Alabama Water Watch –

rising to evolving water resource management challenges

Eric Reutebuch

Alabama Water Resources Conference
Orange Beach, Alabama
September 10-11, 2015

AUBURN UNIVERSITY
ALABAMA AGRICULTURAL EXPERIMENT STATION
WATER RESOURCES CENTER

Alabama Water Watch

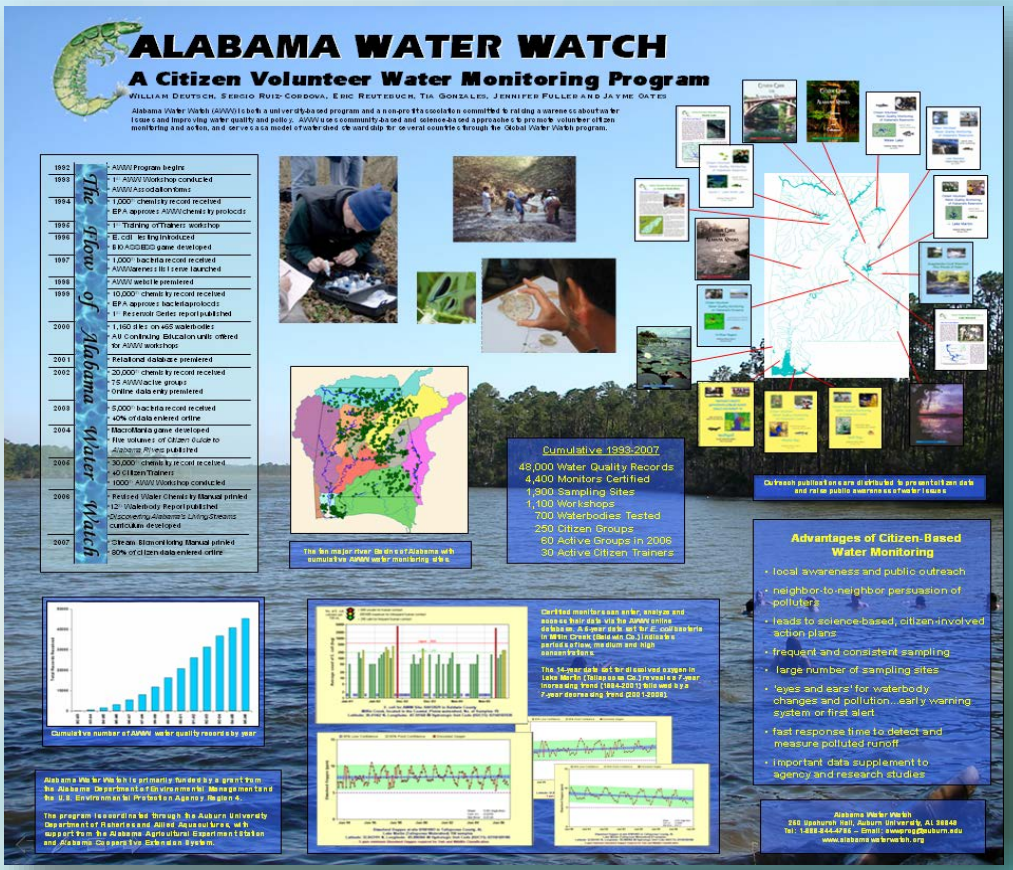
extension
ALABAMA A&M & AUBURN UNIVERSITIES

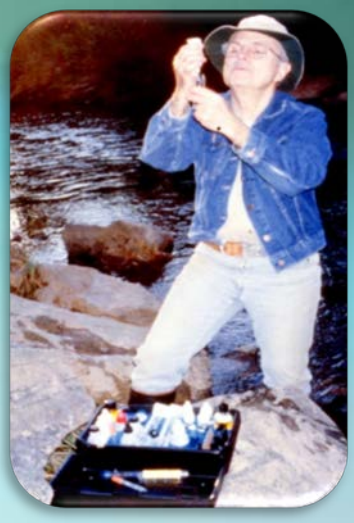
Alabama Water Watch –

rising to evolving water resource management challenges

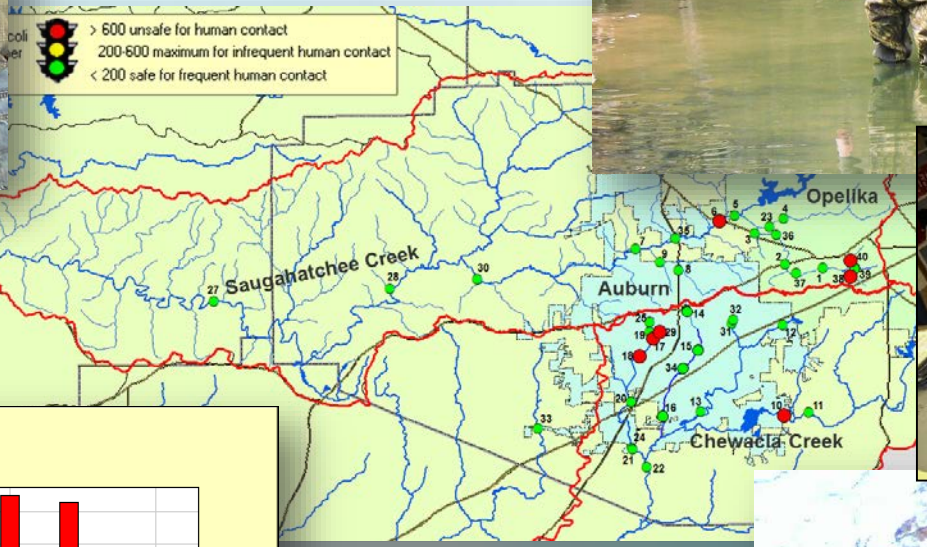
- Overview of the AWW Program
- Existing AWW tools for volunteer monitors
- New tools on the horizon
- Come join us!

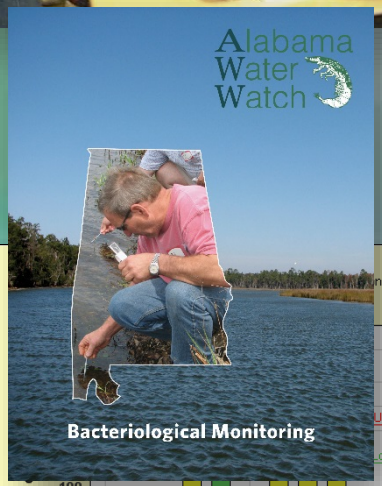
What is Alabama Water Watch ?

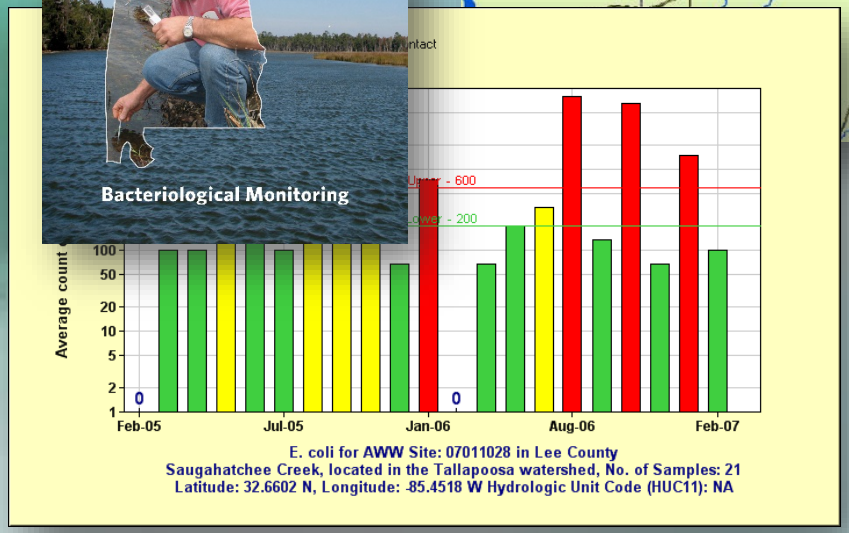


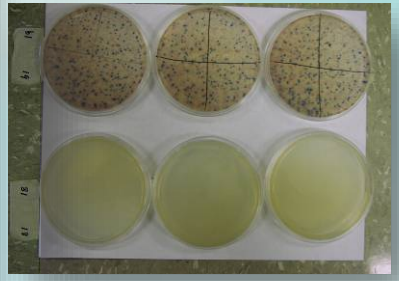


Community-based Watershed Monitoring & Stewardship









Training & Certification

Monitoring, Data Reporting, & Stewardship

Alabama Water Watch

Community-Based Watershed Stewardship through Citizen Volunteer Monitoring of Alabama's Lakes, Streams and Coasts

Alabama Water Watch

From Science-Based Data to Community Action

Get Certified

Collect water data with hundreds of other monitors using simple and accurate methods backed by U.S. EPA-approved quality assurance plans.

Put Your Data into Action

Work together to use water quality information to protect and restore waterbodies, raise awareness of watershed issues, improve environmental education in classrooms, and advocate improved water policies.

Share Your Experience

Tell others about the challenges and successes in your watershed to inform and motivate monitors, policy makers and the general public. Statewide success stories are featured on the AWW website.

Support AWW

Contribute your experiences, services, membership dues and gifts to ensure that AWW will continue to educate, train and empower citizens through community-based watershed stewardship for years to come.

Water Chemistry Monitoring

Conduct simple chemistry tests, such as dissolved oxygen and pH, to assess pollution.

