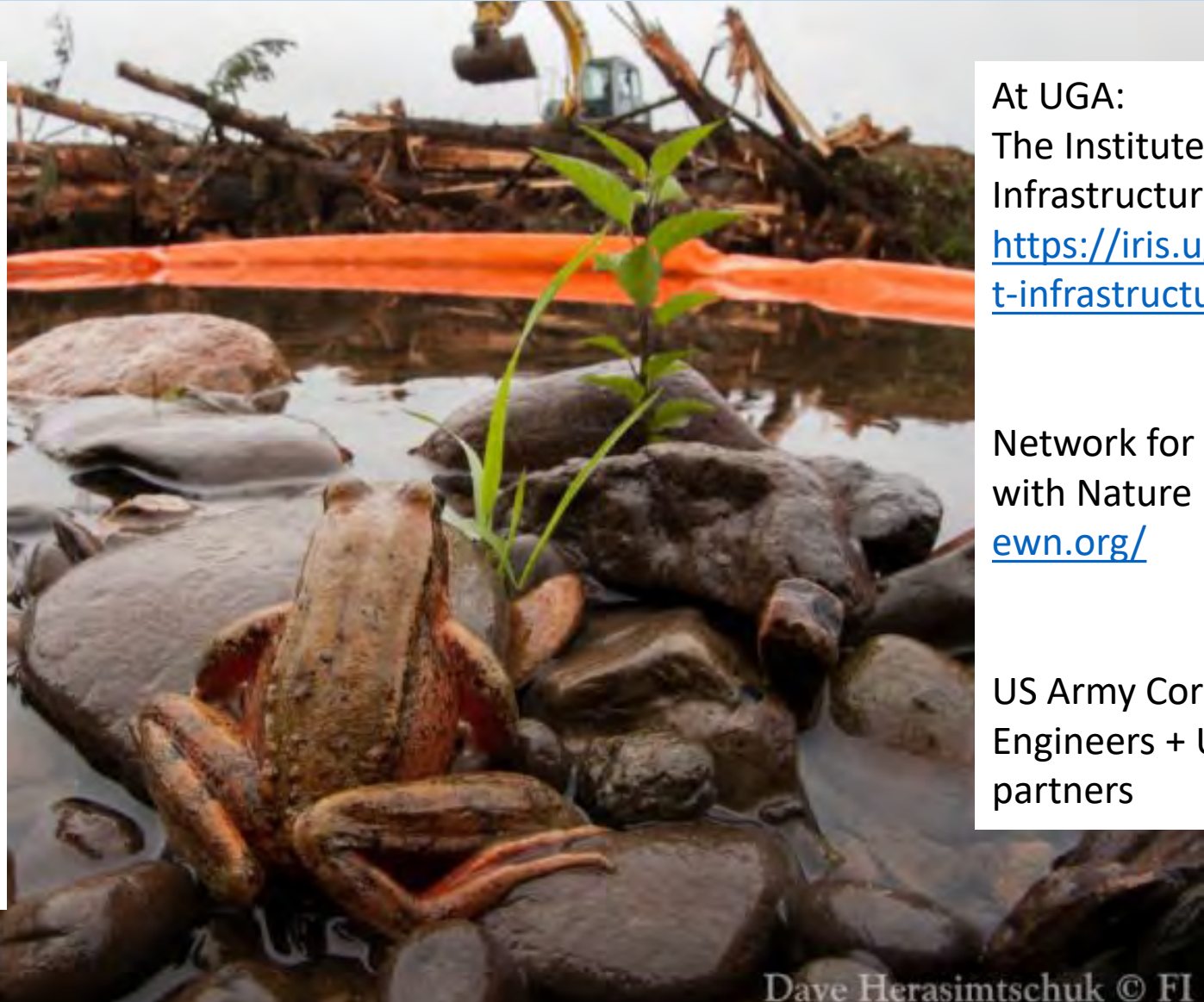
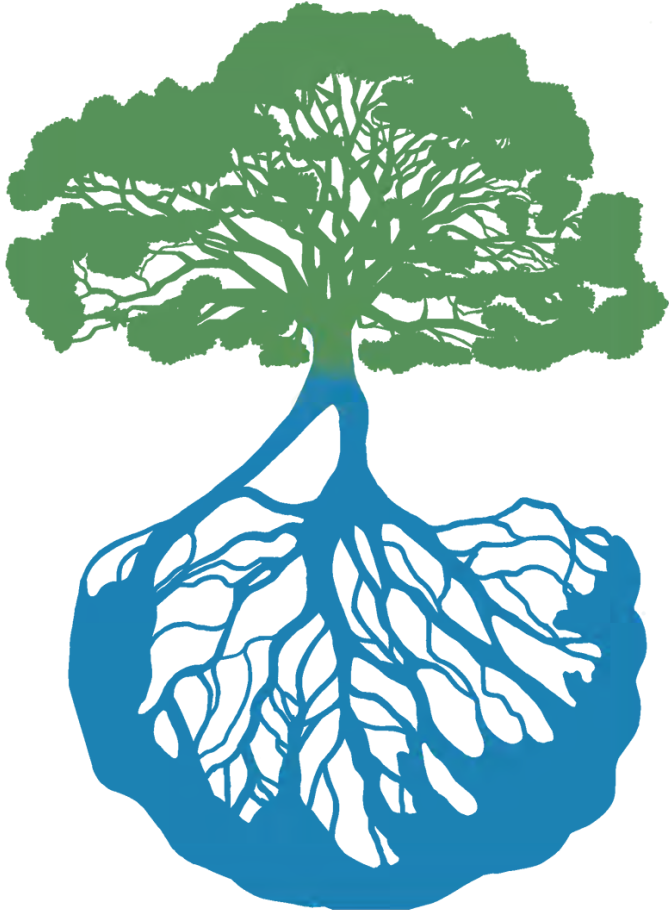
# Systems approach, Land/water: Watershed vegetation cools streams + provides carbon inputs



