



**Flint River
Conservation
Association**

Currents

**Are you afloat
with *Currents*?**

- > Our next public meeting is: **Our HOLIDAY PARTY!** December 15, 2009 @ 6:30 pm
- > **Keel Mountain Hike February 20, 2010!**
- > **Watch out for more events online for January & February!**

<http://www.flintriverconservation.org>

FRCA's Holiday Party & Potluck, Dec. 15th, 2009

Join us for our December Public Celebration! Tuesday, December 15th, 2009 at the Trillium Room at the Burritt Museum. A Holiday Potluck and Party begins at 6:30pm.

The Flint River Conservation Association (FRCA) will provide turkey, ham, and beverages, and we ask that everyone bring a dish to share (with a serving utensil please). Guests and members are asked to bring a friend to see what FRCA is all about, and to celebrate the end of a productive project year!

Sandy Kirkindall--the speaker for the Christmas meeting, is the former Mayor of Madison, and has a long history in conservation. The Nature Conservancy is busy saving many of the most significant areas of Alabama, and Sandy is one of the board members making those decisions. As a regular member of TNC since 1981

and a board member for 12 years, he and his wife Melissa are also avid birders. He has worked for the US Army Defense much of his adult life, and with NASA for 24 years until taking on the role of Madison Mayor. The program will enlighten us about the Nature Conservancy's conservation programs (over 150,000 acres protected), in Alabama, with emphasis on the Paint Rock Valley whose headwaters include the Walls of Jericho, and the Keel Mountain Preserve in the Flint River Watershed. Both of these projects were spearheaded and purchased by TNC.

Call Susan Weber for more information at 509-1219. Bring family and friends! Experience the incredible lights and decorations of Burritt on the Mountain for the holidays!

Membership Schedule & Contribution Changes

By: Susan Thomas

The FRCA newsletter, *Currents*, will be discontinued for those who did not renew in 2009!

The membership calendar for *Currents*, will now run from January through December of each year. New renewals will receive *Currents* through December 2010.

Currents online* and membership donation is:

Full Year: Individual - \$12.00 Family - \$20.00

July-Dec: Individual - \$7.50 Family - \$12.50

*Add \$5.00 if you wish to receive *Currents* through the post office.

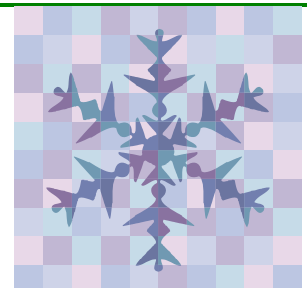


Your support is important to protect the Flint River! Our community depends on healthy rivers for drinking water, boating, fishing and freshwater biodiversity.

Please consider a contribution to the Flint River Conservation Association (FRCA), a 501(c)(3) tax-exempt charitable organization.

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Ferns Have a Heart for Water Quality

By: Kathryn DeBoer

Many fern species in the Huntsville area live in damp environments along stream and river banks. The places where ferns live are critical to water quality because of the fern's capability to decrease water runoff and organic debris from entering the waterway. Ferns act as natural filters that deter erosion and decrease non-point source pollution. Through time, ferns have evolved structures that brace the soil. Survival mechanisms such as these, create a healthier environment and thus enhance the surrounding water quality.

The fern's leaf blades, rhizomes (underground stems), and roots are the three mechanisms, in particular, that help to improve water quality. Each step of the fern's life cycle, from the beginning to the end, has a significant

impact on the habitat. The reproduction cycle occurs when spores germinate in a suitable moist environment. The area must be damp so that spores can be loosened and spring off from the fern. The spores grow by mitotic division into multicellular structures that develop into their reproductive organs. In most ferns, the reproductive organism, the gamete, is a tiny, fragile heart shaped organism called the prothallus.

As the fern develops, the young leaves known as fiddleheads uncoil their blades by a process called circinate vernation. The fiddlehead be-

comes a mature leaf blade called a frond. The fronds grow and stretch and in some cases become very large, depending on the species.