Bacteriological Monitoring

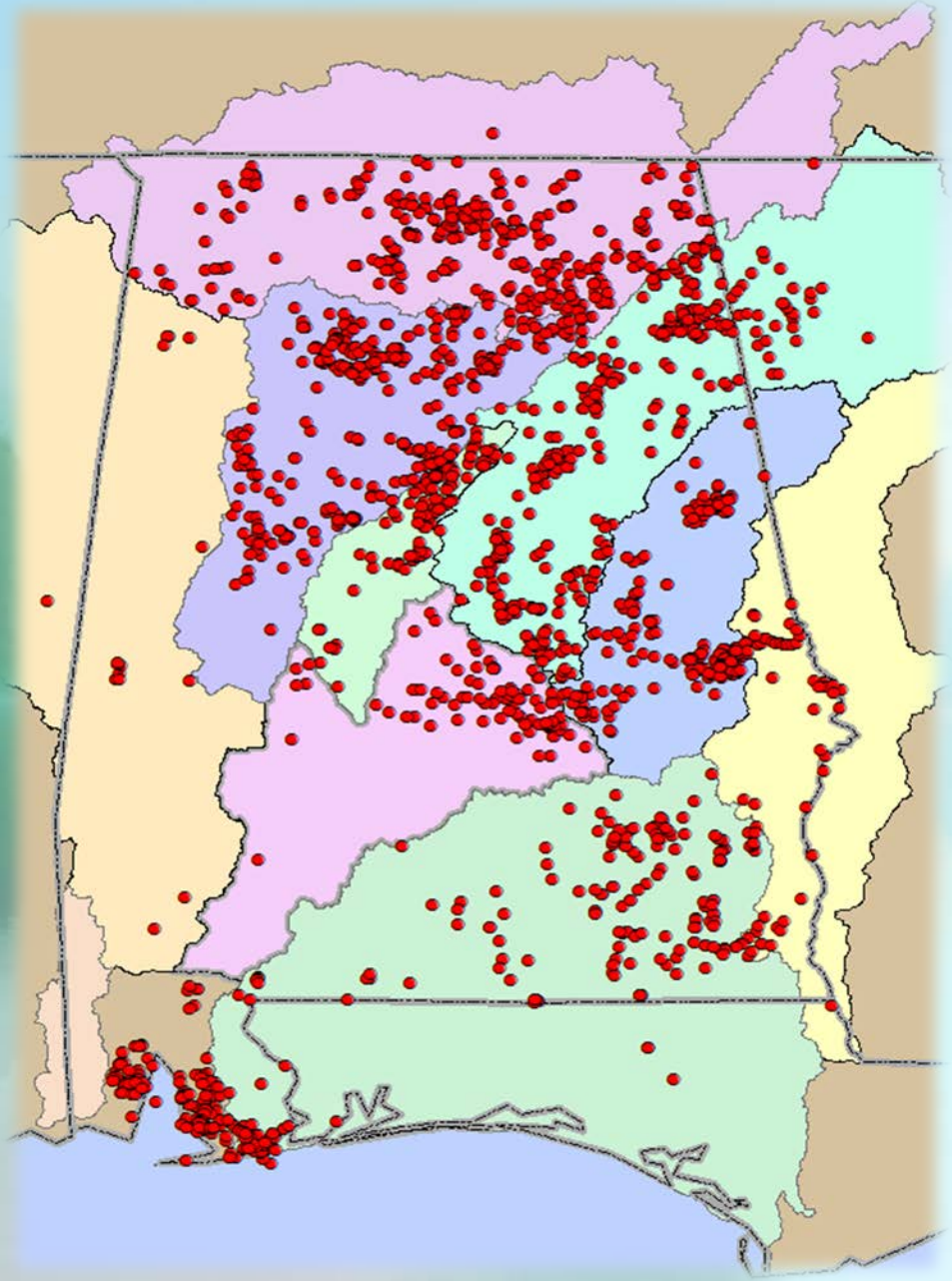
Test for waterborne pathogens, including *E. coli* and other coliform bacteria.

Stream Biomonitoring

Survey macroinvertebrates or "aquatic bugs" to determine stream health.

Humble Beginnings

AWW in 2015



Cumulative 1993 – 2015 (cao 8/2015)

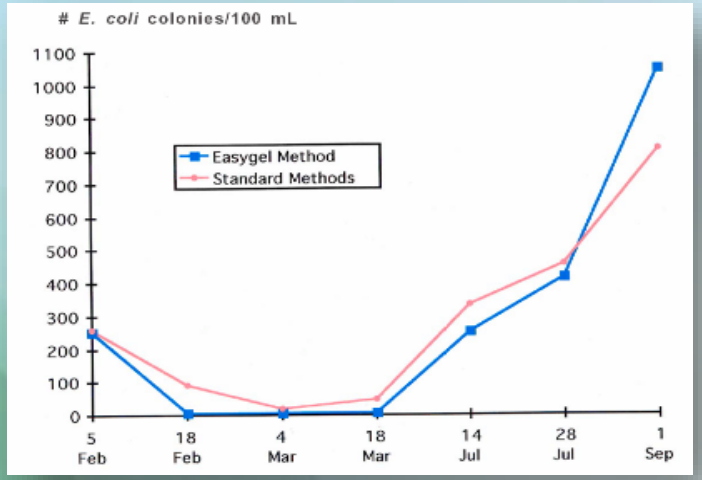
- 80,990 Water Quality Records
- 6,760 Certified Monitors
- 2,300 Sites
- 289 Citizen Groups
- 40 Active Citizen Trainers
- 1,945 Workshops
  (water chemistry monitoring, bacteriological monitoring , stream biomonitoring)

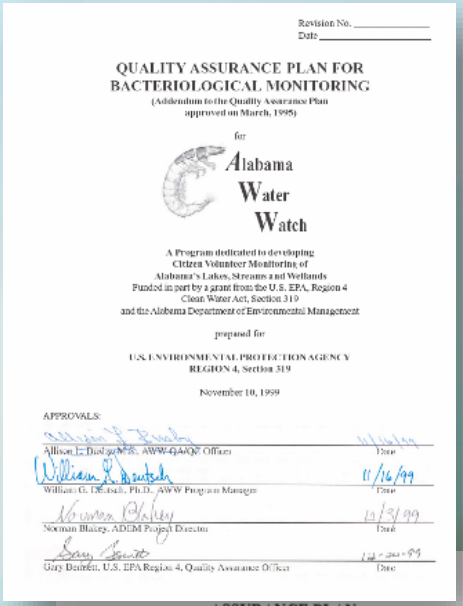
www.alabamawaterwatch.org

Emphasis on Science-based Information

AWW's EPA-Approved Monitoring Protocols

Bacteriological





Revision No. _____
Date _____

QUALITY ASSURANCE PLAN FOR
BACTERIOLOGICAL MONITORING
(Addendum to the Quality Assurance Plan approved on March, 1995)

for

Alabama Water Watch

A Program dedicated to developing
Citizen Volunteer Monitoring of
Alabama's Lakes, Streams and Wetlands
Funded in part by a grant from the U.S. EPA, Region 4
Clean Water Act, Section 319
and the Alabama Department of Environmental Management

prepared for

U.S. ENVIRONMENTAL PROTECTION AGENCY
REGION 4, Section 319

November 10, 1999

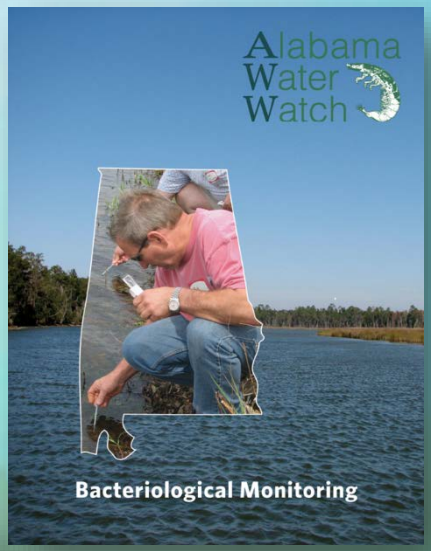
APPROVALS:

Allison L. Dial, U.S. EPA, QA/QC Officer — Date

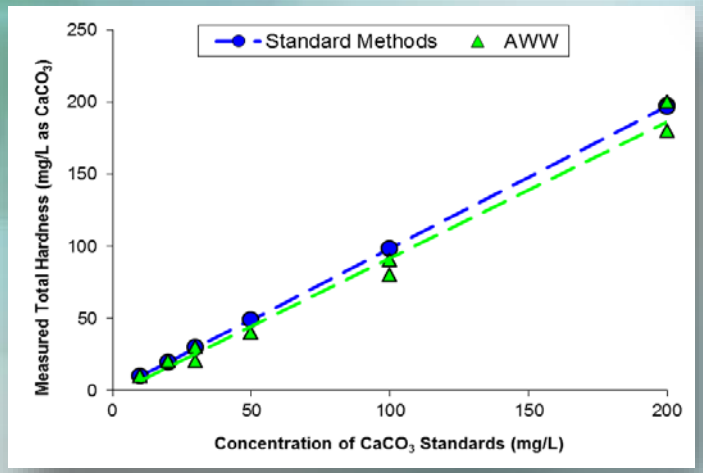
William G. Deutsch, Ph.D., AWW Program Manager — 11/16/99

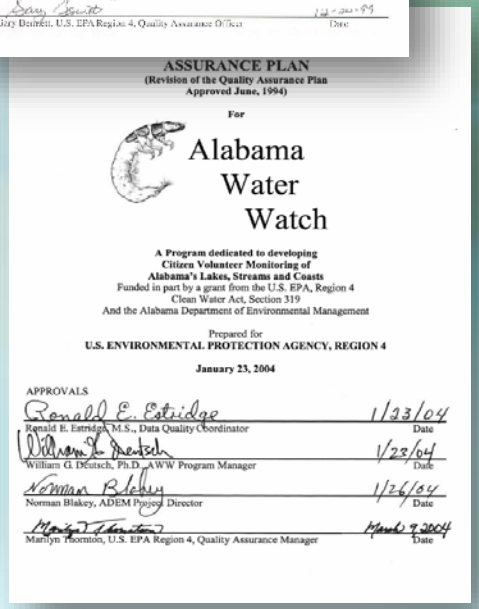
Norman Blakey, ADEM Project Director — 12/3/99

Gary Bantle, U.S. EPA Region 4, Quality Assurance Officer — 12-20-99



Water Chemistry





ASSURANCE PLAN
(Revision of the Quality Assurance Plan
Approved June, 1994)

For

Alabama Water Watch

A Program dedicated to developing
Citizen Volunteer Monitoring of
Alabama's Lakes, Streams and Coasts
Funded in part by a grant from the U.S. EPA, Region 4
Clean Water Act, Section 319
And the Alabama Department of Environmental Management

Prepared for
U.S. ENVIRONMENTAL PROTECTION AGENCY, REGION 4

January 23, 2004

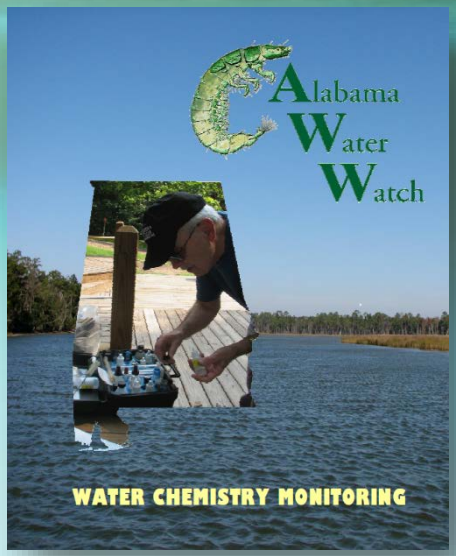
APPROVALS

Ronald E. Estridge — 1/23/04
Ronald E. Estridge, M.S., Data Quality Coordinator — Date