**Riparian vegetation can cool streams ca. 3.5°F; C.R. Jackson, unpublished**

[http://www.chesapeakebay.net/issues/issue/forest\\_buffers](http://www.chesapeakebay.net/issues/issue/forest_buffers)

# Systems approach: Land/water connections that address nutrient inputs and temperature



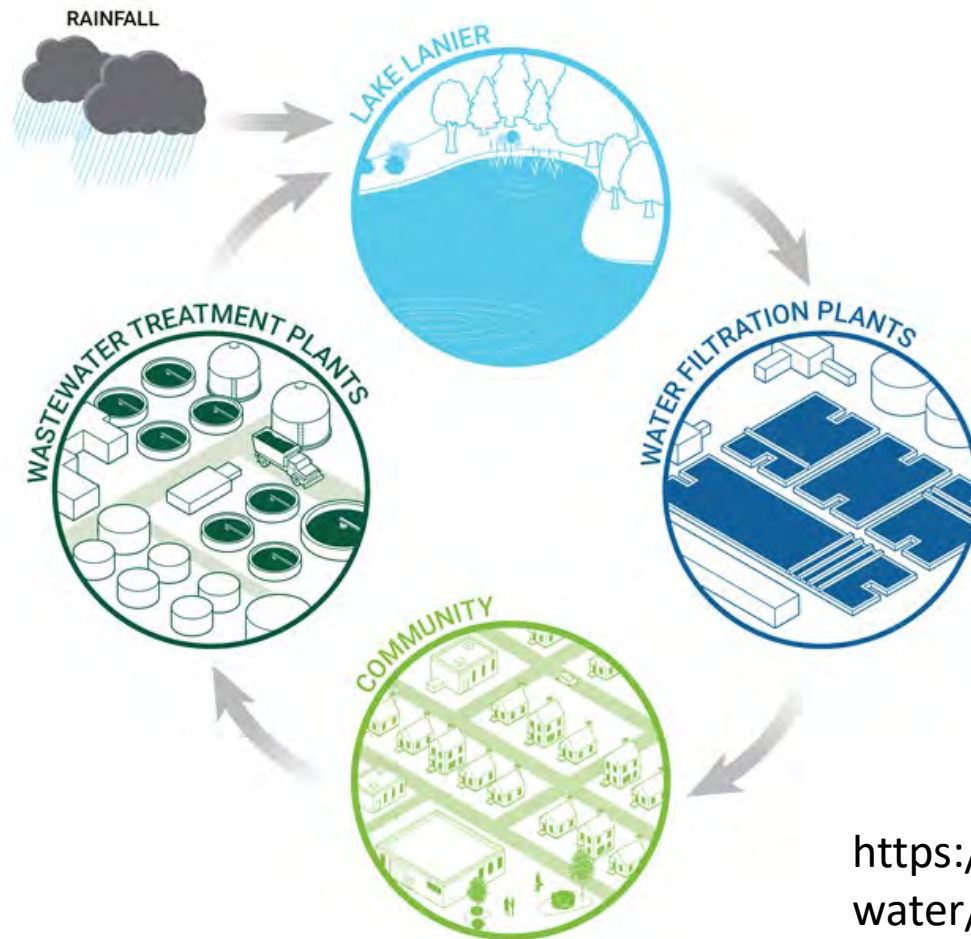
At UGA:  
The Institute for Resilient  
Infrastructure Systems  
<https://iris.uga.edu/about-infrastructure/>

