

Spring 2010

# the Thalweg

## Watershed Stewardship Program

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## Brooke and Branch Win Adopt-A-Stream in Action Award

Some of the newest (and cutest) members of the Watershed Stewardship Program have been honored by Georgia Adopt-A-Stream! Brooke and Branch and their puppet friends may not teach workshops, but they have effectively introduced the importance of environmental stewardship to thousands of students across the county. The *Adopt-A-Stream in Action Award* is awarded to a group who has utilized non-traditional formats to raise awareness about water quality.

In 2009, Cobb County's Watershed Stewardship Program launched a new water quality education program, *The Brooke and Branch Puppet Show*. This endeavor targets third grade students and utilizes music, storytelling, and puppetry arts to share the concepts of biodiversity, watershed, and stewardship.

This free outreach program, offered throughout the year to all schools operating in Cobb County, has already reached over 2,000 children. The activity lasts approximately

one hour and includes an introduction to water quality, a puppet show presentation, and concludes with a vocabulary review to reinforce the concepts covered. In addition, the WSP has developed an activity booklet, a SMART Board vocabulary lesson, and an electronic Jeopardy activity that teachers can utilize to further reinforce the concepts. The program has been correlated to Georgia's Performance Standards (GPS) and fulfills mandated curriculum content that students remember and understand in a fun and engaging manner.

The Brooke and Branch program encourages outdoor exploration and critical thinking about streams and their functions as habitat and an indicator of human impact and ecological health. In addition to schools, we are utilizing this program at community events such as the summer children's programs in Cobb libraries and during the Parks & Recreation Department's summer camps. Check our website calendar for an upcoming performance schedule.



For more information about the *Brooke and Branch Puppet Show*, visit [www.cobbstreams.org](http://www.cobbstreams.org) or email [water\\_rsvp@cobbcounty.org](mailto:water_rsvp@cobbcounty.org).



In January of 2010, after over 30 years of dedicated service, Ted Mikalsen stepped down as head of Georgia Environmental Protection Division's (EPD) TMDL (Total Maximum Daily Load) Implementation program. During his tenure with EPD, Ted championed the protection of Georgia's surface waters and authored or coauthored many publications dedicated to that goal.

Among his many projects was the creation of the State of Georgia Adopt-A-Stream (AAS) program. In 1994, Ted was instrumental in procuring the initial EPA funded 319 grant that provided the funding for the state program. He also participated in the hiring of a state coordinator whose strong, dynamic leadership firmly established Adopt-A-Stream in Georgia. It is unlikely that Georgia would have the extremely successful AAS program it does today had it not had the strong leadership and dedicated support from EPD employees like Ted Mikalsen from its inception. Ted's vision for the state AAS program was an initiative as deeply rooted in science as it was in public awareness. This emphasis on informed awareness is the centerpiece of AAS today, with strong emphasis on Quality Assurance/Quality Control data management. Innovative leadership continues in that tradition

with the recent launching of an online database. This kind of rigor in data collection produces useable, reliable data and gives volunteers valuable insight into the nature of the scientific method and science in general. This was exactly what Ted had in mind at the genesis of the program. He served on the AAS advisory board from its inception in 1994 until his retirement this year, providing guidance and technical expertise that has had a profound influence on the evolution of the program.

So, Ted Mikalsen was an important factor in the establishment and development of a state program, but what does he have to do with Cobb County, you might ask? Ted was extremely important to the entire watershed assessment program in Cobb County. His influence began in 1986 during my first year with Cobb County Water System. Cobb had a surface water monitoring program at the time but it was chemical sampling only. A co-worker, Randy Alexander, had just taken over the position of surface water monitoring technician when our lab was contacted by Ted and informed that EPD would be leading a stream monitoring workshop on Olley Creek. This workshop was a demonstration project on the newest methods for stream evaluation for chemical, biological and new habitat assessment



protocols. I still remember the excitement in Randy's eyes when he came back from that workshop spouting terms I had never heard before. Afterwards, our program went through a transformation from just filling bottles to a full blown stream monitoring program. In the process we acquired all the latest protocols, built an extensive library, and began the implementation of these protocols. This workshop led by Ted Mikalsen was the seminal event for our watershed assessment and watershed stewardship programs. Had this event not occurred, it is unlikely that we would have the robust watershed programs we enjoy today. This is just one small but significant example of how Ted touched and influenced programs all over the state from the urban north to the rural south.