William G. Deutsch, Ph.D., AWW Program Manager — 1/23/04 — Date

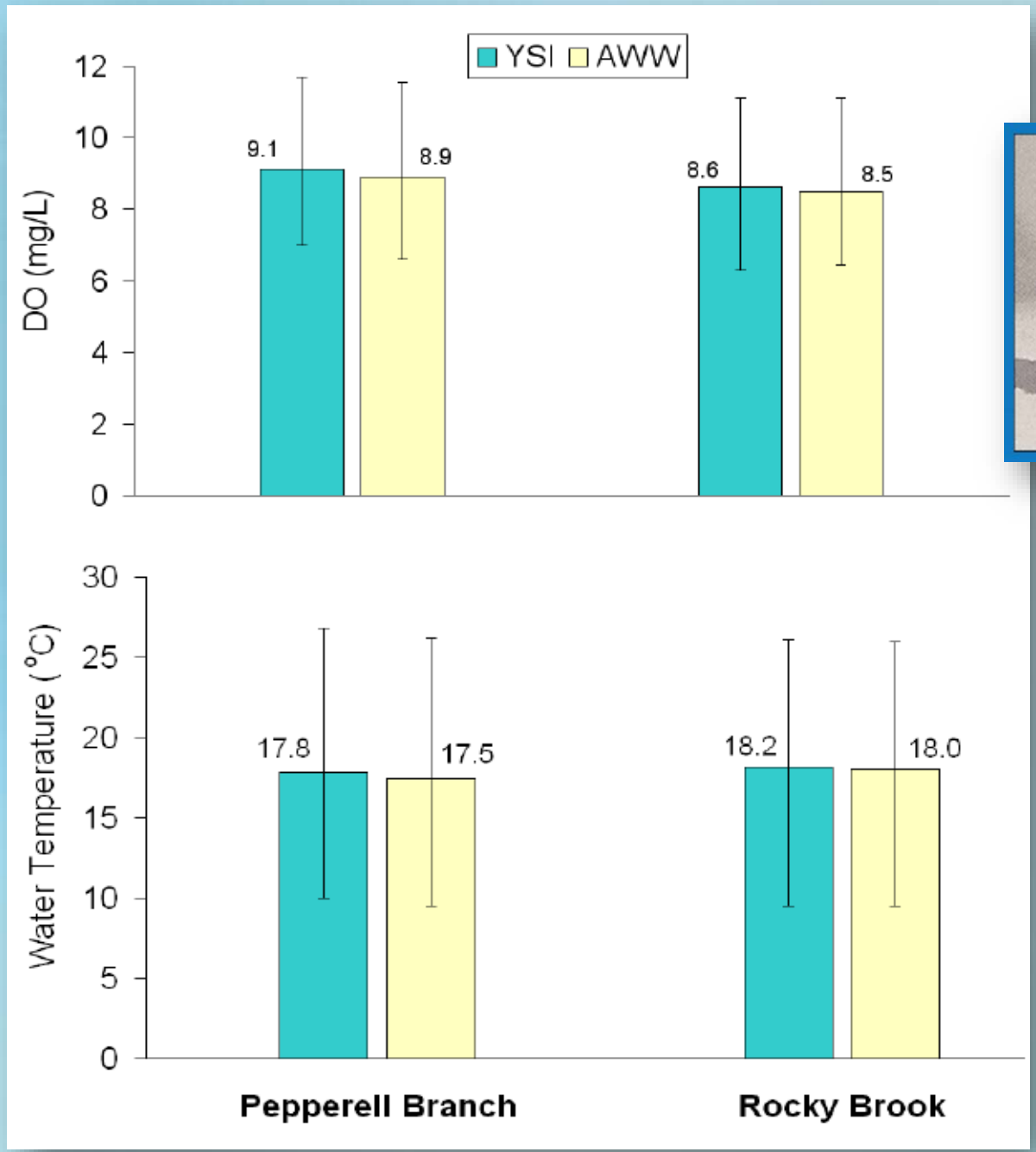
Norman Blakey, ADEM Project Director — 1/26/04 — Date

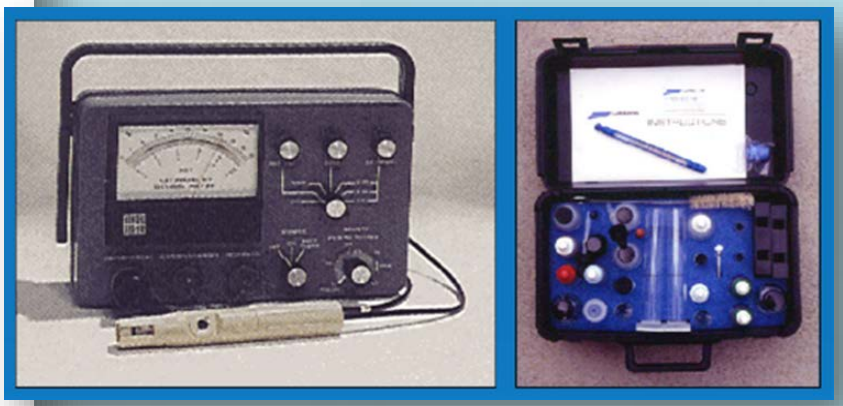
Marilyn Thornton, U.S. EPA Region 4, Quality Assurance Manager — March 9 2004 — Date

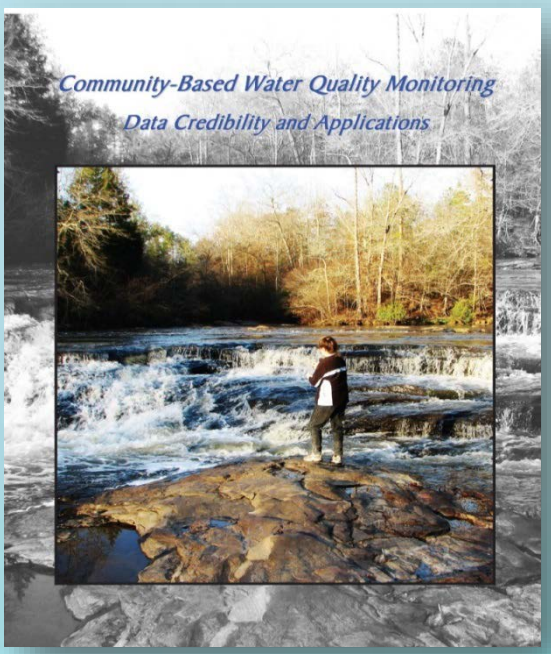


www.alabamawaterwatch.org/resources/publications.html

Data Credibility







www.alabamawaterwatch.org/resources/publications.html

Tools in the AWW Toolbox

- Website
- Training in water monitoring
- Web-based water data tools
- Outreach tools

Gateway to AWW Tools

www.alabamawaterwatch.org

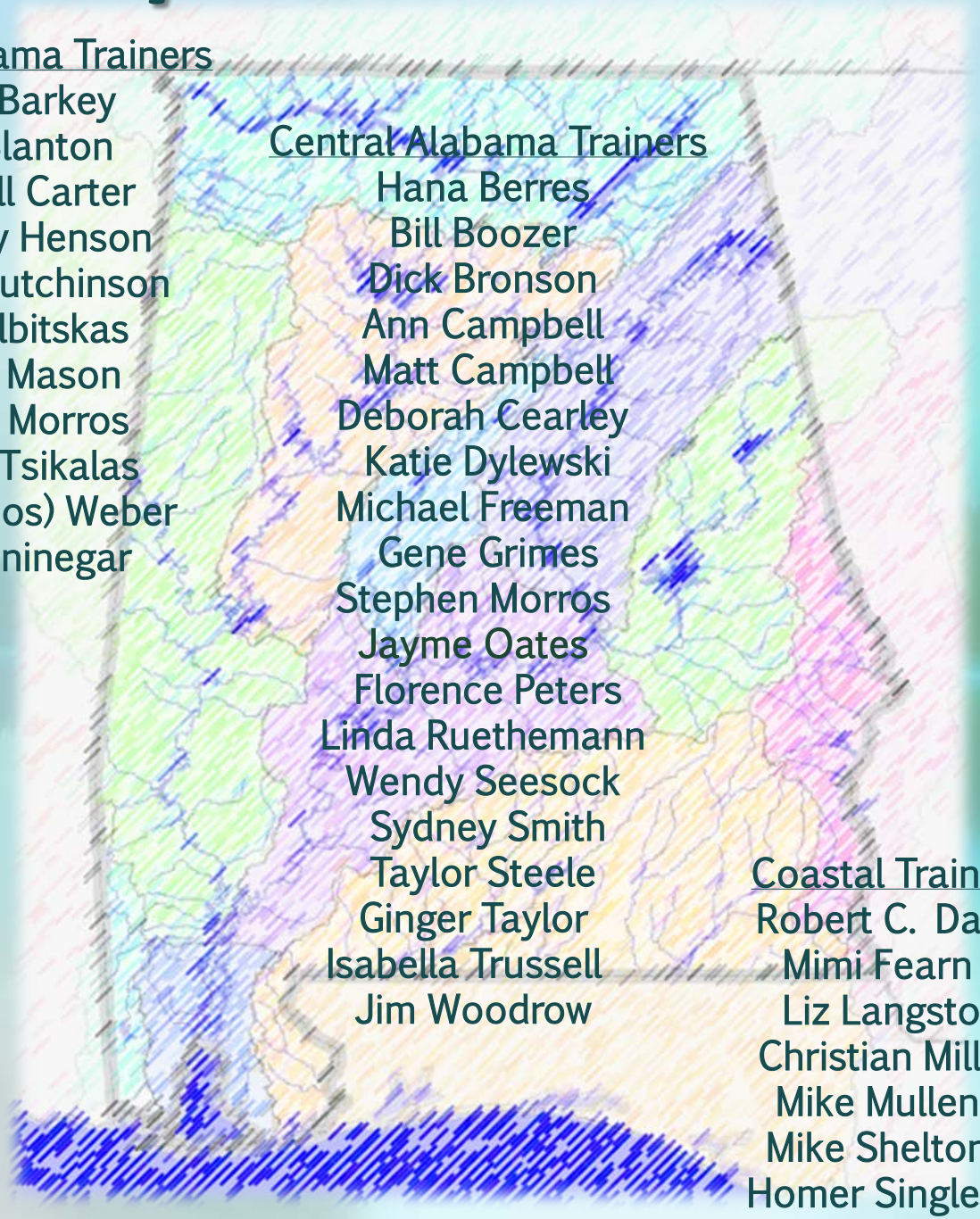
Tools in the AWW Toolbox

Water Chemistry Monitoring

Bacteriological Monitoring

Stream Biomonitoring

The Sharpest Tools in the Shed:



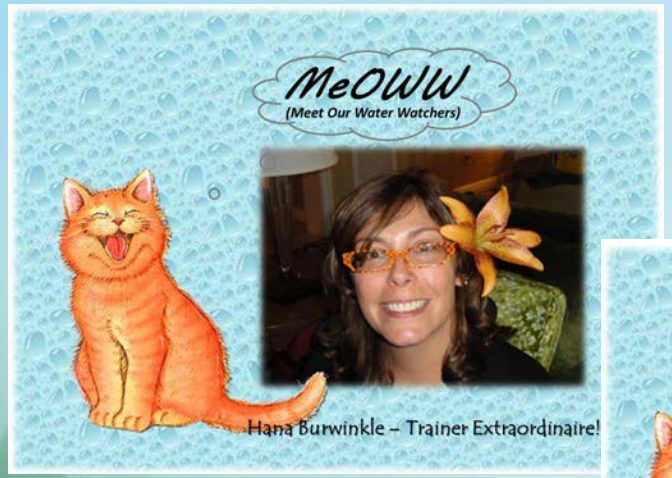
North Alabama Trainers
Larry Barkey
Chip Blanton
Marshall Carter
Whitney Henson
Francine Hutchinson
John Kulbitskas
James Mason
Stephen Morros
Stephen Tsikalas
Susan (Soos) Weber
Lynn Weninegar

Central Alabama Trainers
Hana Berres
Bill Boozer
Dick Bronson
Ann Campbell
Matt Campbell
Deborah Cearley
Katie Dylewski
Michael Freeman
Gene Grimes
Stephen Morros
Jayme Oates
Florence Peters
Linda Ruethemann
Wendy Seesock
Sydney Smith
Taylor Steele
Ginger Taylor
Isabella Trussell
Jim Woodrow

Statewide Trainers
Bill Deutsch
Mona Dominguez
Rita Grub
Patti Hurley
Eric Reutebuch
Sergio Ruiz Cordova

Coastal Trainers
Robert C. Davis
Mimi Fearn
Liz Langston
Christian Miller
Mike Mullen
Mike Shelton
Homer Singleton

MeOWW!