Network for Engineering  
with Nature <https://n-ewn.org/>

US Army Corps of  
Engineers + UGA + other  
partners

# Systems approach: More aggressive and innovative wastewater treatment & water conservation/reuse?

**Human Water Cycle**



<https://www.gwinnettcounty.com/web/gwinnett/departments/water/whatwedo/wastewater>



# Thank you!

Amy Rosemond ([rosemond@uga.edu](mailto:rosemond@uga.edu))

<https://rosemondlab.ecology.uga.edu/>

# USFWS Presentation

Peter Maholland, *USFWS*





# Georgia Ecological Services





# USFWS Mission



The Service's Mission is to work with others to conserve, protect and enhance fish, wildlife, plants and their habitats for the continuing benefit of the American people.



# Service Programs (Organization)



- **Ecological Services:** In Georgia, we help protect 79 ESA-listed species.
- **Partners for Fish and Wildlife / Coastal Programs:** FY2012 – FY2022, we worked with private landowners to implement 384 projects totaling over \$4,392,360, restoring or enhancing 13,127 acres of upland and wetland habitat, and 41.7 miles of stream and shoreline habitat in Georgia.
- **National Wildlife Refuge System:** We manage over 496,000 acres on 11 refuges in Georgia that welcomed 1,159,268 visitors in FY 2022.
- **Migratory Bird Program:** We work with partners to conserve bird species protected by the Migratory Bird Treaty Act that call Georgia home.
- **Fish and Aquatic Conservation:** The Service operates the Warm Springs and Chattahoochee National Fish Hatcheries that provided disease testing for 41 Federal, State, Tribal Hatchery Partners, welcomed 6,000 visitors in FY 2022.

# GA ES Responsibilities



- Protect and recover threatened & endangered species and their habitats
- Conserve at-risk species to prevent their need for future listing



## Authorities

- Endangered Species Act
- Migratory Bird Treaty Act
- Fish & Wildlife Coordination Act
- Bald and Golden Eagle Protection Act
- Marine Mammal Protection Action