Ted also conducted a thirteen year study on fluvial geomorphology in Cobb County. This study began in 1996 when I finally met Ted on a field demonstration of the first State of Georgia EPD Standard Operating Procedure (SOP) for the assessment of macroinvertebrates. Part of that SOP included habitat assessment. Ted was the in-house expert on habitat and geomorphology, having just completed the Rosgen course on geomorphology. Ted and I surveyed streams all over the metro area using the new habitat assessment protocol and comparing our scores. One of the streams in the survey was Procter Creek in Kennesaw, which happened to be one of Cobb County's monitoring sites. By the time we got there, Ted and I were thoroughly embroiled in a detailed dissertation on geomorphology. After completing the habitat assessment he pronounced that he would like to make this location his geomorphology research site and wanted me to assist him. He made this assessment based on his visual survey of the watershed (mainly land use) as we rode to the site and the general assessment of stream condition and size. This was an offer I could not refuse and definitely do not regret. Since that day, we have gone back to the site at a minimum of once a year (often several times a year) to conduct detailed dimensional analysis on this stream segment. This led to a comprehensive geomorphological study over time with seven papers published in the proceedings of the Georgia Water Resources Conference. His tireless dedication to this project produced some remarkable data.

Ted truly had the best interest of our streams at heart, was in a position to make a difference, and pursued this goal to the best of his ability. He was the consummate public servant. It can be safely said that there is not a stream in the state of Georgia that was not positively impacted either directly through his various projects or indirectly through policies he implemented in his tenure with EPD. So, the next time you open your Adopt-A-Stream monitoring kit or do a visual survey, remember that these assessment tools and protocols were made available to you through the hard work and dedication of people like Ted Mikalsen.

## Photography Spotlight



Black Locust  
(*Robinia pseudoacacia*)  
horticultural cultivar 'Twisty Baby'  
offers beautiful white springtime  
blooms as well as distinctive  
twisting branches.

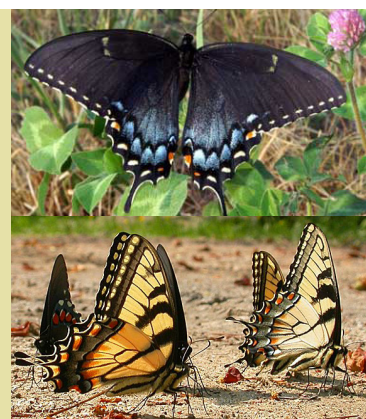
Submitted by  
Emily Toriani-Moura

Have a great photo to share?  
Send it to [water\\_rsvp@cobbcounty.org](mailto:water_rsvp@cobbcounty.org).

## observations

Eastern Tiger Swallowtails are taking flight this spring! Proclaimed Georgia's state butterfly in 1988, this common insect measures about six inches across with "tails" as long as one inch. Most are bright yellow with black tiger-like stripes, although some females have a dark form. The purpose of this dark color phase may be to mimic the Pipevine Swallowtail, a butterfly similar in appearance that is distasteful to predators. You can attract this beautiful species to your yard by providing host trees to feed the caterpillars (including Yellow Poplar, Red Maple, and Black Cherry) as well as nectar-producing flowers for the adults.

Linda May, Environmental Outreach Coordinator  
Georgia DNR, Wildlife Resources Division



# Alien Invasion

## Are exotic species taking over the world?

Since the *War of the Worlds*, stories of outer space creatures landing on our planet have fascinated the collective imagination. When exotic mollusks, weeds, or beetles conquer local ecosystems, it usually does not make the headlines or captivate the public, but it is nonetheless a far more tangible threat.