When the temperature becomes cool and the life of a blade has come to an end the frond falls to the ground, creating a mat. This mat is tough and durable. It holds soils and collects organic matter. The fern's mat is a natural filter for a nearby waterway, especially on steep slopes.

Ferns commonly found in the Huntsville area include Cinnamon Ferns, the Northern Maidenhair Fern, the Christmas Fern and the Southern Maidenhair Fern.



Wild Ferns.
Photo by: naturejournal.com

New FRCA Board Members!

By: Allison Bohlman

This fall, the FRCA executive board welcomed two new elected members: Scott Ammons and Kathryn DeBoer. We are very excited to have them join the board and are looking forward to their participation! Scott has voiced interest in possibly leading a few recreational activities (canoeing or kayaking) along the Flint River in 2010. Kathryn has expressed interest for the upcoming year by getting involved with water quality testing in conjunction with Alabama Water Watch.

Additionally, we will be saying good-bye to our faithful and trusted long time board member, Joe Imhof who will be stepping down tentatively in January 2010. Joe, you will be missed and FRCA hopes you will keep in touch with your insight and talents.

The 2010 FRCA Executive Board roster includes: Susan "Soos" Weber, Jennifer Pinkley, Lance Brecht, Jennifer Schade, Russell Bazemore, Susan Thomas, Kathryn Deboer, and Scott Ammons. Best of luck to you all! Work hard, work well, and stay positive!



Mercury Contamination in Freshwater Fish

By: Susan Weber

The USGS released a study in August that assesses mercury contamination in fish, bed sediment, and water from 291 streams across the nation, sampled from 1998 to 2005. The report, along with a press release, podcast, and summary of major findings can be accessed at

www.water.usgs.gov/nawqa/mercury
Scientists detected mercury contamination in every fish sampled in every stream. About a quarter of these fish were found to contain mercury at levels exceeding the criterion for the protection of people who consume average amounts of fish, established by the U.S. Environmental Protection Agency (EPA). More than two-thirds of the fish exceeded the EPA level of concern for fish-eating mammals.

Atmospheric mercury is the main source to most of these streams — coal-fired power plants are the largest source of mercury emissions in the United States — but 59 of the streams also were potentially affected by gold and mercury mining. Since USGS studies targeted specific sites and fish species, the findings may not be representative of mercury levels in all types of freshwater environments across the United States.

For more information, contact Barbara Scudder, bscudder@usgs.gov, (608) 821-3832 or Mark Brigham, mbrigham@usgs.gov, (763) 783-3274.

Keel Mountain Preserve Hike February 20th, 2010

By: Susan Weber

Not many know about the 310 acre Preserve owned by the Nature Conservancy on Keel Mountain, purchased in 2003 to protect the Endangered Morefield's Leatherflower. But after a short day of hiking with Susan Weber and other FRCA members, you will find out there is much more to see! Chittamwood or American Smoketree, prickly pear cactus, Limerock arrowwood, and Cumberland Rosinweed are among the many plant species found on Keel Mountain. The first and last will not be visible in the winter, but this hike will allow you to see a historically important spring and "lost sinks" that fed them, where water never stops running on Keel's mountainside above 1100'. One sink is over 100' deep—and we will go into it if it is not too slippery. The water here all supplies the Flint River.

The Nature Conservancy of Alabama purchased this land after Soos Weber did several years of grant investigation through the US Fish and Wildlife Service, and pushed for the purchase of the property. The State Champion Chittamwood is also found in the area, atop the geologic formation known as Candlestand. Barn owls and the Allegheny woodrat also live in the caves beneath Candlestand.

This is a moderately tough hike, and you will need hiking boots, water and lunch. We will meet in front of Regions Bank in Hampton Cove at 10 AM. If it rains or is bitter cold, it will be postponed until June, when the Leatherflower is in bloom. Call Soos at 427-5116 or 509-1219 for more information.



