



Validity and Usefulness of Citizen Volunteer Water Data in River Basin Management



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Auburn University**

USDA-CSREES National Water Conference
Research, Extension and Education for
Water Quality and Quantity

January 30, 2007
Savannah, Georgia



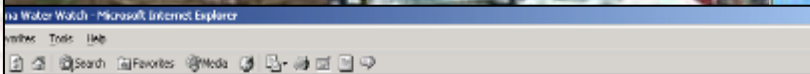


Alabama Water Watch



A Program dedicated to
Citizen Volunteer Monitoring
of Alabama's
Lakes, Streams and Coasts

With partial funding from:
U.S. EPA, Region 4
Alabama Department of Environmental Management
Alabama Agricultural Experiment Station
Alabama Water Watch Association
Alabama Cooperative Extension System



The screenshot shows the website's navigation menu: About AWW, Data Entry, Calendar, Monitor Resources, Image Gallery, and Water Data. A sidebar on the left contains the text: "A program dedicated to developing citizen volunteer monitoring of Alabama's lakes, streams and coasts." Below this is a map of Alabama with the text "Click on map to search water data". The main content area features a "Rivers of Alabama Website" section with a map of the state and a description: "This AWW sponsored website brings Alabama rivers to life by examining each watershed individually and in-depth." Below this is a link: "Visit the website to learn more about our watersheds." To the right is an "AWAWARENESS" section for "AWW's online Newsletter" with a sub-section for "Recertification Workshop in Smith Lake" and a link "Click here to see images gallery." Below that is another sub-section for "New Waterbody Report Available" with a link "Click here to find out about it".

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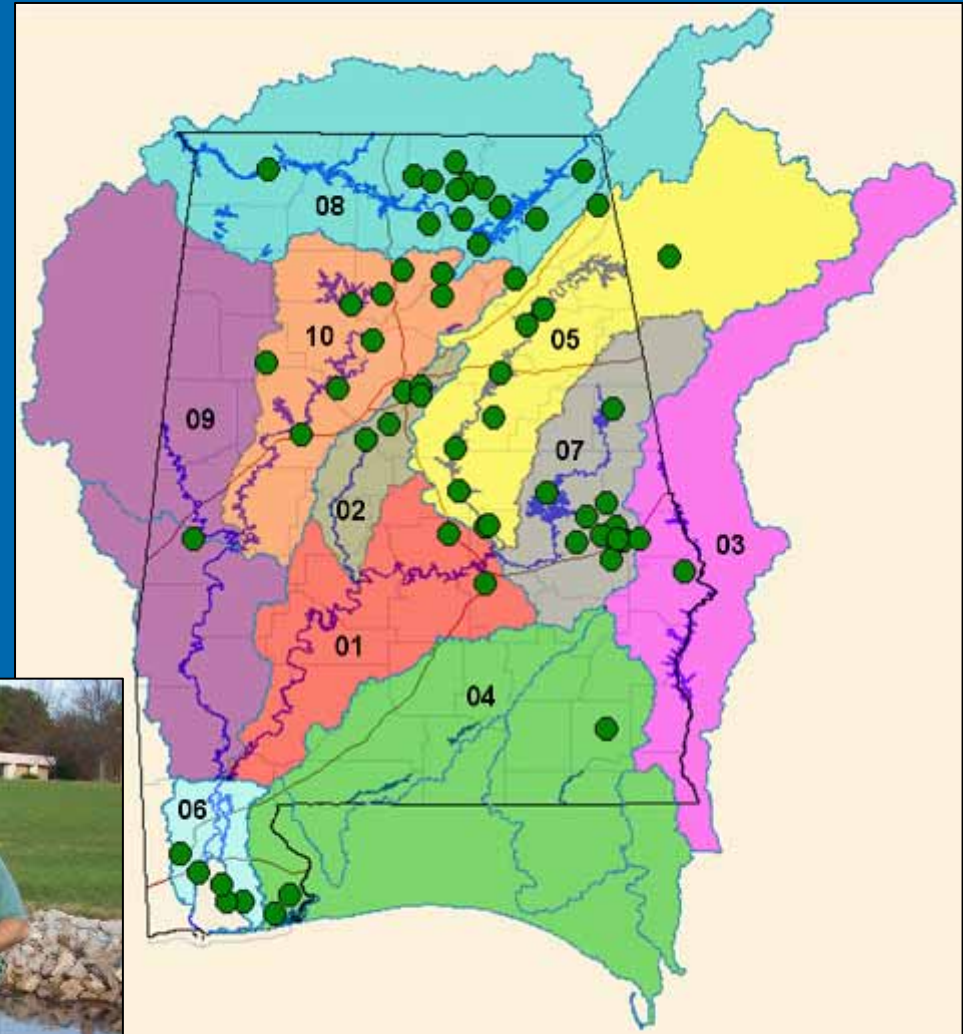
Alabama Water Watch

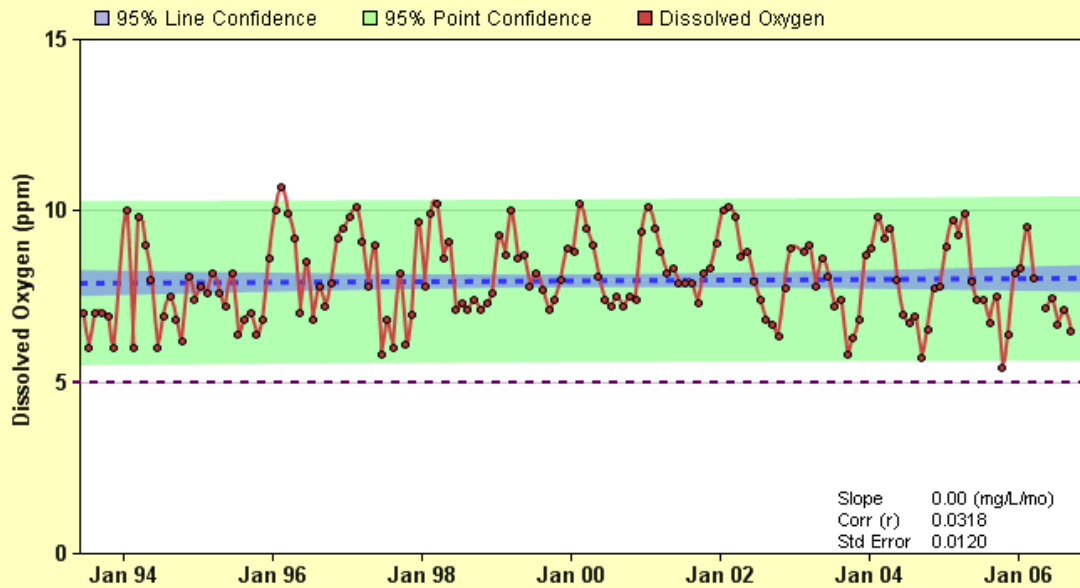


Water Chemistry Monitoring

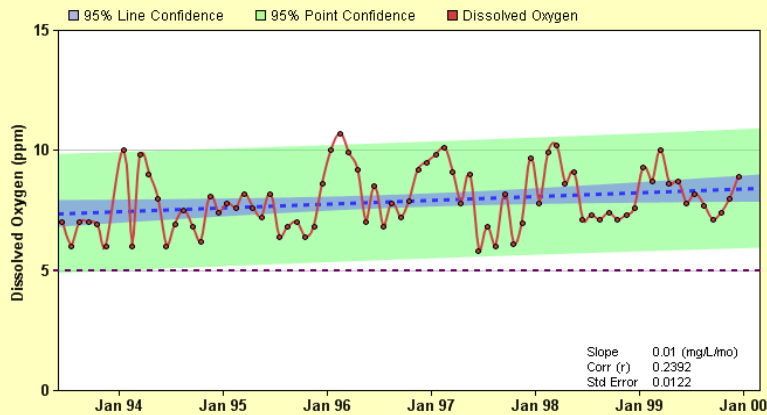
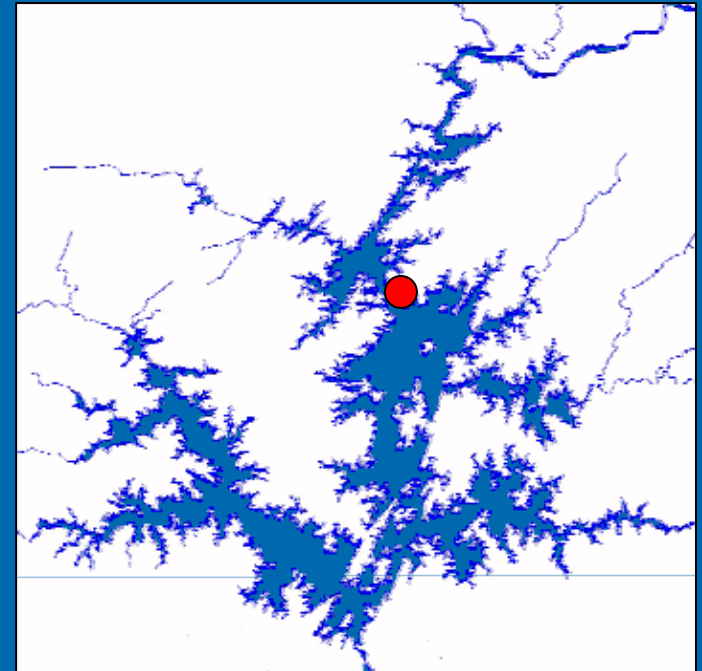


Alabama Water Watch Program

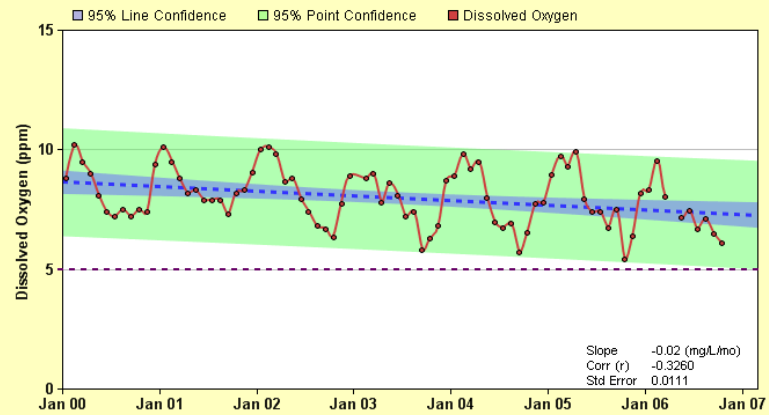




Dissolved Oxygen at site 07001003 in Tallapoosa County, AL
 Lake Martin (Tallapoosa Watershed) 158 samples
 Latitude: 32.843191 N, Longitude: -85.886966 W Hydrologic Unit Code (HUC11): 03150109180
 --- 5 ppm minimum Dissolved Oxygen required for Fish and Wildlife Classification