Invasive species have the capacity to aggressively colonize areas outside their natural range. They can adapt to a wide range of conditions and are not effectively controlled by native predators and pathogens. Not only do invasive plants have the potential to outcompete local species, they could also severely alter hydrology, fire occurrence, and soil chemistry. For example, the tamarix (*Tamarix sp.*) is increasing the salinity of the soil on the banks of the Colorado River, forcing native species such as willows and cottonwoods to establish elsewhere. Once the habitat is disturbed, wildlife is affected as well. Sources of food and shelter shift, and some endemic species might eventually vanish if they are forced to rely on a limited number of plants. The landscape can change dramatically over the course of a few years. Riparian habitats and disturbed lands are particularly at risk for invasion.

Wetlands are essential to good water quality and their preservation is key to supporting life around the globe. Wetland and riparian habitats are already being affected by accelerated erosion, contamination by fertilizers and pesticides, and overall urban pressure. Unfortunately, these habitats can also become dispersal corridors for prolific plant species since they are frequented by wildlife carrying seeds in their fur or digestive tracts. The economic impact is enormous; according to the US National Arboretum, "Over \$100 million a year is spent in the U.S. combating invasive plants in wetlands alone".

Some plants, such as the alligatorweed (*Alternanthera sessilis*), have conquered new territory by accident. It was transported in ship ballasts from the South American waters and now forms dense thickets on south Georgia stream banks. It displaces native vegetation and wildlife habitat, clogs waterways, lowers the level of oxygen in water, increases sedimentation, interferes with irrigation, and prevents proper drainage.

Other invasive plants have been garden favorites before escaping culture. The horticultural market has long been driven by a fascination for the new and the exotic, but plants are not only introduced for their visual features. A vigorous growth habit and the potential to adapt to a variety of conditions make them more appealing. Numerous species in southeastern gardens were brought in from areas of Asia where the climate is similar to ours. Purple loosestrife (*Lythrium salicaria*), with its bright and long blooming flower spikes, was once the perennial of choice for gardens. Seeds were washed away or carried by waterfowl, and now loosestrife is vastly spread in wetlands and stream beds across the continent. Kudzu (*Pueraria Montana*) was imported as a new form of erosion control. Mimosa (*Albizia julibrissin*), Chinese privet (*Ligustrum sinense*), and Japanese honeysuckle (*Lonicera japonica*) were introduced as garden ornamentals. All were brought to the U.S. between 1745 and 1876. They were not introduced with the deliberate intention to harm existing ecosystems, yet the damage they have caused since is substantial. Of course, not all exotic species are invasive, and it is hard to predict their effect on native landscapes in the long-term.

*Kudzu: An all too familiar sight in the southeast.*





*Sweet Pepperbush is an eye-catching native alternative to exotic nursery shrubs.*

## Landscaping Alternatives to Invasives

Concern Category	Invasive Species	Alternative Species
1	Autumn olive <i>Elaeagnus umbellata</i>	wax myrtle <i>Morella cerifera</i>
1	congograss <i>Imperata cylindrica</i>	Muhly grass <i>Muhlenbergia capillaris</i>
2	thorny olive <i>Elaeagnus pungens</i>	Franklin tree <i>Franklinia alatamaha</i>
2	silvergrass <i>Miscanthus sinensis</i>	switchgrass <i>Panicum virgatum</i>
2	heavenly bamboo <i>Nandina domestica</i>	inkberry <i>Ilex glabra</i>
2	golden bamboo <i>Phyllostachys aurea</i>	horsetail <i>Equisetum hyernal</i>
2	Japanese spirea <i>Spiraea japonica</i>	sweet pepperbush <i>Clethra alnifolia</i>
2	bigleaf periwinkle <i>Vinca major</i>	Carolina jessamine <i>Gelsemium sempervirens</i>
2	common periwinkle <i>Vinca minor</i>	Allegheny spurge <i>Pachysandra procumbens</i>
3	Japanese barberry <i>Berberis thunbergii</i>	Southern bush honeysuckle <i>Diervilla sessilifolia</i>
3	winter creeper <i>Euonymus fortunei</i>	partridge berry <i>Mitchella repens</i>
3	rose of Sharon <i>Hibiscus syriacus</i>	silky camelia <i>Stewartia malacodendron</i>
3	lilyturf <i>Liriope muscari</i>	Pennsylvania sedge <i>Carex pennsylvanica</i>
3	Bradford pear <i>Pyrus calleryana</i>	common serviceberry <i>Amelanchier arborea</i>
4	five-leaf akebia <i>Akebia quinata</i>	Woodvamp <i>Decumaria barbara</i>
4	burning bush <i>Euonymus alatus</i>	burning bush <i>Euonymus atropurpureus</i>
4	Cherokee rose <i>Rosa laevigata</i>	climbing rose <i>Rosa setigera</i>