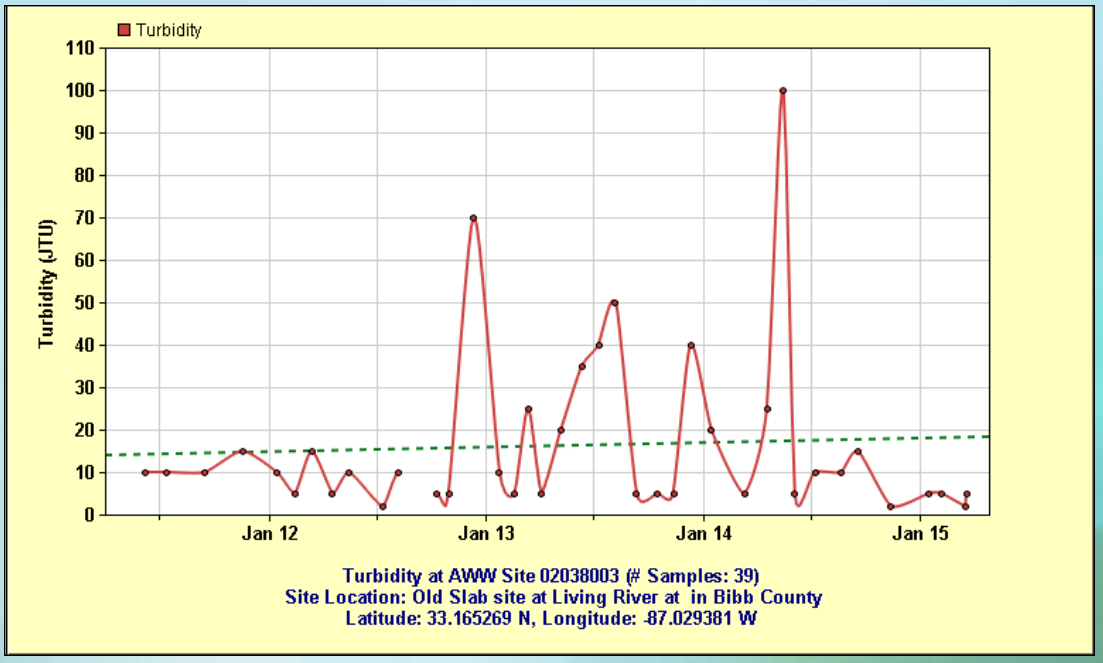

MeOWW
(Meet Our Water Watchers)
Hana Burwinkle – Trainer Extraordinaire!

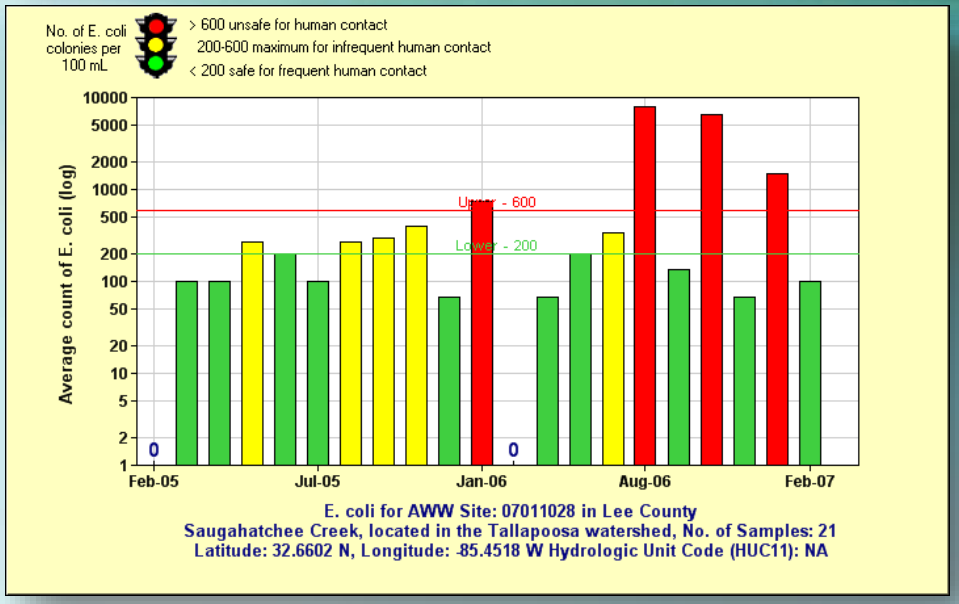

MeOWW
(Meet Our Water Watchers)
Francine Hutchinson– Trainer Extraord


MeOWW
(Meet Our Water Watchers)
Taylor Steele – Trainer Extraordinaire!

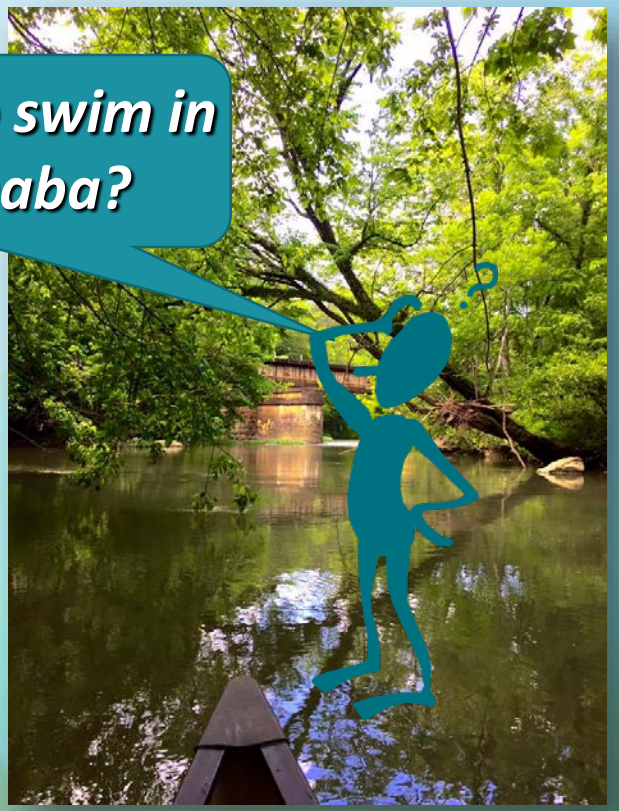

(Meet Our Water Watchers)
This is Mike
Mike Shelton– Trainer Extraordinaire!

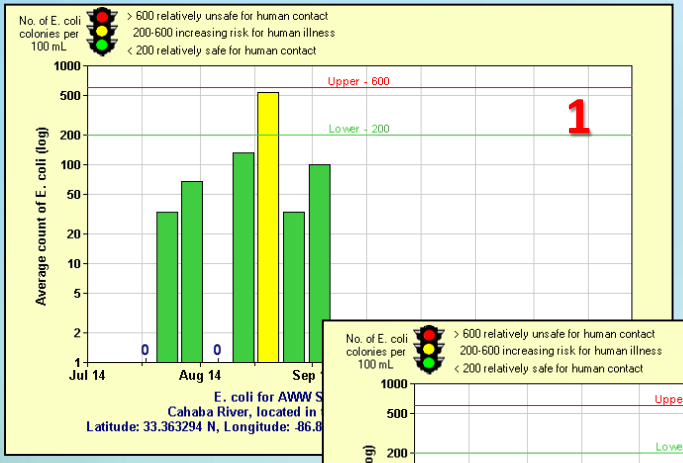
Data Visualization Tools

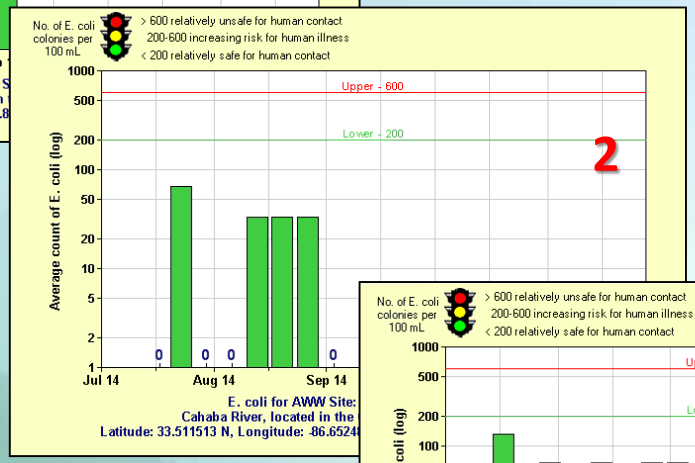


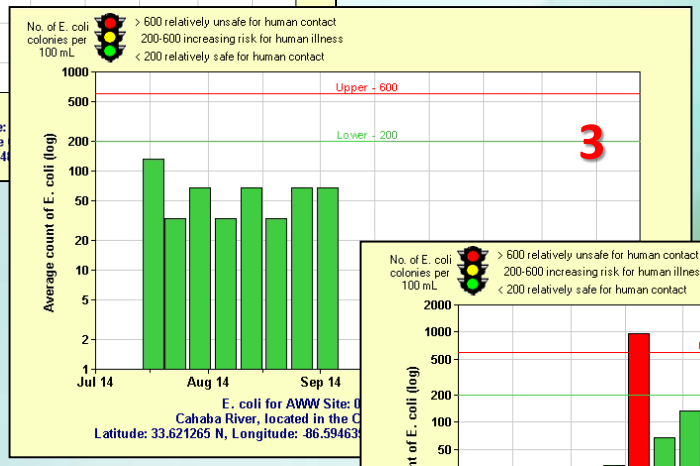


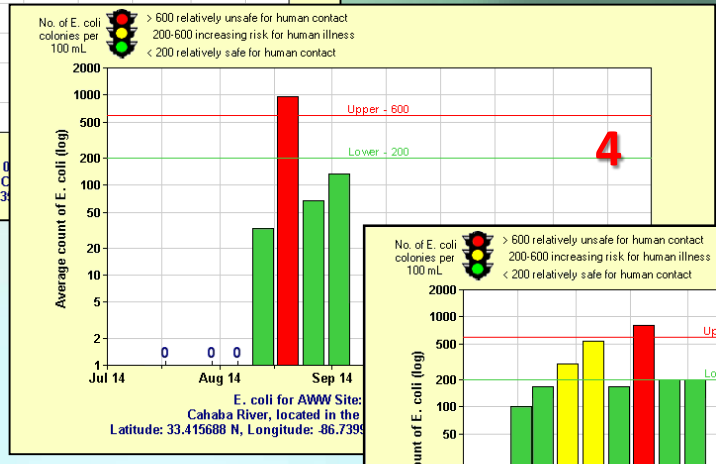
Is it safe to swim in the Cahaba?