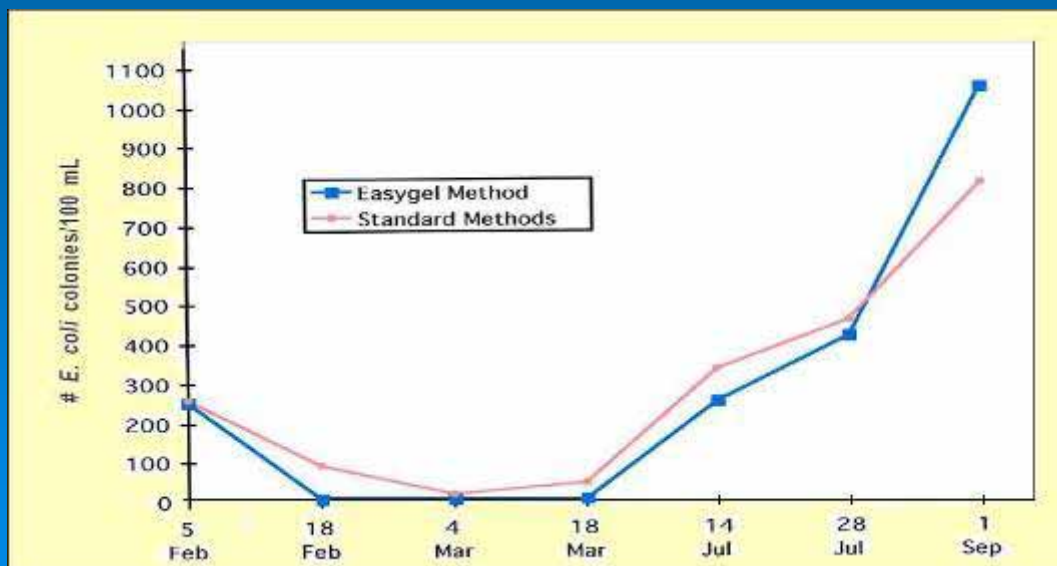
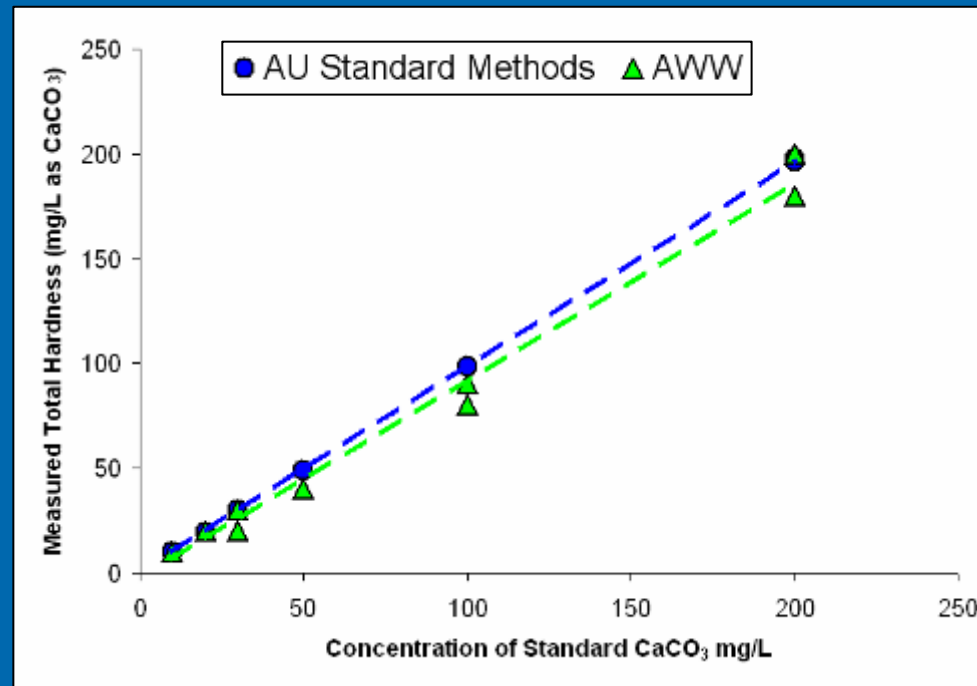


Dissolved Oxygen at site 07001003 in Tallapoosa County, AL
 Lake Martin (Tallapoosa Watershed) 78 samples
 Latitude: 32.843191 N, Longitude: -85.886966 W Hydrologic Unit Code (HUC11): 03150109180
 --- 5 ppm minimum Dissolved Oxygen required for Fish and Wildlife Classification

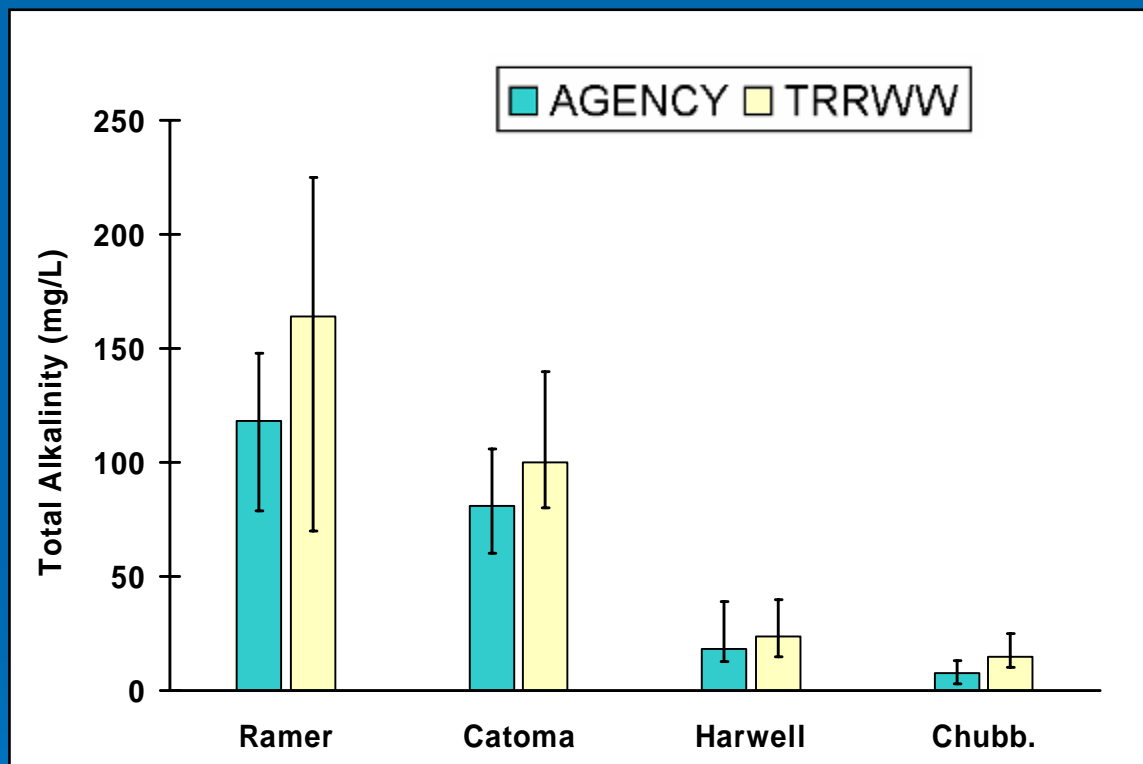
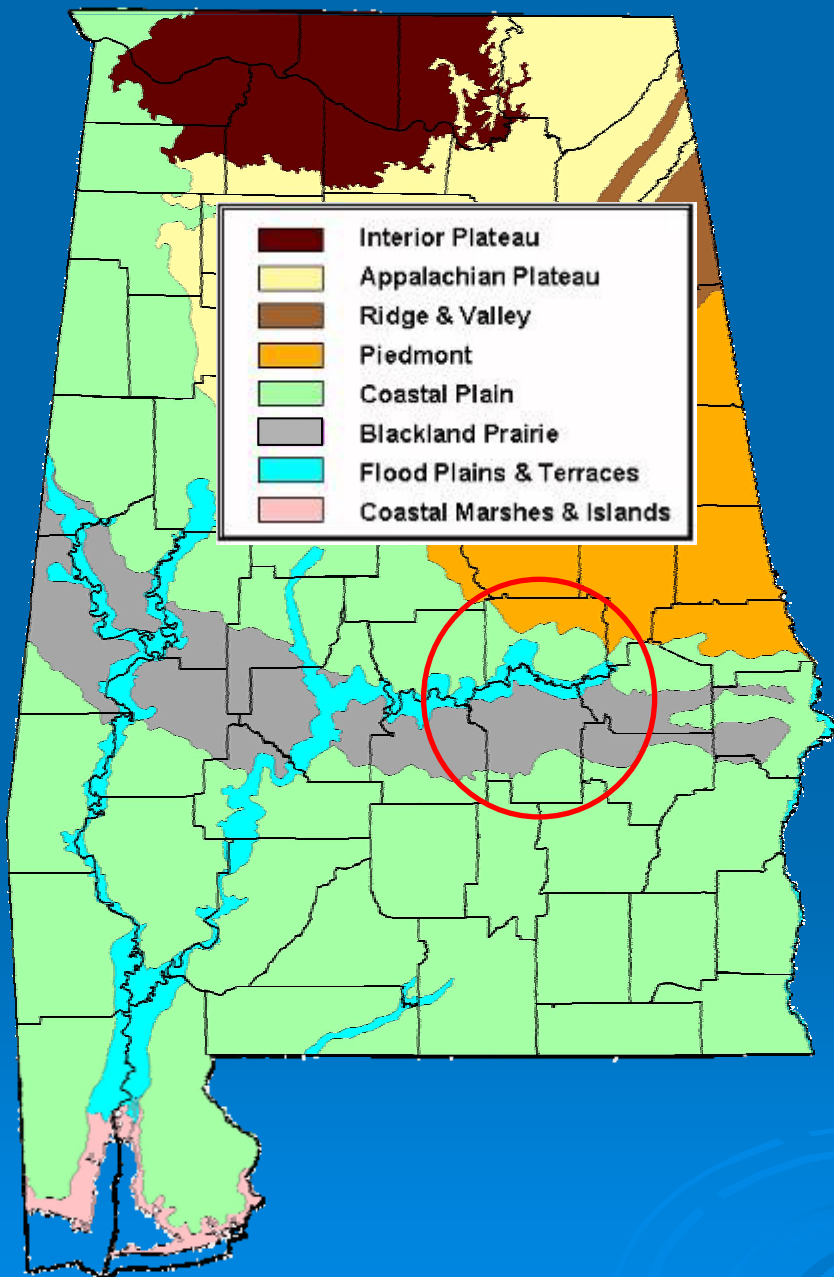