For more alternative species, consult the website of the Invasive Species of Concern in Georgia: [www.gainvasives.org](http://www.gainvasives.org)

### WHAT CAN YOU DO?

Despite the regulations established and enforced by the USDA, the introduction of new species in nurseries is not strictly controlled. Plants and soil are examined upon entering the country for immediate threats such as pathogens and pests. However, the long-term ecological behavior of these plants is not studied. As customers, we need to learn to make responsible choices.

The first step is to get informed and to spread the word. The Georgia Exotic Pest Plan Council listed a total of 137 invasive plant species of concern; 28 of them classified in Category 1 (serious problem) and 21 in Category 2 (moderate problem). The remaining plants on the list are not an immediate concern, but their propagation must be scrutinized. They fall under Categories 3 and 4. Even bermuda grass (*Cynodon dactylon*) is a threat of Category 2! It crawls everywhere and makes its way between rocks and inside planting beds. Limit the use of sod. Instead, use native groundcovers, ferns and ornamental grasses. As a bonus you will spend less time behind the lawn mower.

When designing your garden, select plant species wisely and opt for natives. Many regional species have great horticultural attributes, yet they have been overlooked to the profit of exotics. They might be harder to find in nurseries, but your backyard will be the talk of the neighborhood! Unfortunately, many gardeners are unaware that species of concern are still vastly available on the market, some are even staples in the landscaping industry. This is a serious problem, but can be combated with some research into suitable alternatives.

Removing invasive plants from your yard can be a noble yet fruitless effort. Plants that grow from rhizomes will shoot up as soon as the roots are broken. A good strategy is to cut the flowers as soon as they are spent to limit the production of seeds, and look out for new sprouts. Young plants are easier to dislodge. Keep in mind that insects, fungus, and microorganisms can also be invasive. Help stop epidemics such as the Dutch elm disease by leaving firewood on site. Dead logs can host unwanted pests, so do not carry them from campground to campground. With a little thought and effort, we can prevent these extraterrestrials from taking root in our landscapes.

### Resources

Invasive Species of Concern in Georgia  
[www.gainvasives.org](http://www.gainvasives.org)  
 National Invasive Species Information Center  
[www.invasivespeciesinfo.gov](http://www.invasivespeciesinfo.gov)  
 The United States National Arboretum  
[www.usna.usda.gov/Gardens/invasives.html](http://www.usna.usda.gov/Gardens/invasives.html)  
 Lady Bird Johnson Wildflower Center  
[www.wildflower.org](http://www.wildflower.org)  
 Georgia Native Plant Society  
[www.gnps.org](http://www.gnps.org)

## River Rendezvous 2010



On May 22, 2010, Sierra Club Cobb Centennial Group will hold the 4th annual River Rendezvous, which provides a snapshot of water quality in the Rottenwood Creek watershed. Participants will perform Adopt-A-Stream chemical and bacteria tests at 30 sites. Samples will be brought to the Cobb County Water Quality Laboratory for more extensive testing such as nutrients and heavy metals. Ten teams each visit three sites for testing. They are supplied with trash bags for site cleanup and disposable cameras to document their work. Each team leader is certified in Adopt-A-Stream chemical monitoring.