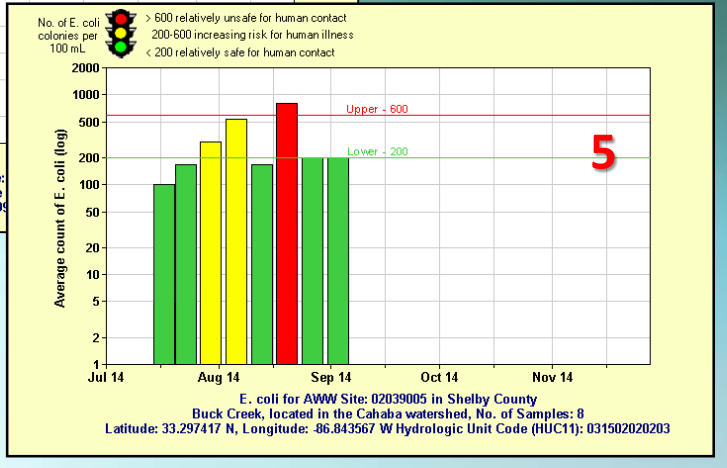








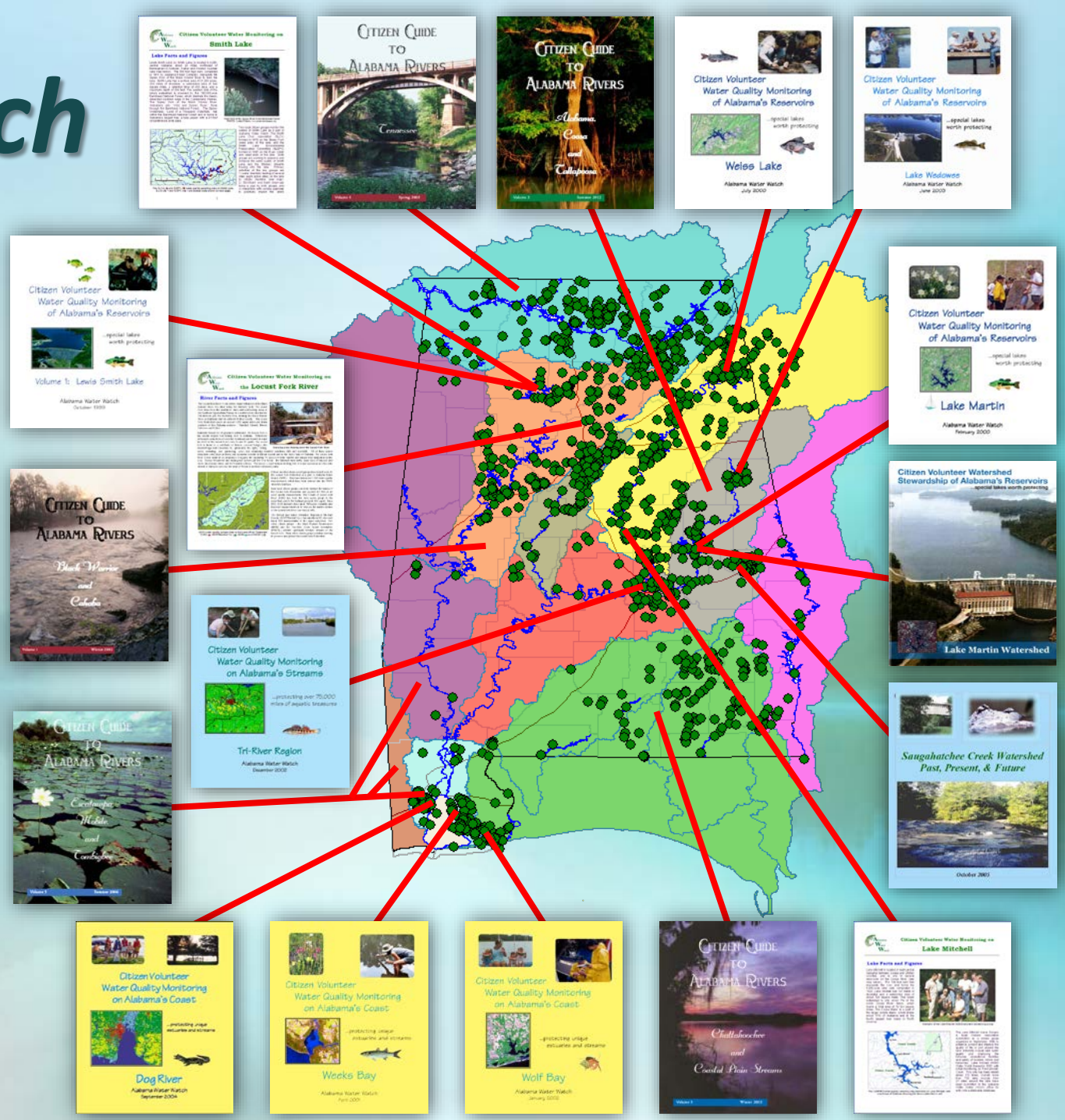




cahaba RIVERKEEPER®

Canoe the Cahaba
Explore Alabama's Richest River

Outreach Tools



www.alabamawaterwatch.org/resources/publications.html

AWWareness

AWW's online newsletter

Search

AWW Homepage | **Most Recent Article** | Op Ed: Alabama needs a water management plan now

Blog On!

IMAGE

MeOWW (Meet Our Water Watchers) – Mike Shelton, AWW trainer extraordinaire!

1

Mike Shelton works as Coastal Training Program Coordinator at the beautiful Weeks Bay National Estuarine Research Reserve near Fairhope, Alabama. He has introduced thousands of folks, youth and adults, to the wonders of coastal Alabama, and in the process has instilled in them a great appreciation for our state's precious and abundant biodiversity.

SEARCH AWWARENESS

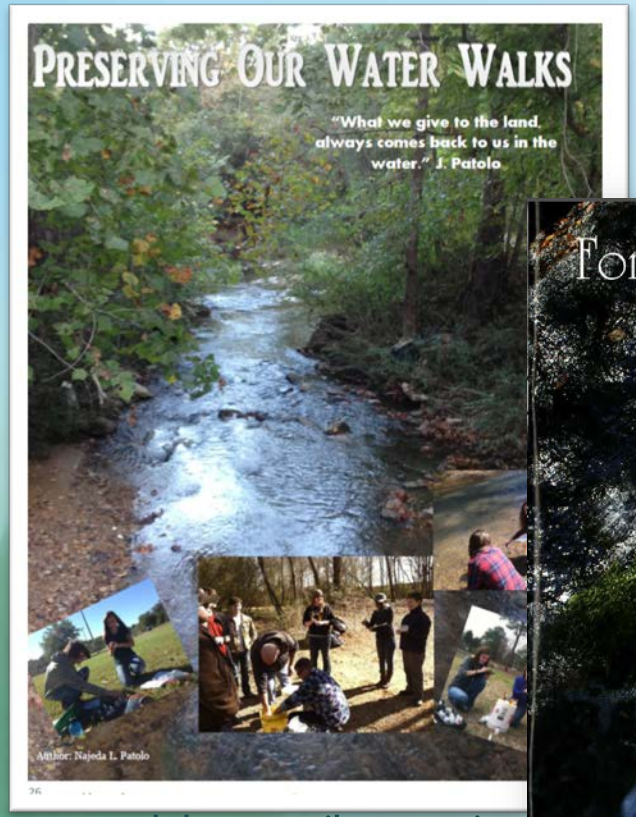
Search

FOOD FOR THOUGHT

- Op Ed: Alabama needs a water management plan now
- Should we settle for second to last?
- How Much is AWW Worth?
- Do You Know…the critters inside us

RECENT ARTICLES

- MeOWW (Meet Our Water Watchers) – Mike Shelton, AWW trainer extraordinaire! September 4, 2015
- MeOWW (Meet Our Water Watchers) – Taylor Steele, AWW trainer extraordinaire! August 18, 2015
- The Jacksonville River Monitors – making a big splash in Alabama July 30, 2015
- 2015 AWW Award Winners July 10, 2015



www.alabamatrailsmagazine.

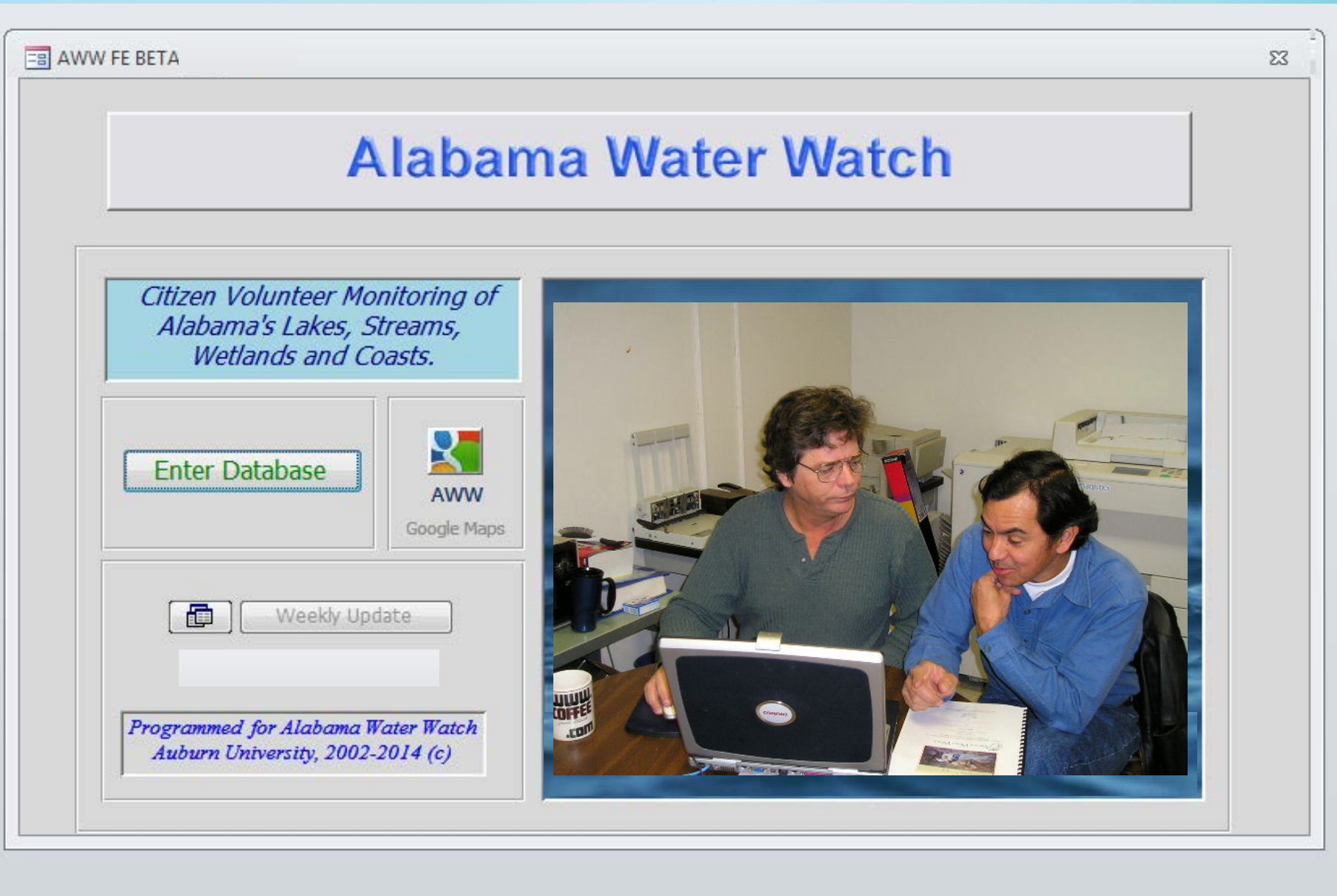
www.forestry.alabama.