Dissolved Oxygen at site 07001003 in Tallapoosa County, AL
 Lake Martin (Tallapoosa Watershed) 81 samples
 Latitude: 32.843191 N, Longitude: -85.886966 W Hydrologic Unit Code (HUC11): 03150109180
 --- 5 ppm minimum Dissolved Oxygen required for Fish and Wildlife Classification

Data Credibility in the Lab



Data Credibility at the Watershed Level



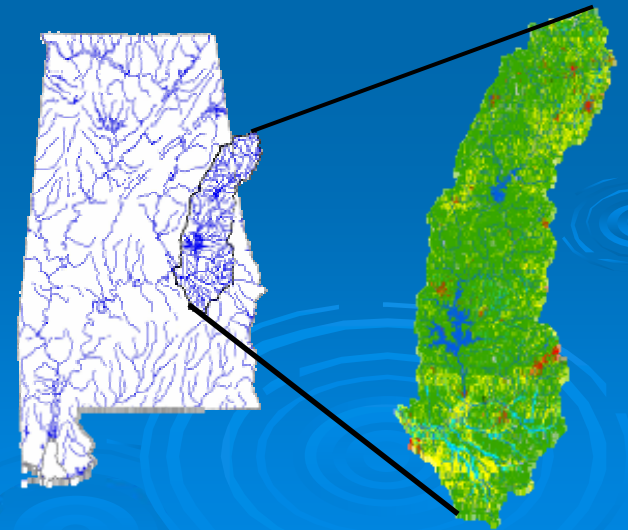
Tallapoosa Watershed Project

Tallapoosa Watershed Project

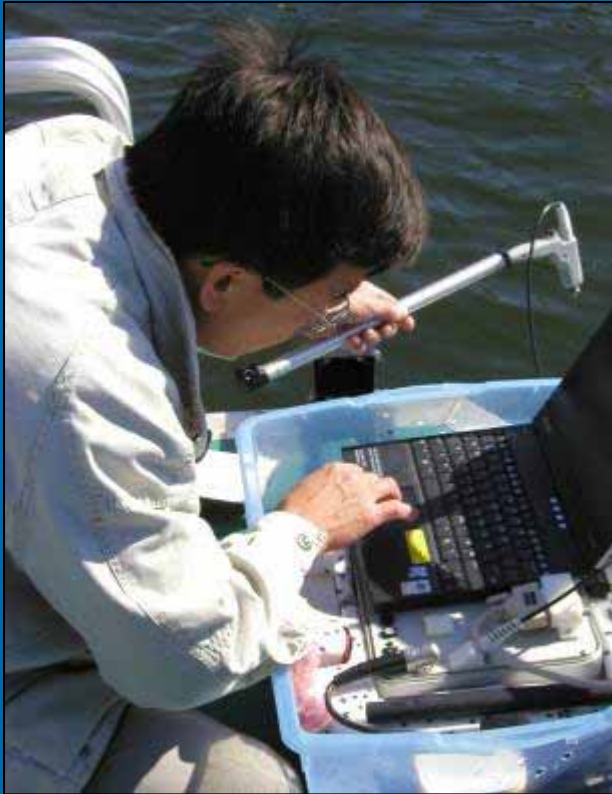


A Transferable Model of Stakeholder Partnerships for Addressing Nutrient Dynamics in Southeastern Watersheds

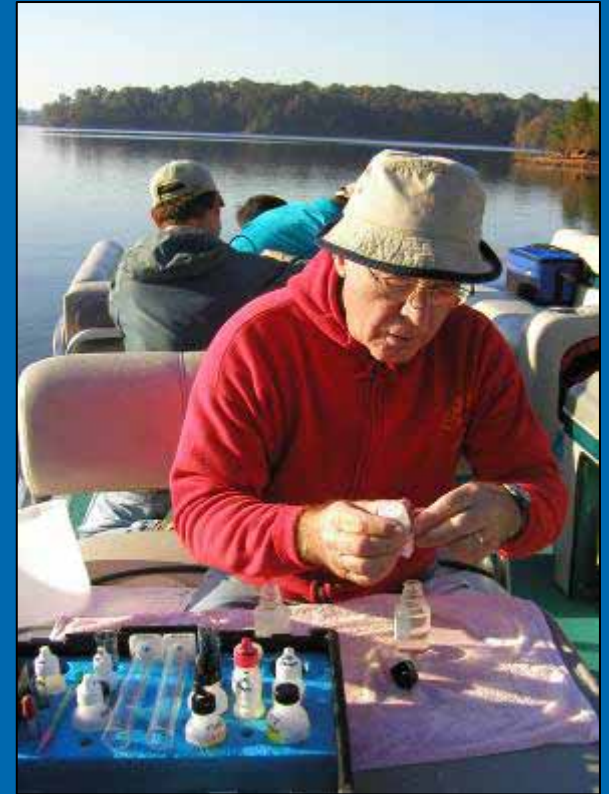
A USDA-CSREES funded 3-year Integrated Project



TWP Sampling



**High Tech
Alternative**



**Low Tech
Alternative**

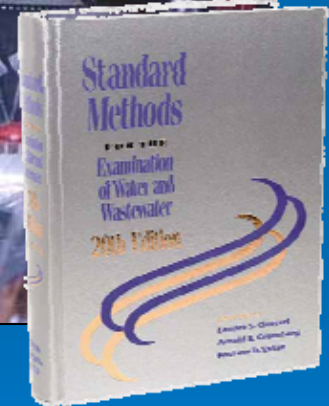
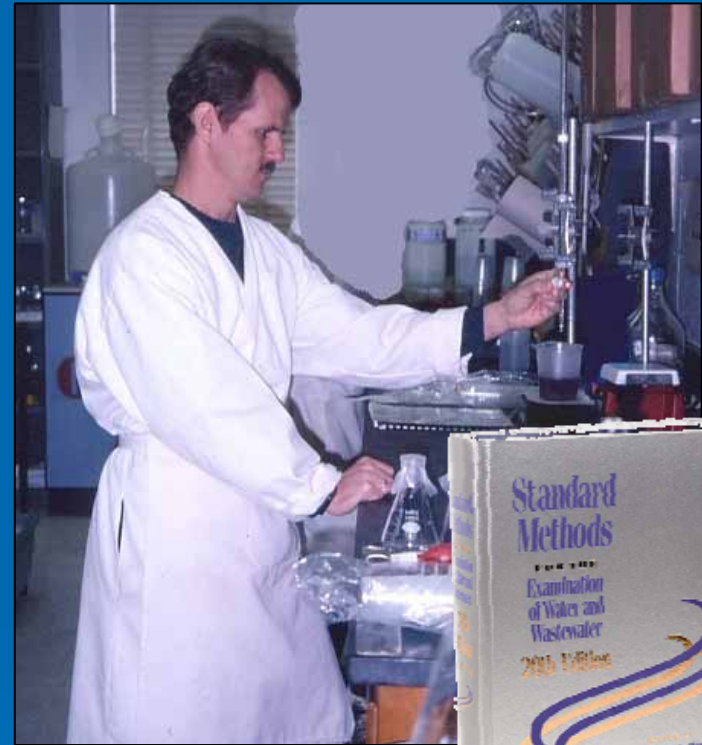