At previous events, Sierra Club members have found active sewer leaks that were subsequently reported to the county and repaired, mitigating further environmental damage. As a bonus, everyone has a good time helping the community and meeting other environmentally-minded people.

After the data and samples are turned over to the laboratory staff, participants can head down to the gazebo for a cookout. Sierra Club provides hamburgers and hotdogs (veggie options available) and asks participants to bring a side dish or dessert to share. This is a fun event that welcomes people of all ages. Sierra Club non-members who have a concern for the well-being of our water are always welcome. Please meet at the Water Quality Laboratory at 8am for a briefing before splitting into teams and departing to our sites. For questions or RSVP, please contact Ina Allison (allison@LOMA.org) or Carina O'Bara (carina\_do@yahoo.com).

**Date:** Saturday, May 22, 2010

**Time:** 8am-lunchtime

**Location:** Cobb County Water Quality Laboratory  
662 South Cobb Drive, Marietta, 30060

## student submissions

### The Graceful River

The gentle river flows and meets the swamp  
The butterflies gently flap their wings in the air  
An eagle swoops down to catch its prey  
The turtle crawls on a log to take a nap  
The rabbit hops as fast as lightning  
The alligator tans in the sun  
The graceful river is a place to go for a peaceful and relaxing day.

Rebecca Valle  
Grade 2, Casa Montessori  
2009 River of Words State Winner

K-12 students can submit art or poetry to [water\\_rsvp@cobbcounty.org](mailto:water_rsvp@cobbcounty.org)

## RECOMMENDED RESOURCE

Blue Planet Run provides readers with a fascinating and thought-provoking look at the water problems facing humanity on every continent, as well as some of the hopeful solutions and courageous "water heroes" focused on alleviating this crisis.



The coffee table book highlights the vital contributions of nonprofits around the world, including the groundbreaking work of the Blue Planet Run Foundation, which seeks to provide safe drinking water to 200 million people by 2027. The book includes coverage of the 2007 Blue Planet Run, an unprecedented, non-stop, around-the-world relay race designed as a wake-up call to the world.

It's also a thought-provoking visual tour of these global water issues by the world's top photojournalists, from the immense social impact of China's Three Gorges Dam to residents of a New Delhi slum fighting over the hose from a government water tanker truck and portraits of land purchased by oil tycoon T. Boone Pickens so the water underneath it could be sold to gasping Texas towns.

*From Barnes & Noble and Bookpage.com*



# 2009 Volunteer Awards

In 2009, we had some outstanding volunteers that went above and beyond the call of duty. They were recognized for their efforts at the 2010 Watershed Stewardship Fair on January 28th.

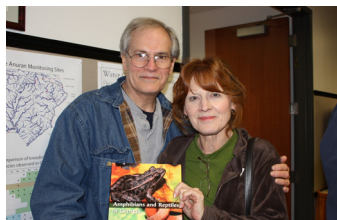
## School of the Year

Walton High School's Environmental Club, led by teacher Barbara Hopper, has been monitoring Sope Creek since 1997, five years before Cobb had an Adopt-A-Stream program! In 2006, she was joined by Sharon Camp and the AP Environmental Science Class, who are monitoring a tributary of Sewell Mill Creek. Together, they have logged over 130 individual monitoring events.



## Storm Drain Markers of the Year

The Donnelly Family, collectively known as the 4D Crew, have been active AAS monitors since October. They have been actively marking the stormdrains near their neighborhood along with chemical and bacteria monitoring. In 2009 they marked over 130 storm drains and distributed education materials to nearly 300 homes.



## Anuran Monitors of the Year

Ric and Sharon Donato have been actively participating in our anuran monitoring program since April 2009. Their consistent, thorough, and timely data is integral in helping the WSP develop a baseline map of frog and toad species and in Cobb County.

## Adopt-A-Stream Volunteer of the Year

The WSP would like to recognize Teri Tornroos as our 2009 Adopt-A-Stream Volunteer of the Year. Teri has been monitoring since 2008, but became involved with AAs in 2006 when her daughter Alyssa began monitoring as a part of a school project. Eventually, Teri took over at their neighborhood site, and even started monitoring for *E. coli* in early 2009. In two years, she has rarely missed a month of monitoring and is an exemplary volunteer.