# GA Ecological Services Field Offices



## Athens, Georgia

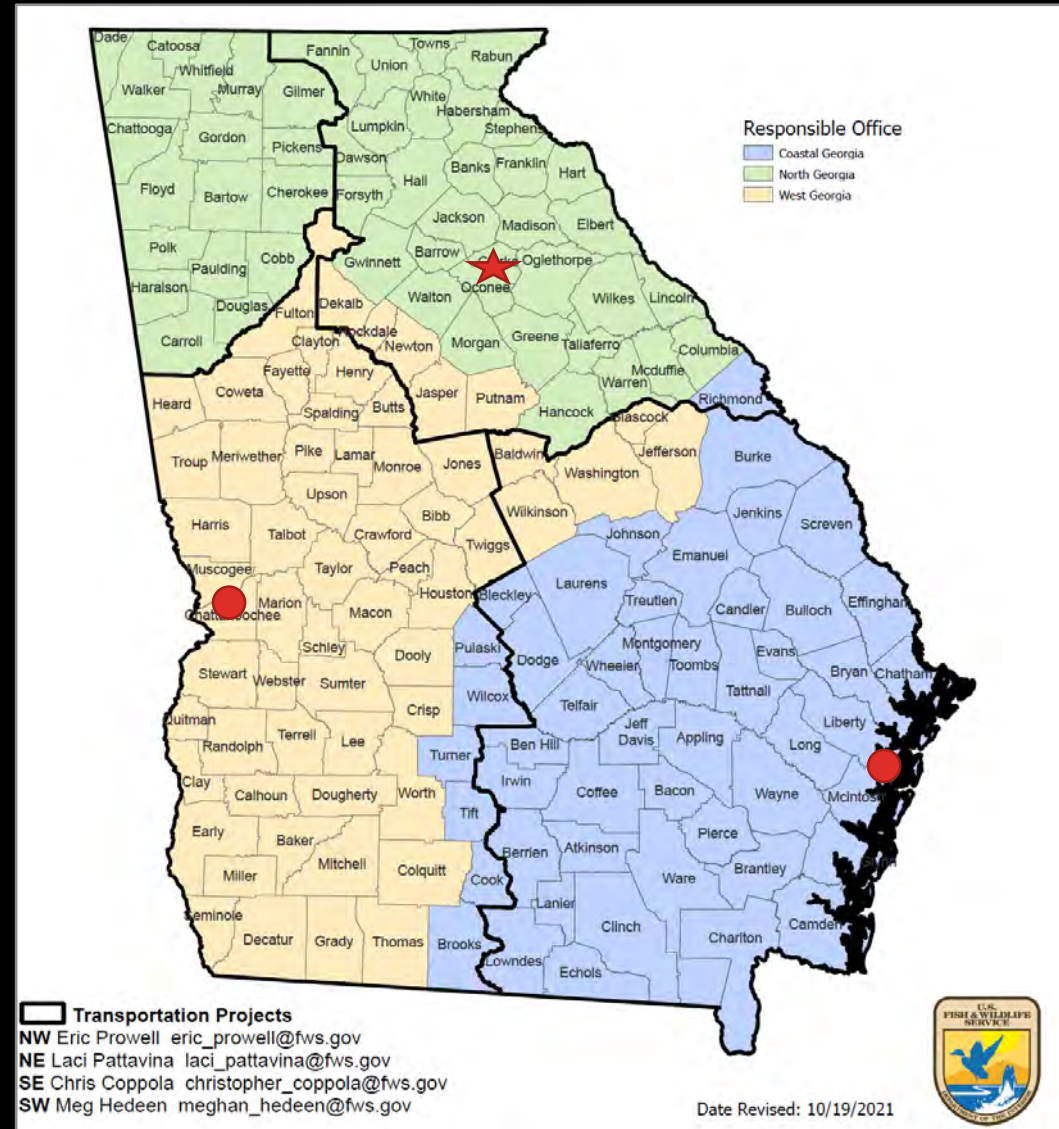
- Main Office
- RG Reynold Fed. Building