Standard Methods

Opportunity for Side-by-Side Data Comparison

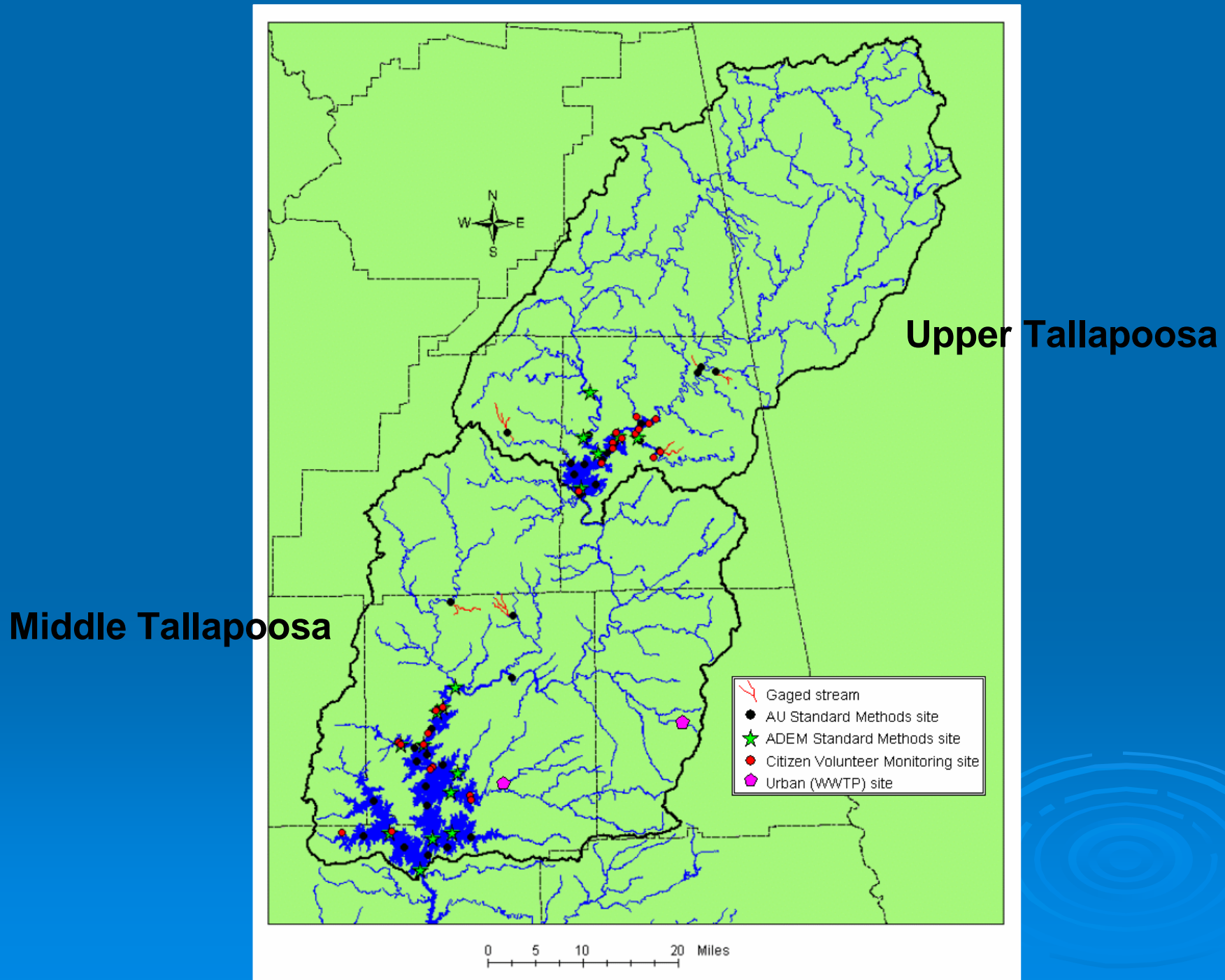


Citizen Volunteer Monitoring

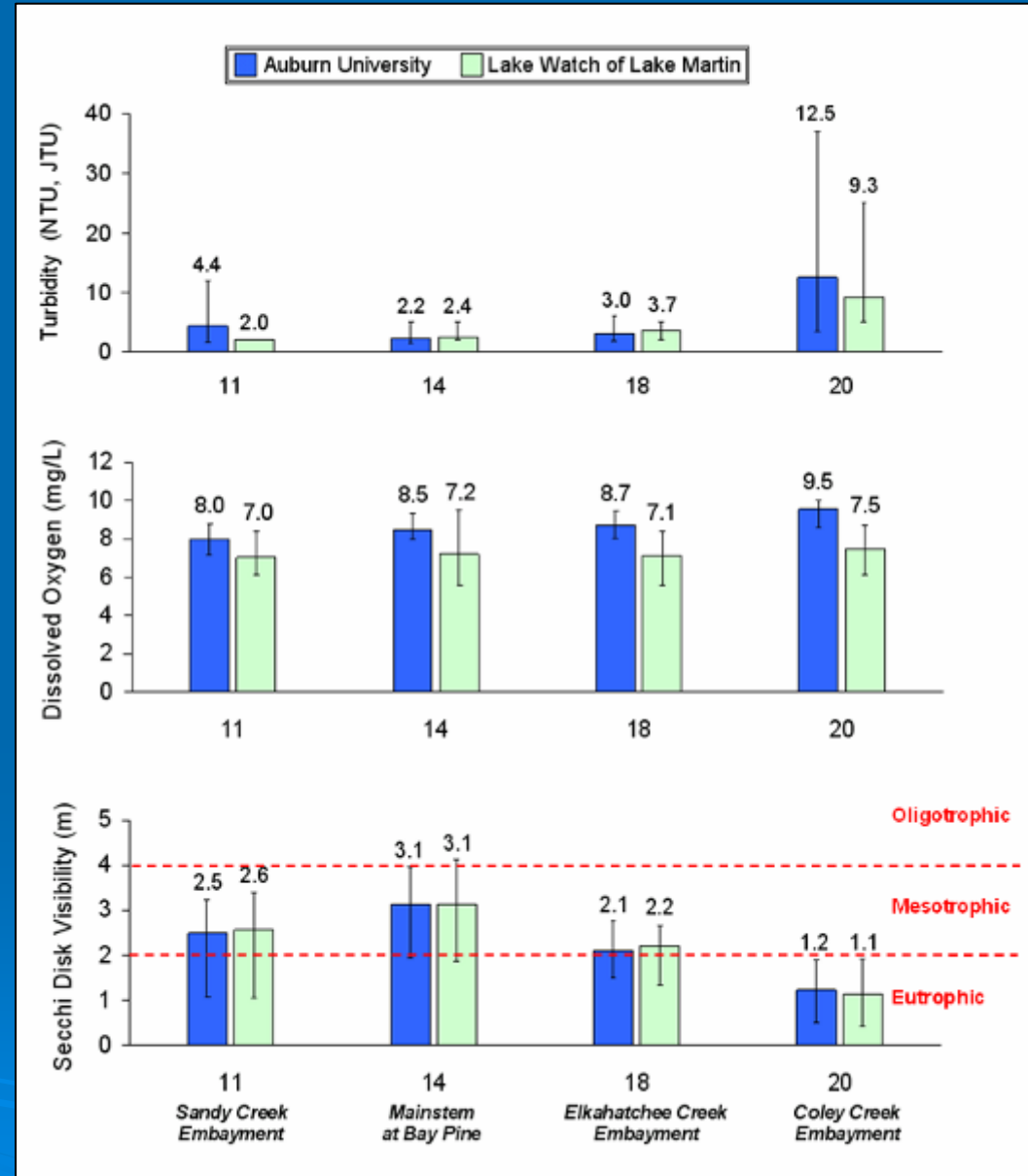
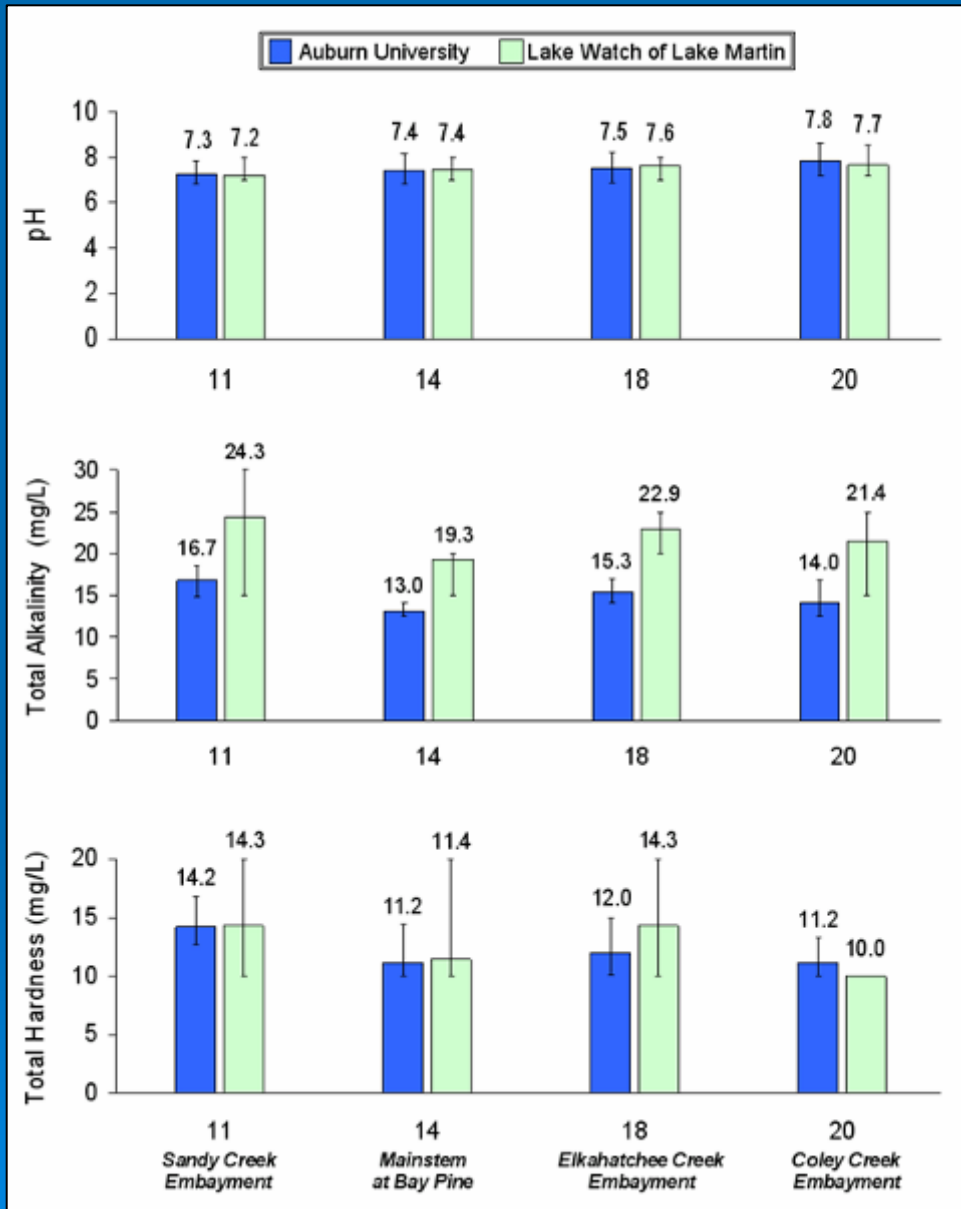


Standard Methods Monitoring

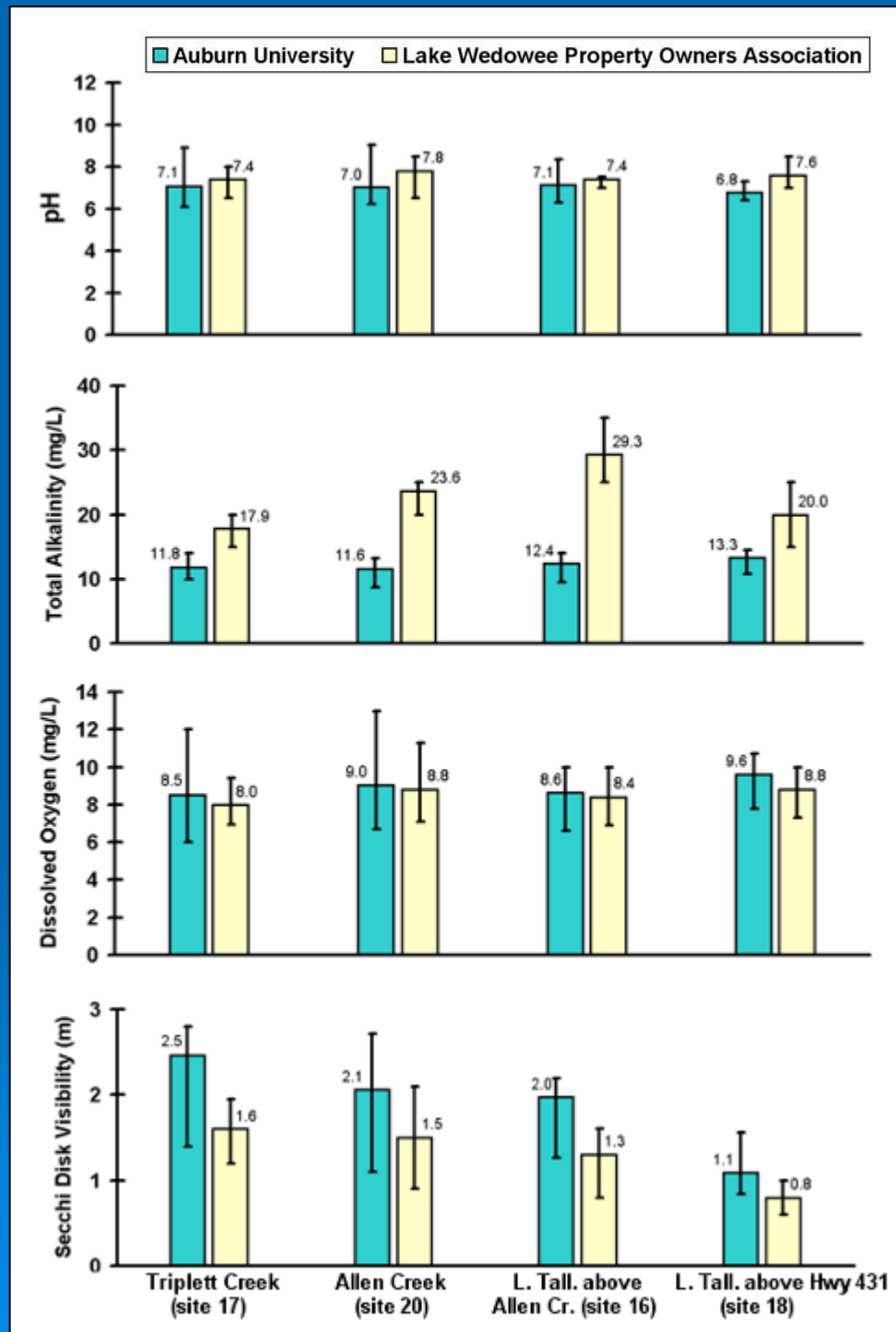
TWP Sample Sites



Side-by-Side Data – Lake Martin



Side-by-Side Data – Lake Wedowee



Side-by-Side Data Comparisons

- AU and AWW-certified Citizen monitoring
- Approx. same site, date and time
- 4 sample sites per lake on 2 lakes
- 40 side-by-side comparisons
- 14 measurements per comparison
- 560 total measurements (280 AU, 280 Citizen)