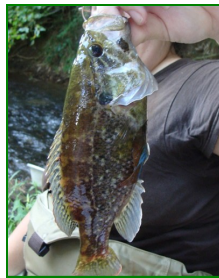
Flowers from Keel Mountain
Photograph by Susan Weber

Alabama A&M University is 'Fishing Up' Interesting Data within the Flint River

By: Allison Bohlman

The Center of Excellence of Watershed Management at Alabama A&M has begun a new research project conducting an extensive assessment of the Flint River watershed in response to increased urbanization and drought recovery. A small team from the Department of Natural Resources and Environmental Sciences has joined together to follow through on this three year project, they include: Drs. Tsegaye, Stone, and Tadesse along with research and technical support from Mrs. Heather Howell and Ms. Allison Bohlman.

Heather and Allison began conducting field assessments at 10 wadeable sites within the Flint River Watershed in April and finished most of their work in early November. Eight of these sites are located in the upper tributaries of the watershed including Beaverdam Creek, Hester Creek, Brier Fork, West Fork, and Mountain Fork. Other sites included are located in the main stem of the Flint River and Yellow Bank Creek. This research project includes biological surveys of the benthic macroinvertebrates (aquatic insects), fish, and fresh-



A big Sunfish catch!
Photo: Allison Bohlman

water mussels (including the invasive clam species *Corbicula*).

Benthic macroinvertebrates were sampled using 1 m kick nets in riffle areas.

With the help of undergraduate students, we hope to finish sorting and identifying most of the insect specimens by February 2010. Fish were electrofished using a backpack unit over a 150m reach. Fish were identified to species, counted, and then released immediately back into the stream. Incidences of hybridization, disease, and injury were also noted. Freshwater mussels were surveyed using 0.5m² quadrants along transects in the reach. Standard water quality measurements including pH, Dissolved Oxygen, Conductivity, Turbidity, Nitrogen, etc. were taken during each of the biological sampling trips.

GIS techniques are being used to evaluate the landuse/landcover of the Flint River watershed using 2005 Landsat data. Calculations of percent landcover and land use were done along marked sites in the watershed.

Currently, there is only preliminary data available from the summer fish surveys. The highest relative abundances (catch per unit-effort) measured were in Yellowbank Creek, Mountain Fork, and

Hester Creek. Brier Fork at the A&M Research Station had the lowest relative abundance of fish. On average, 17 species were caught at each site. Darter and sucker species (sensitive indicator species) were absent in Yellowbank Creek, and sucker species were also absent at the Beaverdam Creek site.

Using a statistical and graphical package, a Canonical Correspondence Analysis was performed to graph the relationship between fish taxa and different percentages of land use/land cover types. About 15 fish taxa showed a negative relationship to "developed" and "Pasture" lands in the Flint River watershed while also showing a positive relationship to "Forested" and "Agricultural" landuse.

These fishes that show a negative relationship to "Development" according to our CCA analysis are known fishes that prefer habitats with clear water (not turbid) and are mostly sensitive to changes in oxygen and temperature levels. The only positively correlated fish to "Developed" was the bullhead catfishes. The preliminary data used through GIS and CCA has shown us many intriguing patterns. We hope to have additional data to share with the community by next spring.



Flint River Conservation Association

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Don't
Forget
our Holiday
Party!
Tuesday Dec.
15th!!

The Flint River Conservation Association (FRCA) is a group of concerned residents, landowners, and recreational users who are working to conserve and improve the water quality, natural resources, and scenic beauty of Alabama's Flint River watershed. Please join us!

FRCA Membership Form

Name: _____

Address: _____

City: _____ State: _____ Zip Code: _____

Phone Number: _____ Email Address: _____

Membership Level: Individual (\$12) _____ Family (\$20) _____

To save trees, you will receive an electronic copy of our newsletter.

If you would like a paper copy of *Currents*, please add \$5 fee to your membership _____

Thank you for your support!

Please contact Jennifer Schade (FRCA Membership) at 256-214-6262 or email flintriverconservation@gmail.com if you have any questions pertaining to your FRCA support.