## West Georgia Office

- Sub Office
- Fort Moore

## Coastal Georgia Office

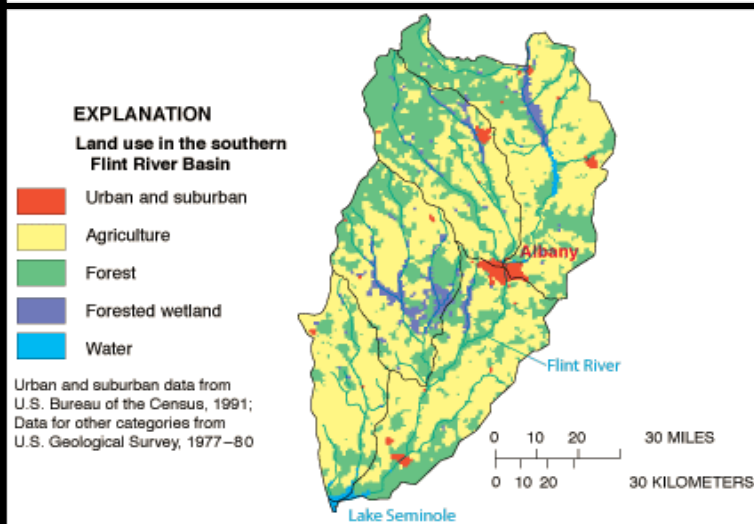
- Sub Office
- Harris Neck NWR



# Conservation and Agriculture (SW GA)



- 5 listed mussels- Primary issue is water quantity related to groundwater pumping and center pivot irrigation.
- Working to develop Habitat Conservation Plan with GA EPD.
- Working with USDA- NRCS to develop a programmatic agreement to implement conservation practices.





# State Wildlife Action Plan



## SWAP

- Comprehensive Revision for 2025
- Identify "species of greatest conservation need"
- High priority watersheds delineated to assist in identifying watershed specific conservation actions