Results of Side-by-Side Data Comparisons

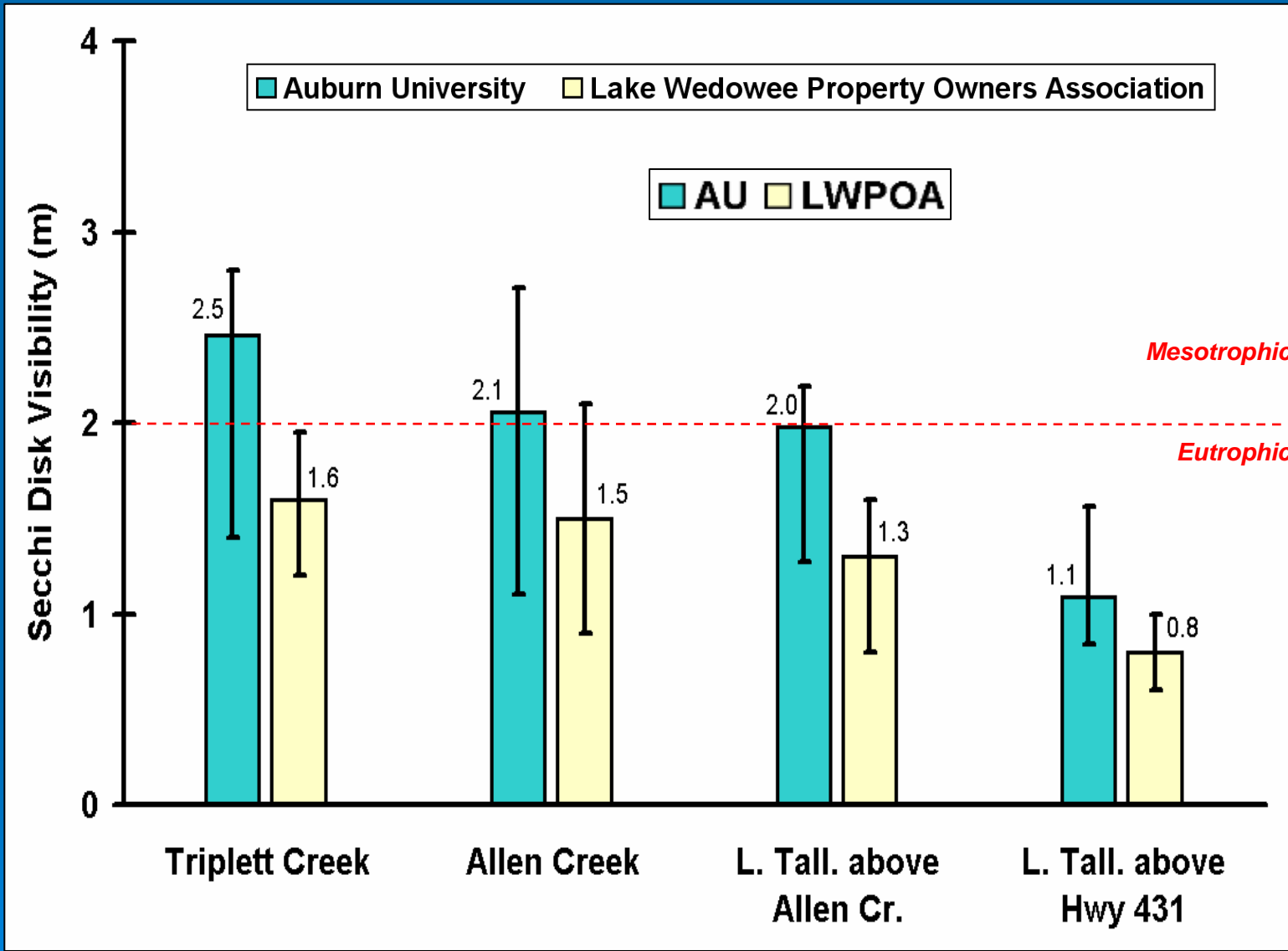
- 55% comparisons - not significantly different, $\alpha = 0.05$
- Differences found in:
 - Secchi Disk Visibility
 - Total Alkalinity
 - Dissolved Oxygen

What do Differences Mean in Basin Management?

Let's look at Secchi



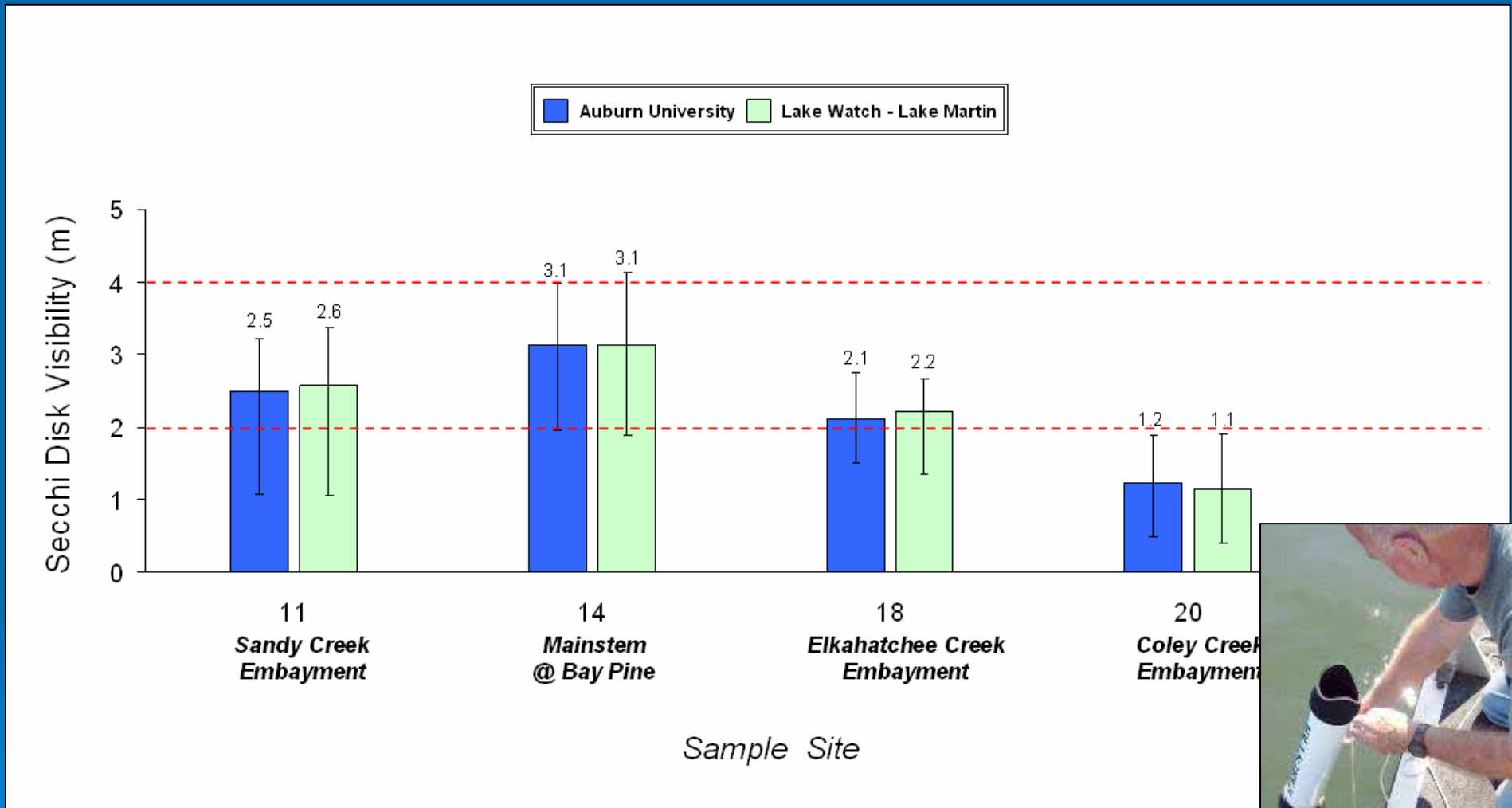
Secchi Disk Visibility - the "Glare" Effect



Secchi measured by Citizen Volunteers **NOT** using Scope

Average difference between AU reading and LWPOA reading was 0.59 meters. Bracket on bar is min and max, n=7 per bar.