www.apcshorelines.com

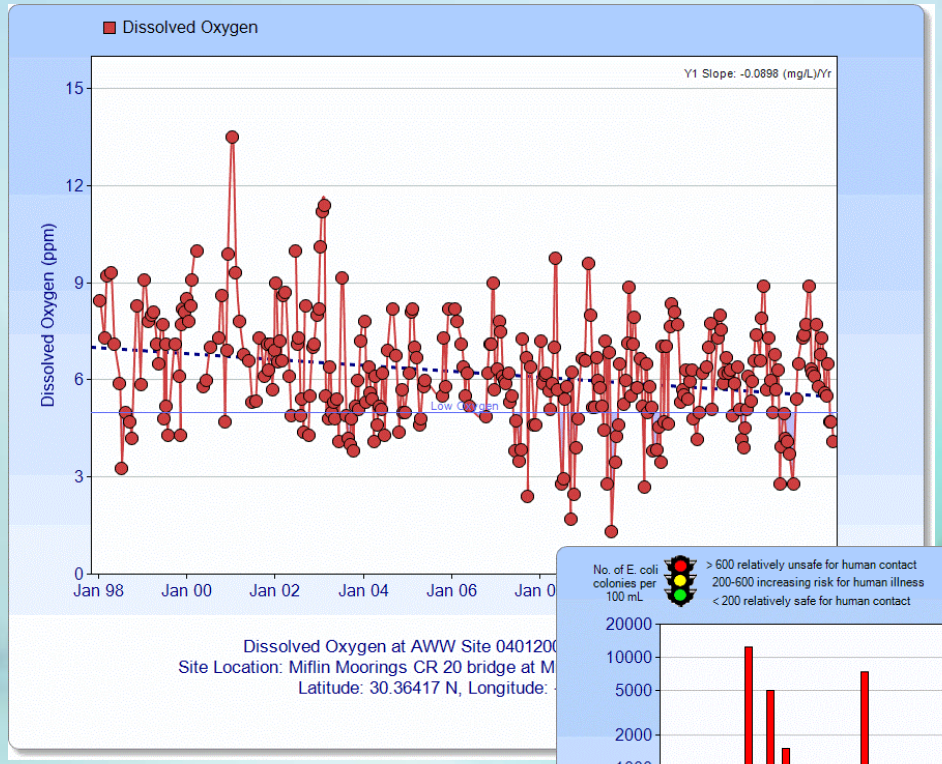
www.lakemartinmagazine.com

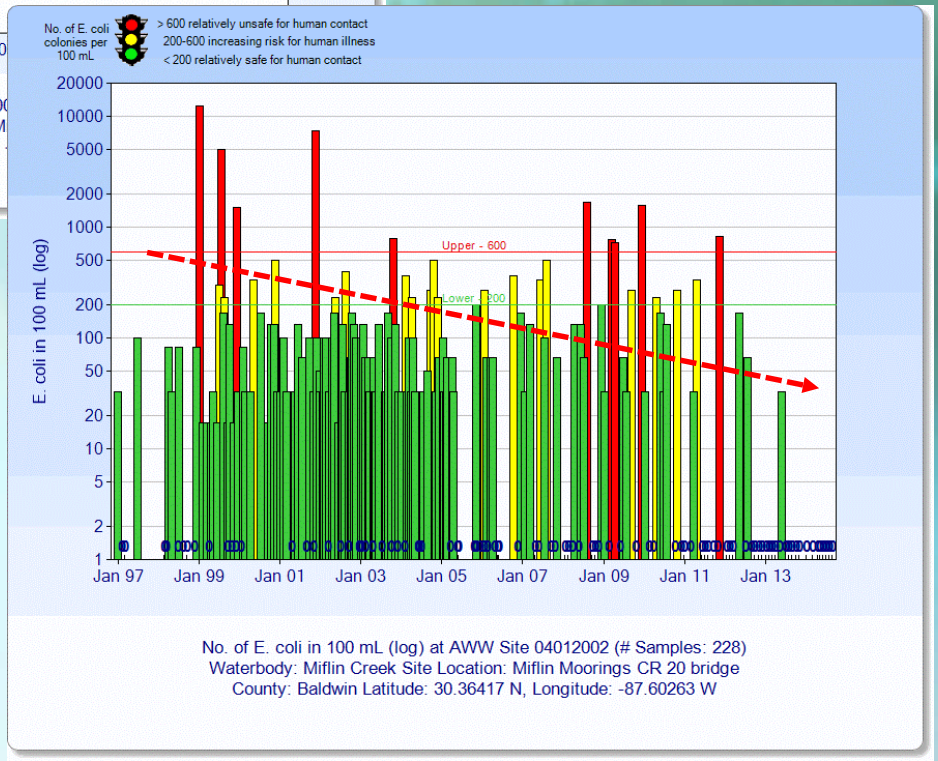
New Tools on the Horizon

New AWW Database

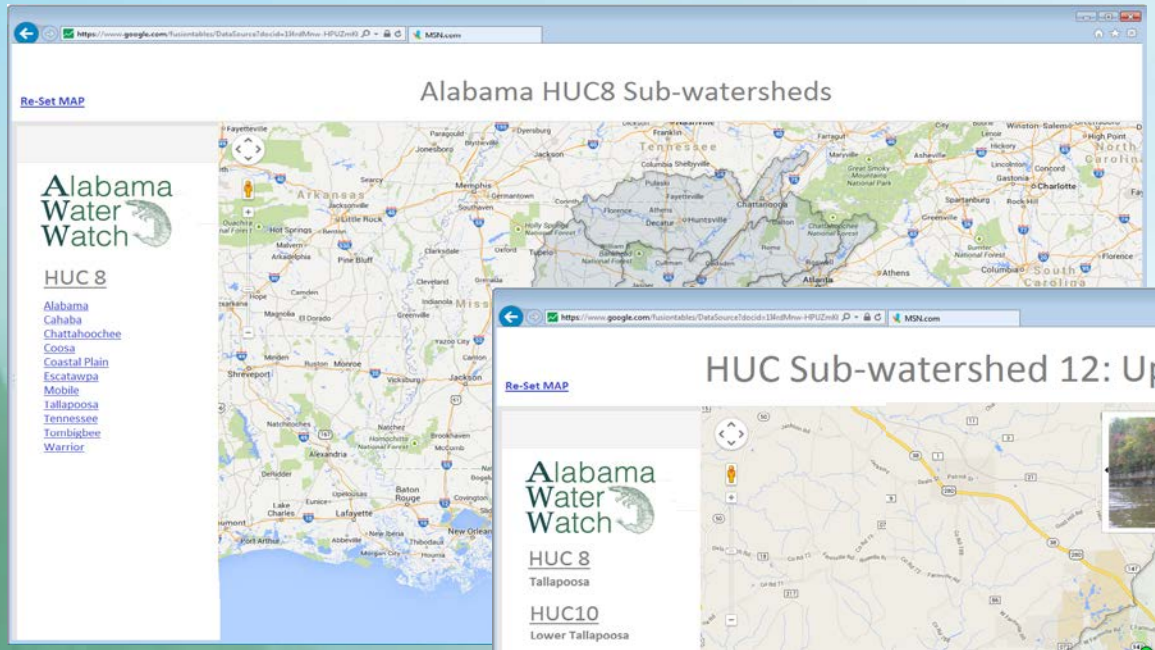


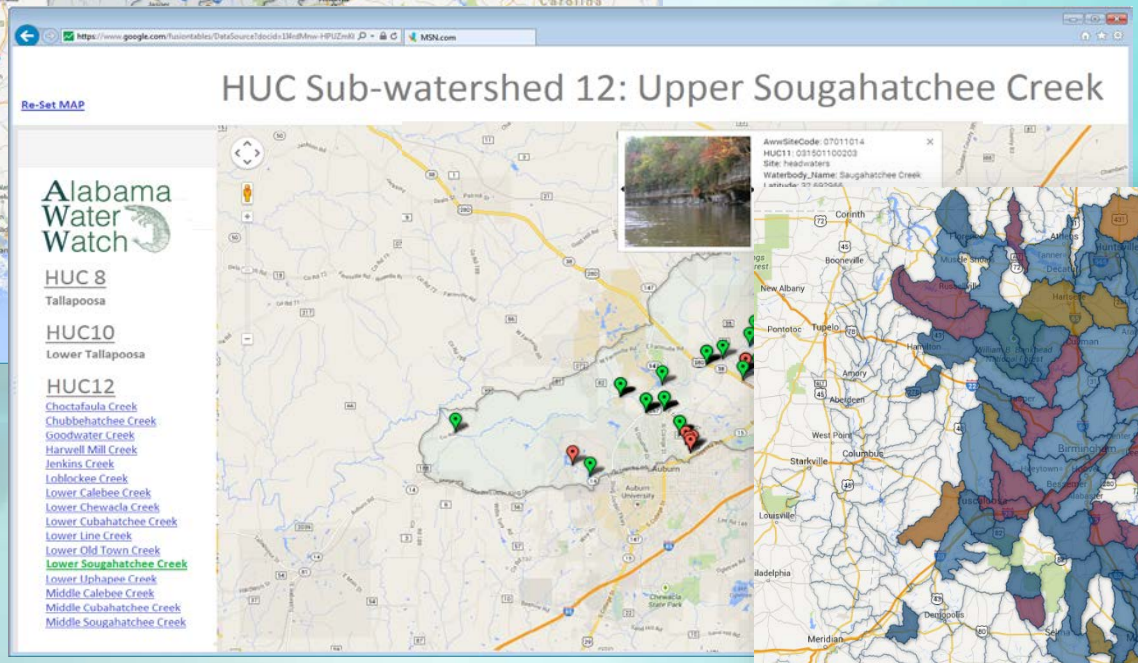
Data Visualization Tools

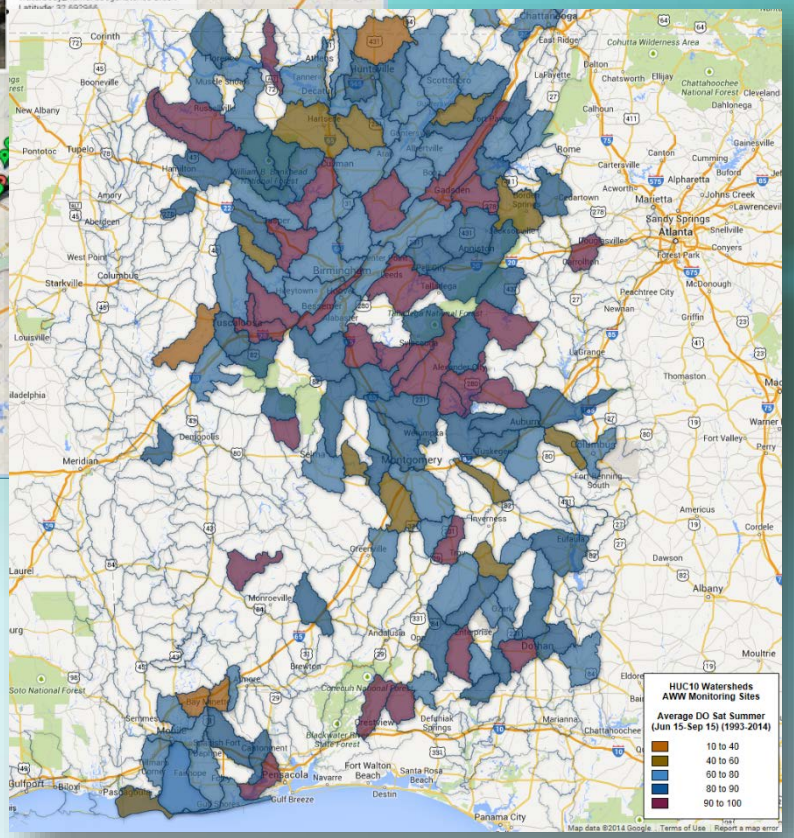




Query by Watershed!