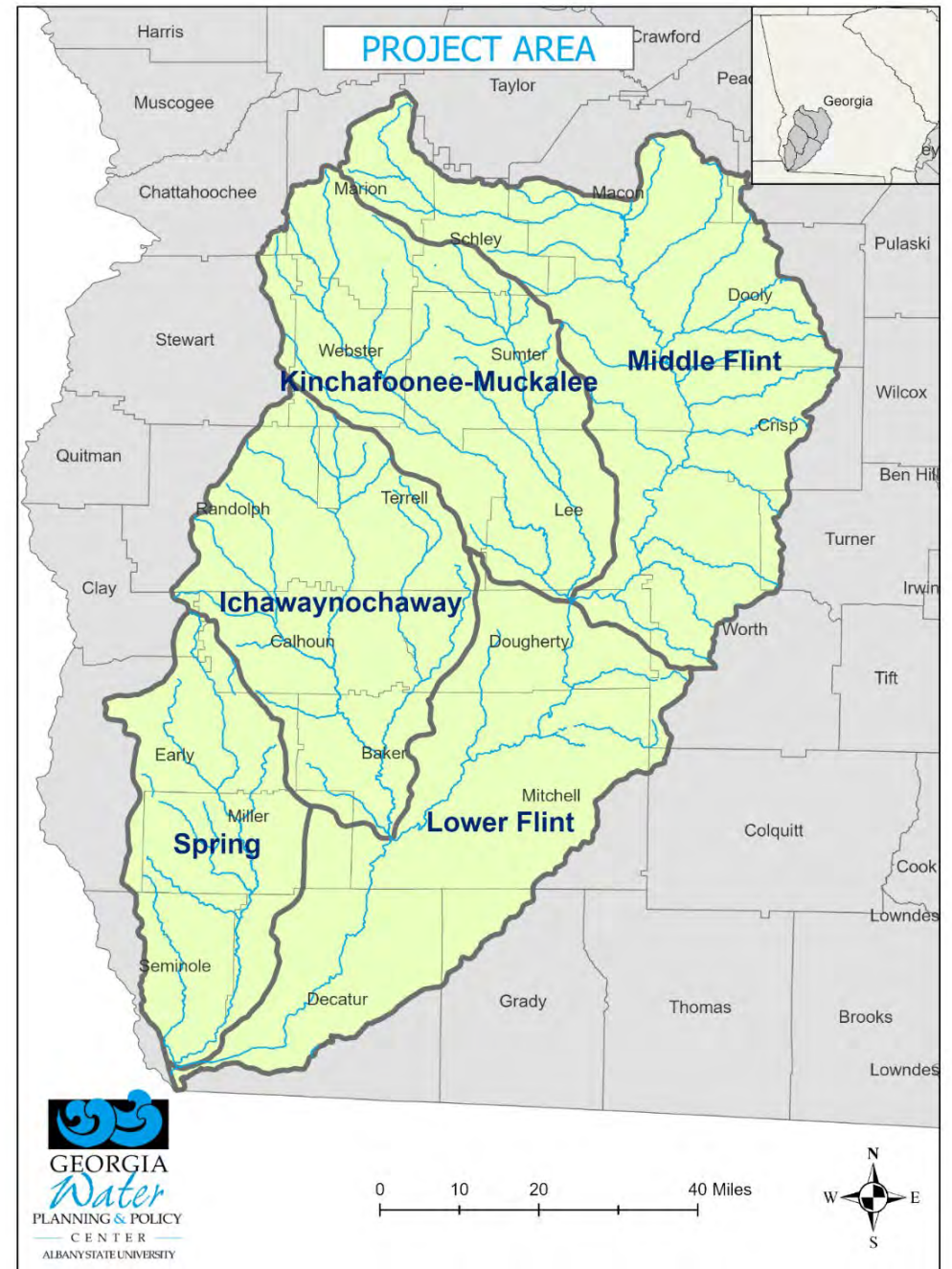


# GA-FIT Report

Kristin Rowles, GWPPC







# GA-FIT Advisory Board

- Murray Campbell, farmer & Lower Flint-Ochlockonee (LFO) Council (Chair)
- Donald Chase, farmer & Upper Flint Water Council
- David Dixon, Miller Brewing (retired) & LFO Water Council
- Tommy Dollar, farmer, Dollar Farm Products
- Adam Graft, farmer & Upper Flint Water Council (Chair)
- Connie Hobbs, Baker County Commission (Chair) & LFO Water Council
- Tom McCall, Georgia Farm Bureau (President)
- Marty McLendon, farmer & Flint River S&W Conservation District
- T.E. Moyer, farmer & Georgia Federal-State Inspection Service (President)
- Andy Payne, farmer and Lower Chattahoochee S&W Conservation District
- Gordon Rogers, Flint Riverkeeper & Upper Flint Water Council
- Richard Royal, LFO Water Council
- Jayme Smith, City of Colquitt, Economic Development
- Jimmy Webb, farmer & LFO Water Council

## Technical Support Team



...and others as needed.