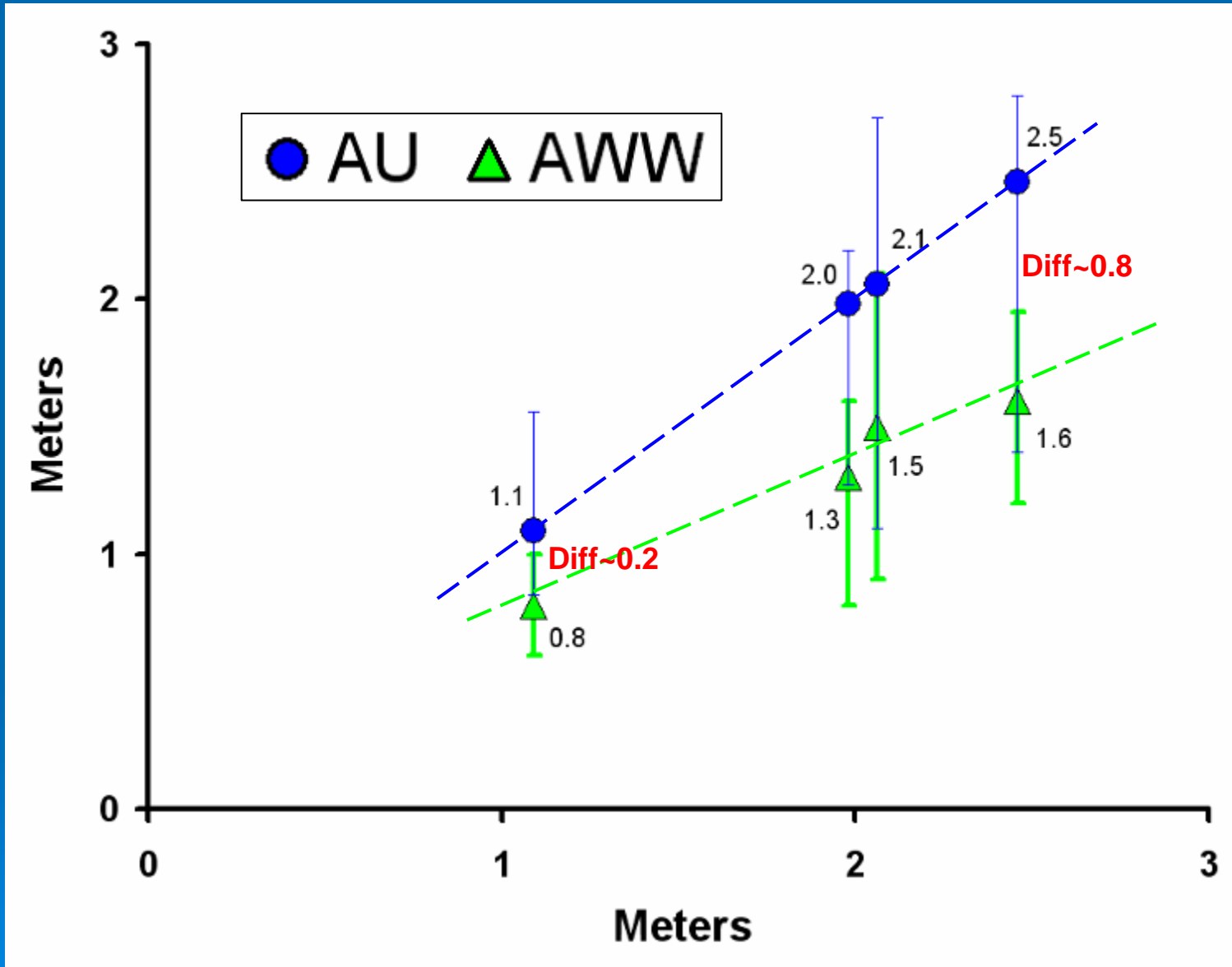
Trained Volunteers Do Great Work!