Research Project : Identification of pollution sources on agricultural farms and evaluation of new fecal indicators for surface water quality monitoring

Project Proposal
for
Water Resources Research Institute Program
under
Section 104, Water Resources Act of 1984
to the
Alabama Water Resources Research Institute

In support of the
Research Proposal

Identification of pollution sources on agricultural farms and evaluation of new fecal indicators for surface water quality monitoring

by

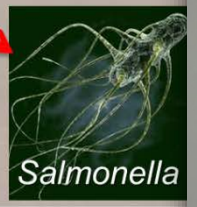
Luxin Wang, Ph.D.
Principal Investigator
Assistant Professor
Department of Animal Sciences
Auburn University, Alabama
Telephone (334) 844-8146

Eric Reutebuch
Co-Principal Investigator
Director, Alabama Water Watch
Auburn University, Alabama
Telephone (334) 844-4785

New tools for the AWW toolbox:

Waterborne diseases associated with fecal contamination

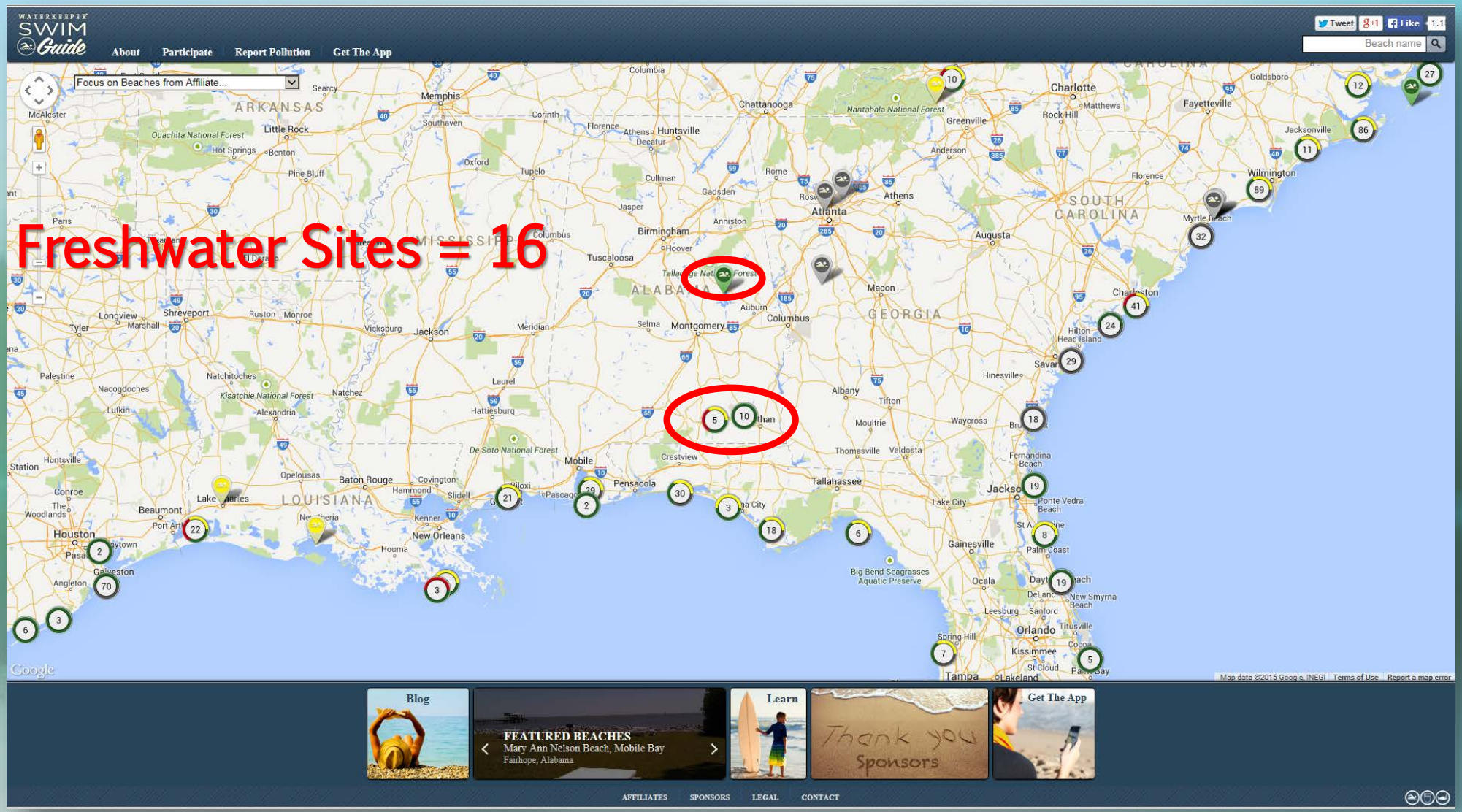
Common Name	Type of Organism	Site/Symptoms	Source(s)
Cholera	Bacteria	Gastrointestinal	Water and food
Cryptosporidiosis	Protozoa	Gastrointestinal	Water
Dysentery	Bacteria, viruses or protozoa	Gastrointestinal	Water and food
E. coli Infection	Bacteria	Gastrointestinal	Water
Enterococcal Infection	Bacteria	Gastrointestinal, bacteremia meningitis, endocarditis, urinary tract	Water and food
Giardia	Protozoa	Intestine	Water
Hepatitis A & B	Viruses	Liver	Water and food
Schistosomiasis	Flukes	Liver, renal system	Water
Typhoid	Bacteria	Gastrointestinal	Water and food



Alabama Water Watch

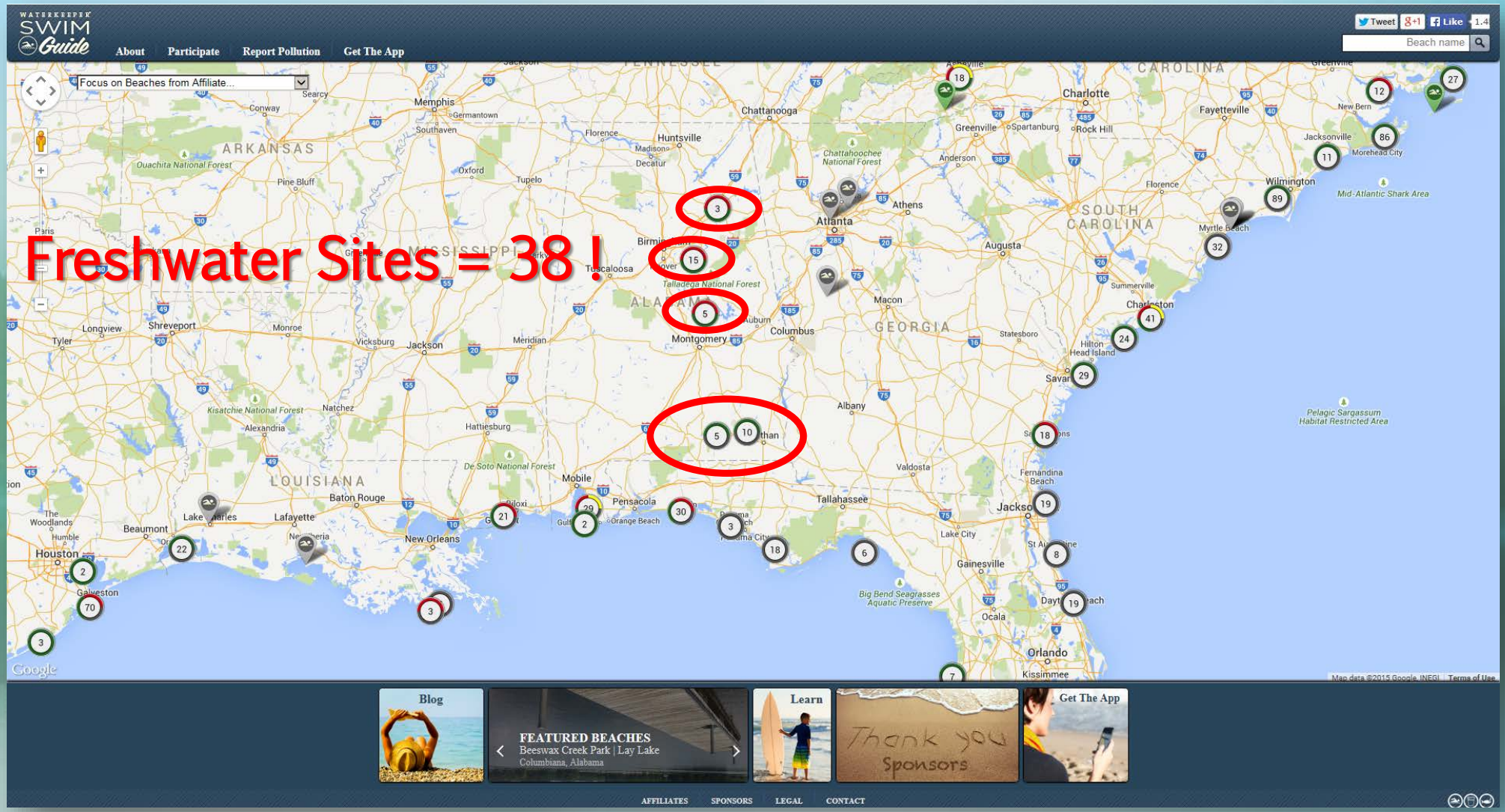

Let's go Swimming!
check at Swim Guide first

SG in Alabama - 2014



www.theswimguide.org

SG in Alabama - 2015



www.theswimguide.org

Wind Creek State Park

Updated by Alabama Water Watch

Current Status

Photograph by Waterkeeper Swim Guide

Alexander City, Alabama

Wind Creek State Park
Thank you for joining Swim Guide

DESCRIPTION

Wind Creek State Park, Your Public Access to Lake Martin!

Wind Creek State Park spans 1,445 acres along the shores of scenic Lake Martin, a 41,000-acre clear-water reservoir perfect for fishing, swimming and boating.

Wind Creek boasts the largest state-operated campground in the United States with 626 sites. One hundred eighty-seven sites are waterfront, allowing for fishing, swimming, and boating.

Other facilities include a marina, camp store, fishing pier, hiking trails, playground and picnic areas with tables, grills and shelters.