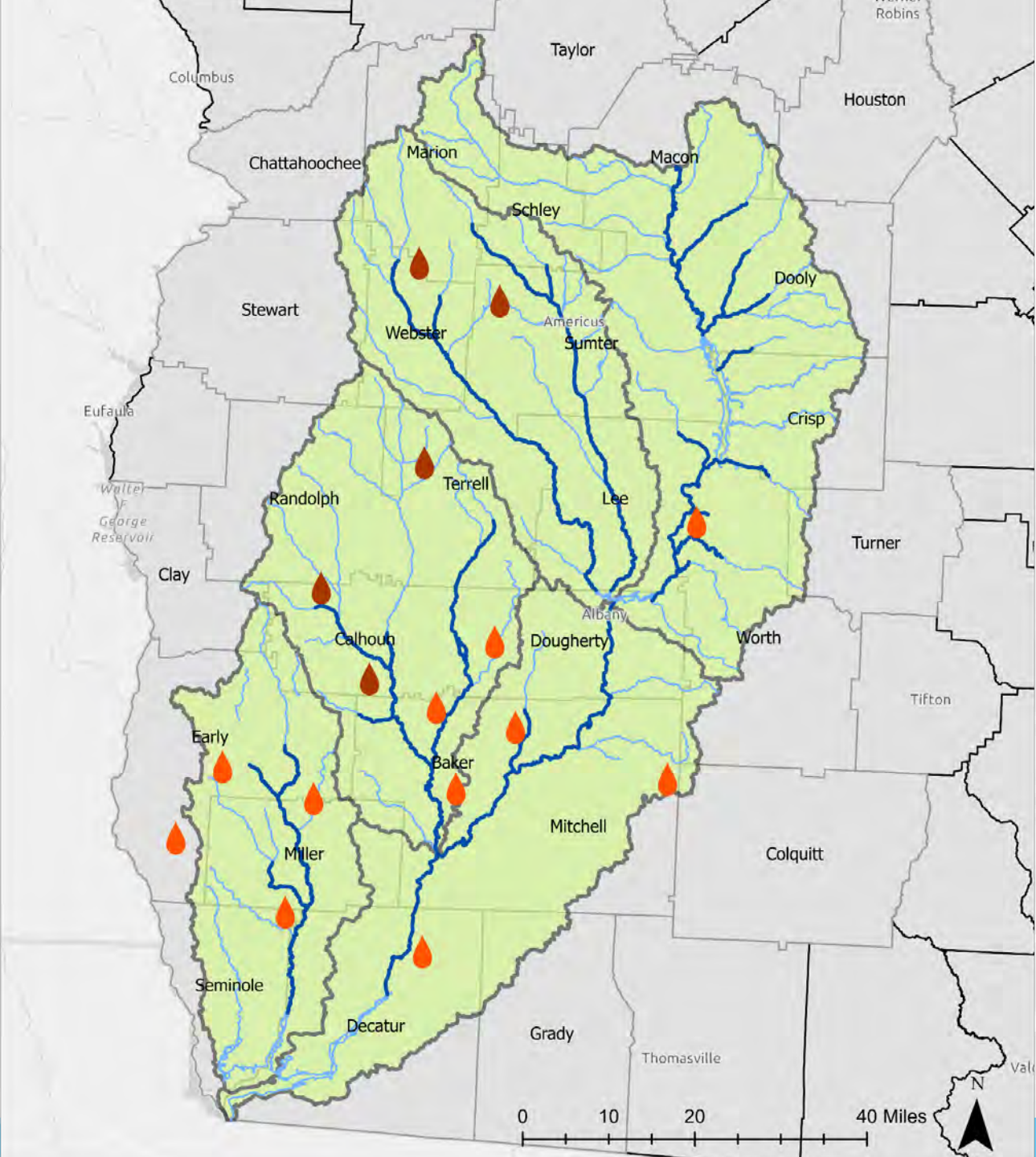


# Project Updates

- GA-FIT Voluntary Irrigation Suspension Auction
- Drought SWAP Applications and Prioritization
- Monitoring Wells/GW Research
- Mussel Surveys and Habitat Mapping
- State and Federal Coordination Meetings
- Management Alternatives: Stream and Aquifer Modeling
- USFWS HCP Planning Grant
- Draft HCP Development