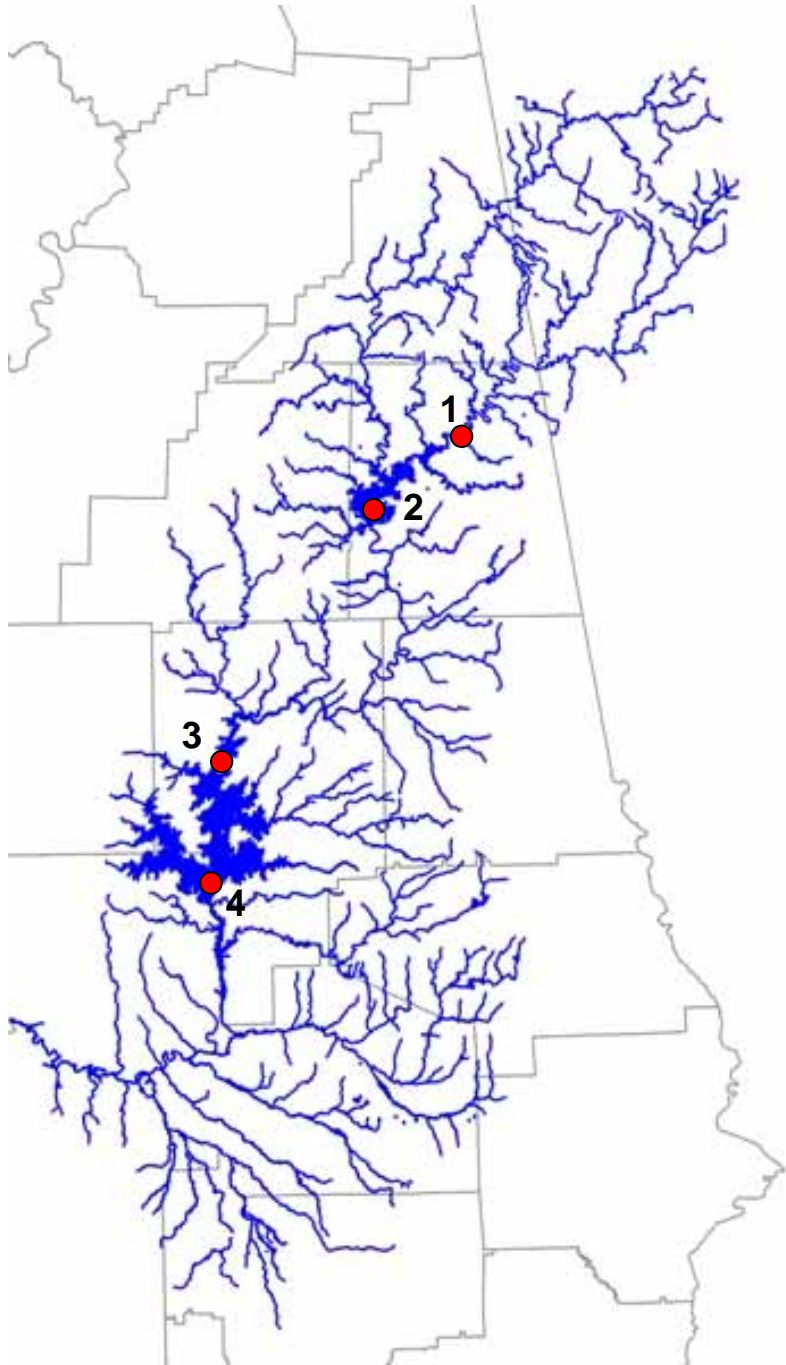


Secchi measured by Citizen Volunteers using Aqua-Scope

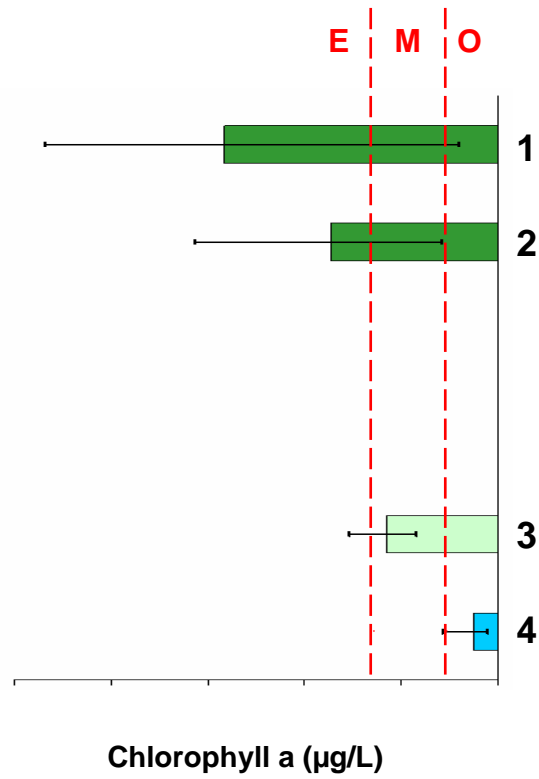


Secchi Disk Visibility - the "Scope" Effect

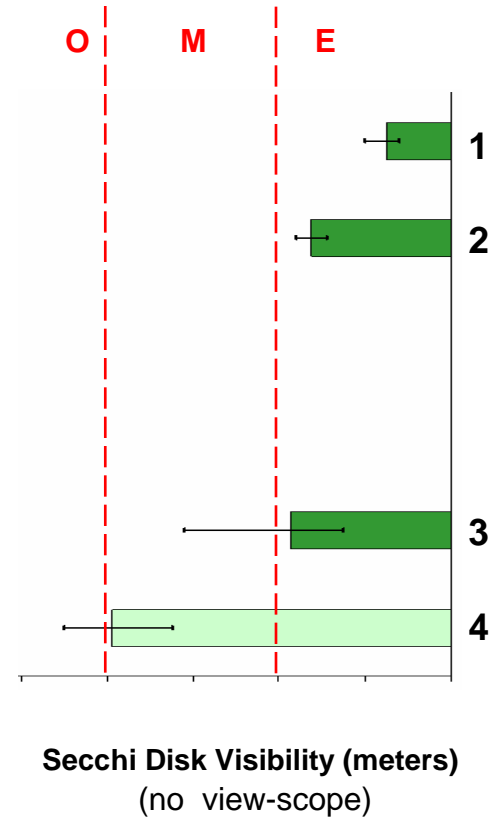




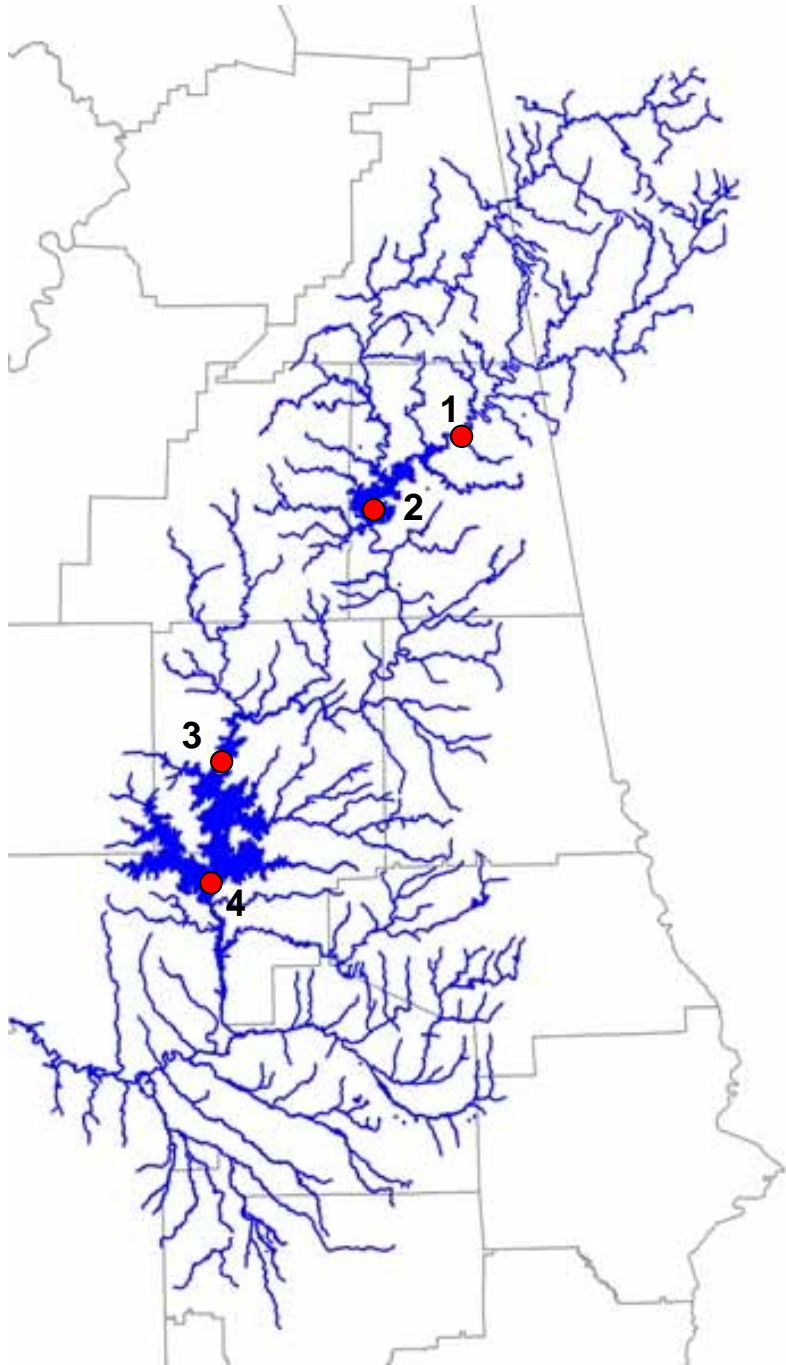
Agency Data



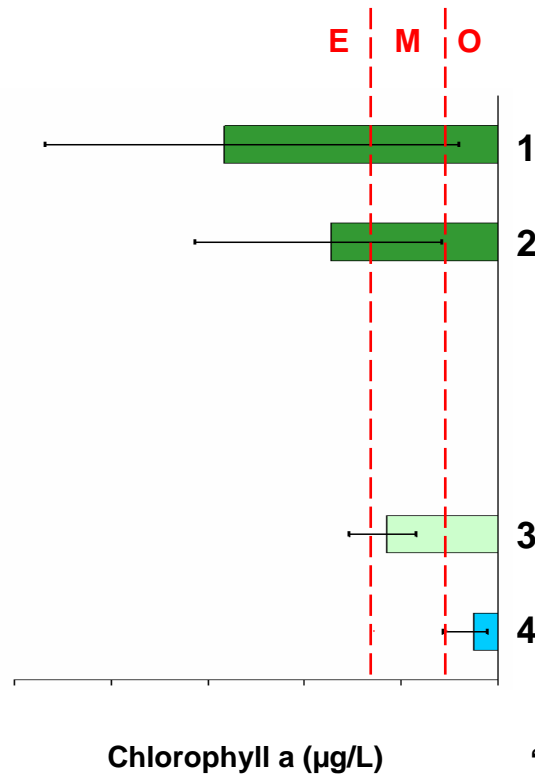
Citizen Data



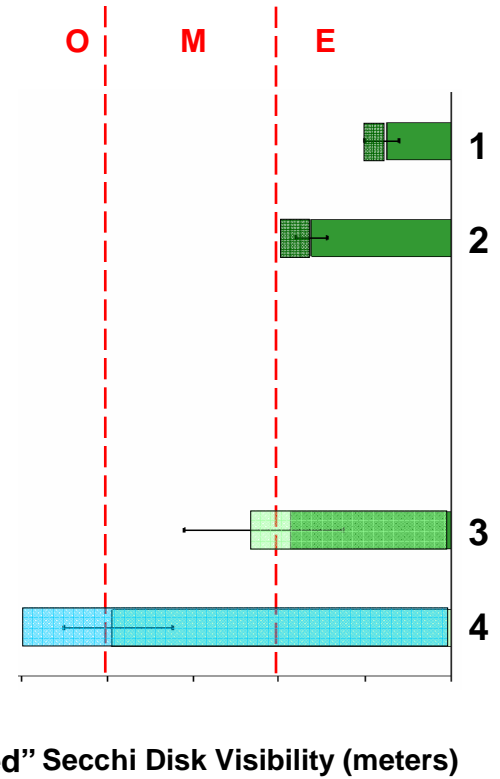
Trophic State: E = Eutrophic
M = Mesotrophic
O = Oligotrophic



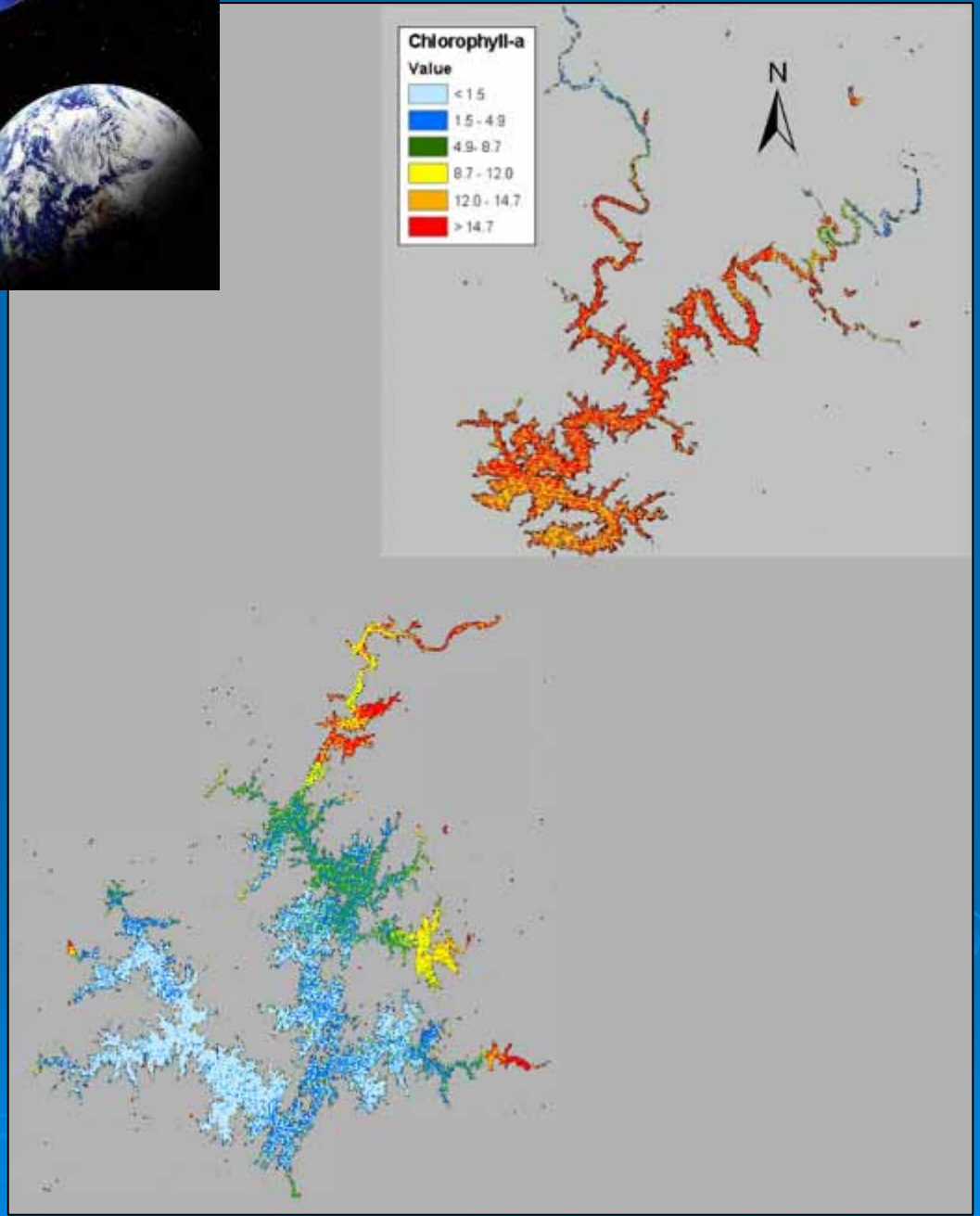
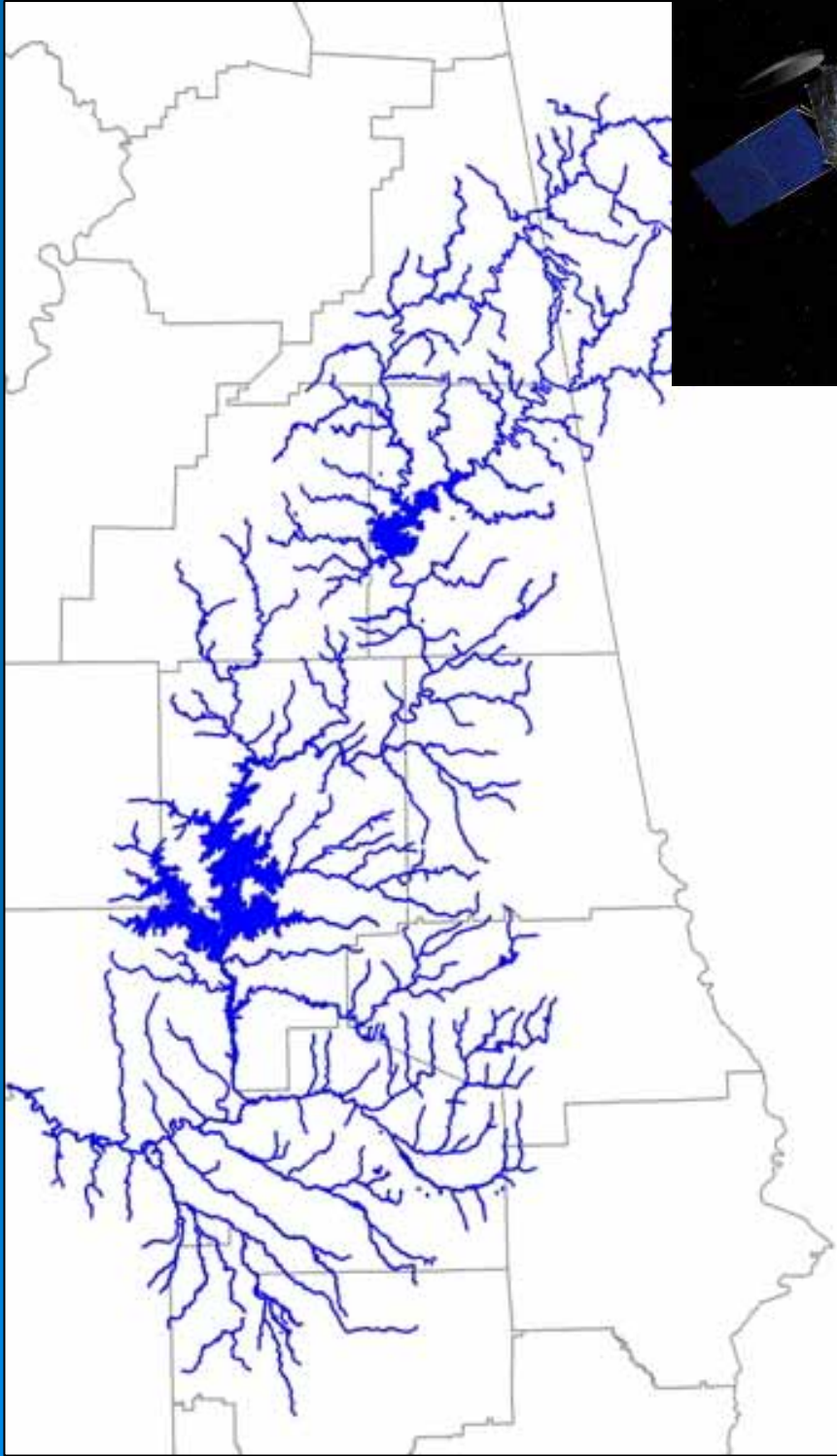
Agency Data