## Highlights from the Fair



## ECOPEDIA

**Succession** - After a disturbance in the ecosystem, succession begins. First come the fast-growing, fast-spreading plants adapted to life in harsh conditions that provide better conditions for the original vegetation. The pioneer's decaying roots, leaves, and stems enrich the soil, and they may also provide shade and wind protection for seedlings of other species. In time, something like the original vegetation is reestablished, though in the natural world nothing ever precisely repeats itself.

*From Ecology: A Pocket Guide*



## CONSERVATION TIP

Try switching to a perfume or cologne that contains natural, pure botanical ingredients.

Most conventional fragranced products contain chemicals derived from petroleum and are linked negatively to environmental health effects. Because eight hundred million pounds of these chemicals are used per year to make fragranced products, they are considered to be one of the most prevalent toxins in the environment.

*From The Green Book*

## REMINDERS

- Check out our new Facebook page and become a fan! Search **Cobb County Watershed Stewardship Program**.
- If you're receiving a paper version of this newsletter, you can sign up for the electronic version at [www.cobbstreams.org](http://www.cobbstreams.org). Click on the link at the bottom of the homepage and fill out the form. We'll automatically remove you from our paper mailing list.

welcome

new watershed stewards

**Amy Boggs**

will be monitoring a tributary of Noonday Creek

**Denise Gadd & C.J. Turner**

will be monitoring Powder Springs Creek

**Henry Skoog**

will be monitoring Willeo Creek

**Bernadette & Keith Anderson**

will be monitoring a tributary of Sweetwater Creek

**Benton MacKaye Trail Association**

will be monitoring Nickajack Creek

**Laura Story & her son**

will be marking storm drains in the Fox Hills Subdivision

Cobb County  
Watershed Stewardship Program  
662 South Cobb Drive  
Marietta, Georgia 30060



*Cobb County...Expect the Best!*

This is an official publication of the Cobb County Water System, an agency of the Cobb County Board of Commissioners.

## Calendar of Events

### April

- 7 Rain Barrel Workshop • 2pm-3pm • Cobb County Water Quality Lab
- 8 Anuran Monitoring Workshop (classroom) • 7pm-8:30pm • Cobb County Water Quality Lab
- 13 Anuran Monitoring Workshop (field study) • 8pm-9:30pm • Heritage Park
- 19-23 Household Mercury Collection Week • 7:30am-4pm • Cobb County Water Quality Lab
- 24 Rain Barrel Workshops • 10am, 1pm, 3pm • Cobb County Water Quality Lab

### May

- 15 Cobb Master Gardeners Plant Sale • 10am-5pm • 675 Holt Road, Marietta
- 22 River Rendezvous with the Sierra Club • 8am-1pm • Cobb County Water Quality Lab

### June

- 1 Summer Library Program for Children - Water Pollution • 11am-12pm • Powder Springs Library
- 9-11 Cool Waters Workshop for Teachers • [www.gawp.org](http://www.gawp.org) • Cobb County Water Quality Laboratory
- 16 Wetland Walk (Kids Program) • 9am-10am • Heritage Park
- 23 Brooke & Branch Puppet Show • 10am-11am • Smith-Gilbert Gardens
- 30 Stream Study & Critter Search (Kids Program) • 9am-10am • Powder Springs Park

### July

- 14 Wild About Wildlife (Kids Program) • 9am-11am • Stout Park
- 20 Summer Library Program for Children - Brooke & Branch Puppet Show • 11am-12pm • Powder Springs Library
- 22 Summer Library Program for Children - Water Pollution • 10am-11pm • Kemp Library
- 28 Family Scavenger Hunt (Kids Program) • 9am-11am • Sweetwater Park

Events in **red** are Cobb County Watershed Stewardship events.  
More information can be found on our Calendar at [www.cobbstreams.org](http://www.cobbstreams.org).