# Monitoring Wells

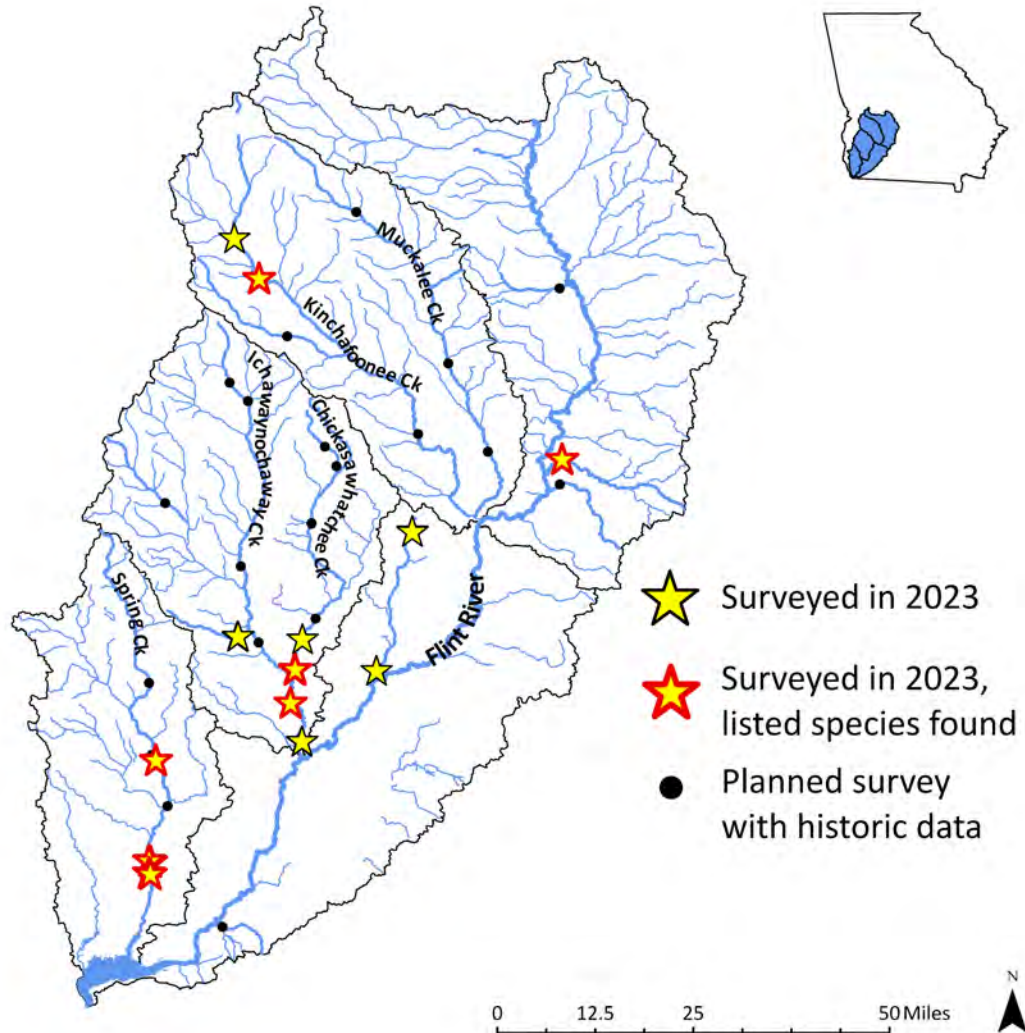


-  Claiborne Monitoring Well
-  Cretaceous Monitoring Well
-  Project Area Lower Flint River Basin
-  Critical Habitat





# Mussel Survey Progress



Oval Pigtoe



Shiny-rayed  
Pocketbook



# Management Actions to be evaluated

## *Drought management to avoid and minimize low flows*

- Source switching (surface water to confined Claiborne or Cretaceous aquifer)
- On-farm conservation planning and BMP implementation (irrigation scheduling, soil moisture sensors, etc.)
- Voluntary temporary suspension of irrigation through incentives (Flint River Drought Protection Act)
- Low flow restrictions on surface water permits
- Streamflow augmentation

## *Actions to mitigate impacts to mussel populations*

- Public education
- New/expanded water use in areas where resource capacity exists
- Agricultural easements, solar conversion or other that remove land from irrigation
- Expand lands managed for restoration forestry
- BMPs to reduce nonpoint source runoff (dirt roads, agricultural lands)
- NPDES permit revisions for point sources
- Reintroduction of mussel populations (first step: genetic analysis)
- Fish passage restoration

*Others?*



# Habitat Conservation Plan (HCP)

HCP must include:

- Assessment of the likely impacts on the species
- Measures that the permit holder will take to avoid, minimize, mitigate, and monitor the impacts to the species
- Biological goals and objectives
- Adaptive management, as needed to address scientific uncertainty
- Discussion of alternatives considered
- Identification of funding to implement the plan
- Monitoring and reporting
- Compliance with public participation requirements of National Environmental

Policy Act









# Next Steps





# Next Steps

- Nutrients & Fisheries Panel
  - Brent Hess, WRD
  - Reid Jackson, GAEPD
  - Steve Sammons, Auburn University
- Fact Sheets
  - For Council review – watch for emails on this
- Future Council Meetings
  - Look out for emails for scheduling
  - Additional topics of interest?



# Adjourn