Citizen Data



Trophic State: E = Eutrophic
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Watershed Plans



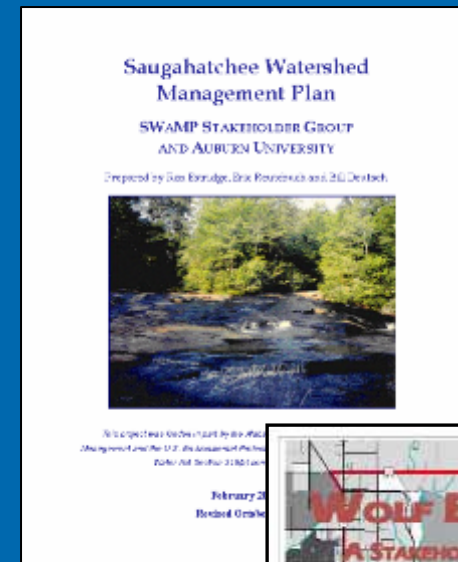
Alabama
CLEAN WATER
PARTNERSHIP

Working Together to Protect and Preserve Alabama's Water

The Alabama Clean Water Partnership was established to encourage environmental education, protection and restoration by bringing point source and non-point source interests together to solve water quality problems through non-regulatory means.

- EVENTS
- ABOUT
- LEARN
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- LINKS

CONTACT US
SITE MAP

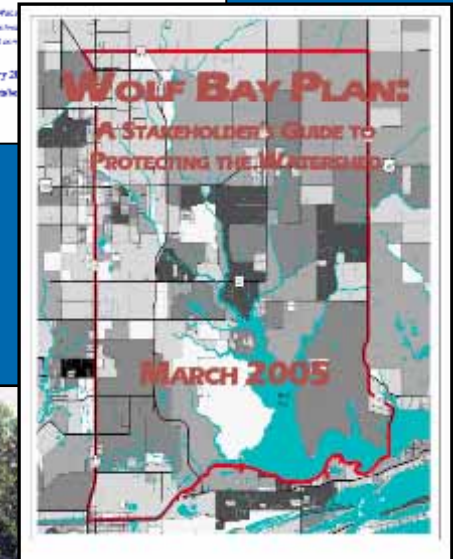


Saugahatchee Watershed Management Plan

SWAMP STAKEHOLDER GROUP AND AUBURN UNIVERSITY

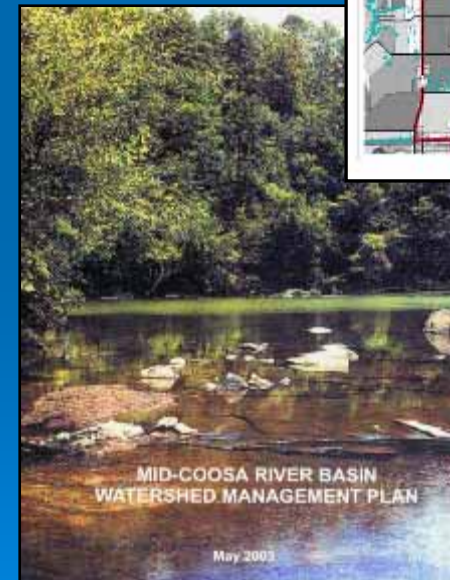
Prepared by Don Brantley, Eric Rousek and Bill Dentch

February 2005
Revised 04/05



WOLF BAY PLAN
A STAKEHOLDER'S GUIDE TO PROTECTING THE WATERSHED

MARCH 2005

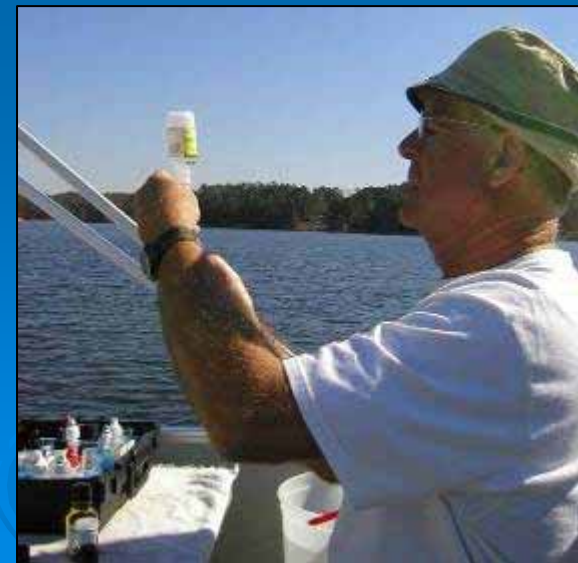
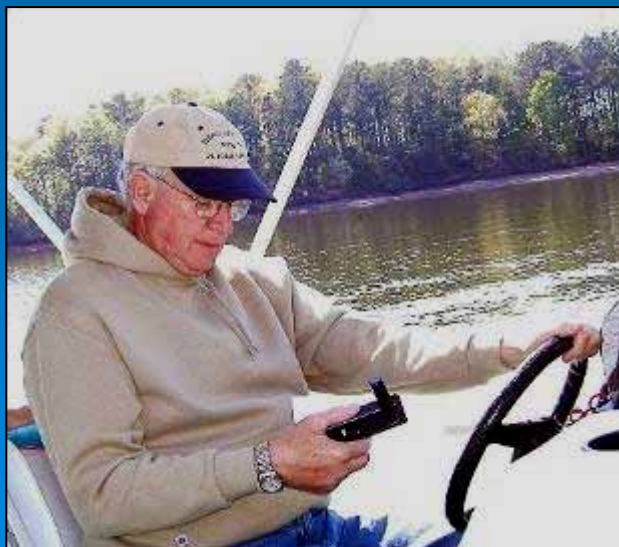


MID-COOSA RIVER BASIN
WATERSHED MANAGEMENT PLAN

May 2003

“citizen volunteer monitoring and assessments and public education and outreach are essential components of this Plan and may be the most effective management practices”

Thank You!



Thank You!



Applying knowledge to improve water quality

National Water Program

A Partnership of USDA CSREES & Land Grant Colleges and Universities

– Research, Education & Extension –

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[National Themes >](#)

National Facilitation

Extension Education

Integrated Projects

National Research Initiative

Funded Projects

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Online Resources

Home

search this website:



News & Highlights [\(more...\)](#)

2005 and 2006 [CSREES National Water Conference Proceedings](#) moved to the National Water Program Website!

[NEMO National Facilitation Project's Hub](#) → awarded the 2006 Outstanding Achievement Award by the Renewable Natural Resources Foundation.

CSREES National Integrated Water Quality Program highlighted on pages 7-8 of the [CSREES Administrator's Report to the Partnership](#) → (Summer 2006).

View the [Water Update](#) national newsletter.

Upcoming Events [\(more...\)](#)

[August 28-31](#) →
International Symposium Wetlands;
Traverse, MI

[September 5-8](#) →
2006 Streams Conference: Floodplains,
Riparian Zones & Buffer Strips;
Columbus, OH


[September 10-13](#) →
Conference on HydroScience and
Engineering; Philadelphia, PA

CSREES NATIONAL WATER CONFERENCE:
Jan 28 - Feb 1, 2007; Savannah, GA
[Conference Website](#) →
[Abstracts](#) → for oral presentations due
Sept 15

Take a Closer Look at www.twp.auburn.edu

Address <http://www.twp.auburn.edu/>

Tallapoosa Watershed Project



[The Project](#) [Research](#) [Education](#) [Extension](#) [Events](#) [Publications](#)

This project is funded by the *Cooperative State Research Education and Extension System (CSREES)* of the US Department of Agriculture

[USDA-CSREES Calendar](#) / This calendar highlights national-scale events that are related to the efforts of the CSREES National Water Program

[Where is the Tallapoosa Watershed?](#) [Learn more about it](#)

Presentations at the *2006 Alabama Water Resources Conference*:

- [Living Streams, an Integrated Aquatic Science Curriculum for Alabama Youth \(4.9 MB\)](#)
- [Influence of Landscape Characteristics on Nutrient and Sediment Loading in Piedmont Streams of Alabama \(2.7 MB\)](#)

Second Annual State of Our Watershed Conference - The Tallapoosa River Basin
April 2006 Sponsored by the Tallapoosa Watershed



Fish Communities of streams in the Tallapoosa River Basin

2004 and 2005 stream and river sample sites

Fish found in small streams of the Tallapoosa River Basin:
1-Alabama Hogswallow, 2-Mottled Sculpin, 3-Blacktail Shiner,
4-Black Madtom, 5-Tallapoosa Darter.

What is this? ----->

a. snake, b. eel, c. lamprey, d. Loch Ness monster, **ANSWER!**



A Transferable Model of Stakeholder Partnerships for Addressing Nutrient Dynamics in Southeastern Watersheds

For more information about other CSREES projects and Water Quality in Alabama click on the map

[WWW / QIWI](#)

A scenic photograph of a sunset over a body of water. The sun is a bright orange orb in the upper left, with its light reflecting as a shimmering path on the water's surface. The sky is a soft gradient of orange and yellow. In the foreground, the dark silhouette of a tree branch hangs from the top left. In the middle ground, a small boat is visible on the water to the right, and a larger boat with a canopy is further right. The background shows a dark line of trees on the far shore.

Contact us at:

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