Bath houses are located throughout the campgrounds, and facilities for laundry. Seven camping cabins are now open to the public.

Location: South of Alexander City on AL Highway 128.

Hours of Operation: 7 a.m. until sundown (day use).

Day use fees: $3 for Adults; $1 ages 6-11; $1 seniors age 62 and over; children under 6 admitted free.

Recreational Opportunities: Camping, cabin rentals, boating, fishing, fishing tournaments, swimming, hiking, playground and picnic areas.

Camping: 626 modern campsites and 16 horse camping sites. Reservations taken Monday - Friday from 8 a.m. - 4 p.m.

Marina: Bait, camping and boating supplies. Hours 8 a.m. - 4 p.m.

Hiking: Two hiking trails, rated moderate to difficult, and one 10-mile horseback riding trail. Overnight horse camping available.

Want more information - simply go to: www.alapark.com/windcreek

SOURCES

The State of Alabama does not routinely monitor inland (freshwater) swimming areas/beaches. Several swimming areas are monitored by Alabama Water Watch volunteer monitors at sites where there is significant recreational use. Monitoring is done using methods (protocols) developed by the AWW Program that have been approved by Region 4 of the U.S. EPA (the EPA-approved AWW bacteriological monitoring plan is available at www.alabamawaterwatch.org/resources/publications.html).

AWW volunteer monitors throughout Alabama continue monitoring sites as long as resources and trained volunteers are available. All bacteriological monitoring data is routinely uploaded to the

Get Directions

Report Pollution

STATUS

Wind Creek State Park is sampled monthly from April 1st to October 31st.

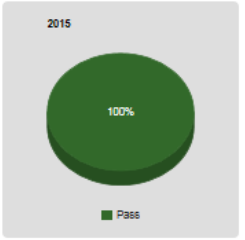
The status of this beach is GREEN.

This means the beach was tested recently and met water quality standards. Please see the **SOURCES** section for more information.

The status of this beach was last confirmed by Alabama Water Watch on June 8, 2015 at 02:15:34 PM UTC.

The Swim Guide shares the best information we have at the moment you ask for it. Always obey signs posted at the beach or advisories from official government agencies.

GRAPHS



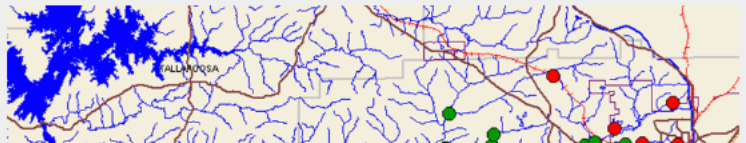
Local Community supports Water Watchers

Save Our Saugahatchee water monitors got some great news at their last group meeting in mid-October – funding from local government to support their ongoing water monitoring activities in the Saugahatchee Watershed! This was extremely welcome and important news on several fronts:

- SOS has very limited financial resources,
- given the ongoing rapid development, the Saugahatchee Watershed needs TLC now more than ever, and
- support by local governmental entities equates to them 'buying-in' to Alabama Water Watch's *Community-based Watershed Stewardship* model – a big boost for SOS monitoring and watershed stewardship efforts!

— Cliff Webber and Eric Reutebuch (on left, SOS board member and president) ceremonially receive support for annual water monitoring supplies from Joey Hundley, Dan Ballard and Scott Parker (center and to the right, representing Lee County, City of Auburn and City of Opelika).

Since they value and utilize SOS water data, the City of Opelika, the City of Auburn, and Lee County have pledged support of local water monitoring efforts to the tune of $350 each, for a total of $1,050 per year. SOS volunteer monitors have been monitoring numerous sites in the Saugahatchee Watershed since 1997, and currently monitor 23 sites from Opelika to Reeltown (see map below).



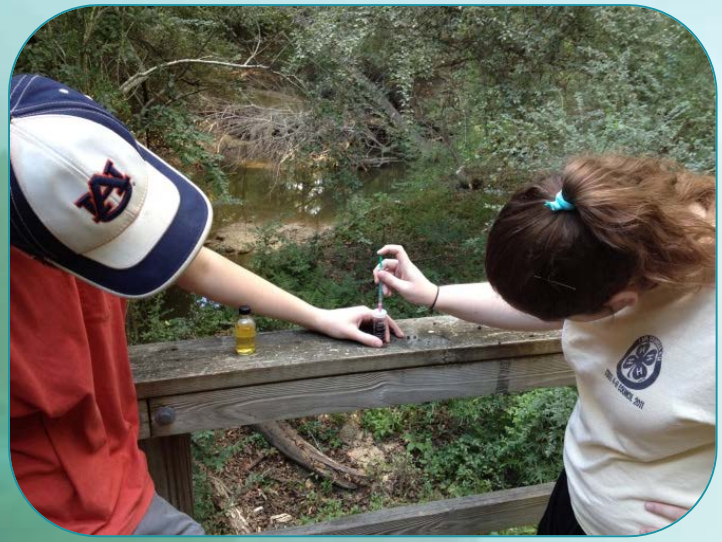
- tracking contamination (sewage) of local waters,
- aiding in monitoring and tracking fish kills,
- monitoring industrial point source discharges,
- water monitoring used in implementation of ADEM-funded watershed management plans aimed at water quality improvement, and,
- municipal and county water monitoring required by ADEM's permitting of Phase II *Small Municipal Separate Storm Sewer Systems* (MS4s).

New tools for the AWW toolbox:

Alabama Water Watch

H AWW Program

Alabama 4-H
Alabama Cooperative Extension System




BIG BUN
"WHERE'S THE BEEF?"

Who Uses AWW Data?

- Local community groups
- Schools
- Consulting firms
- Municipalities
- County agencies
- Watershed management plans
- Universities
- State agencies

Protecting Public Health

I. Streamside Classroom Initiative

In an effort to educate and raise awareness in our community about the need to protect local streams, the City of Auburn, ALOAS (citizen stormwater advisory committee), Save Our Saugahatchee (S.O.S.) and Auburn City Schools have joined together to provide streamside classroom activities. This past year's event was held May 2 – 3, 2012 along Swingle Creek in Auburn. Students from local middle schools combine classroom instruction with hands on field activities to conduct water chemistry and a biological assessment of a local stream. The program, geared to sixth graders, focuses on providing students with a background in the type of habitat expected to sustain a healthy stream. The students conduct a chemical analysis of the stream and compare the results with that of a biological assessment of the same stream. The City of Auburn participates by providing funding for transportation of the students to and from the stream site as well as for having appropriate restroom facilities on site.

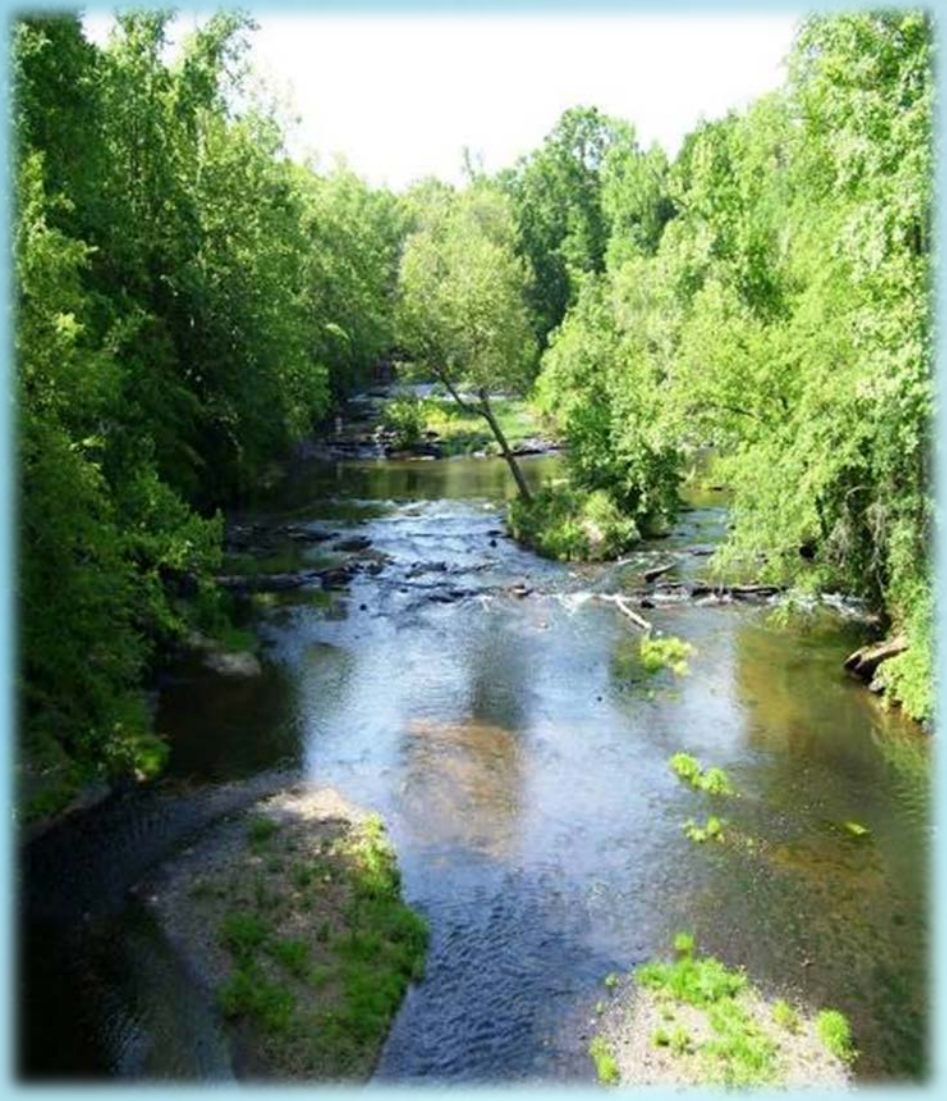
Fulfilling Stormwater Management Plan Regs (for ADEM NPDES Phase II Stormwater permits)

So, why monitor?

Better to have that warm fuzzy feeling

Than that 'I gotta go NOW' feeling

Come see us!



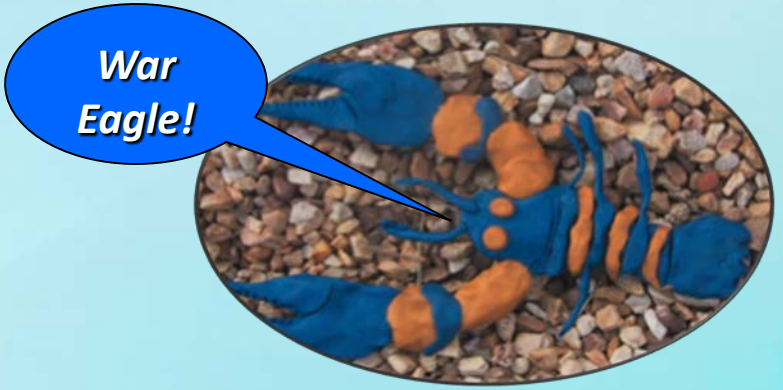
Saugahatchee at Lee CR 65 Bridge

Alabama Water Watch

559 Devall Drive
Auburn, AL 36849

www.alabamawaterwatch.org

Toll Free: 1-888-844-4785
email: info@alabamawaterwatch.org



The Auburn University crawdad, found only in the waters flowing through AU campus!