the Thalweg

Watershed Stewardship Program

Winter 2012

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Cobb County Watershed Stewardship Program

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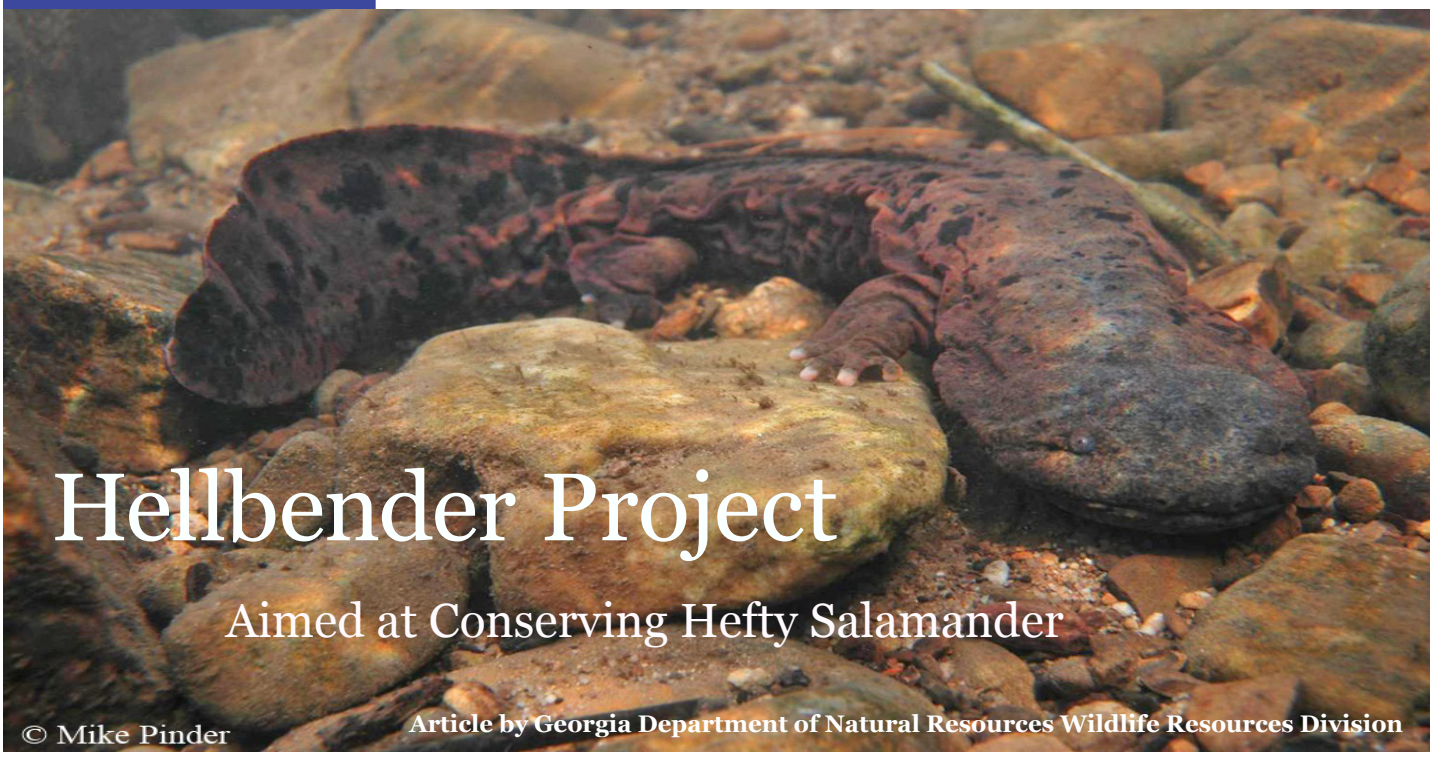
Eco-Logical... Tips to Reduce Your Footprint

Eco-Logical...Tips to Reduce Your Footprint is our new video series. We are developing short educational messages that addresses various pollution prevention topics to help reduce water quality issues throughout Cobb County and surrounding watersheds. This series presents information for residents to become more aware of how their actions could impact water quality and provides simple ways to reduce their ecological footprint.

Two episodes have been published so far. The first episode in the series, *Eco-Logical...Tips to Reduce Your Footprint with Your Pets,* focuses on ways to spoil your furry friends while being environmentally conscious. This video compliments our *Pick It Up Pals* Program by discussing bacteria contamination and the importance of proper disposal of animal waste. The second episode is *Eco-Logical...Tips to Reduce Your Footprint in Your Kitchen*. This segment presents tips for grease management in the kitchen, reveals how simple actions reduce sewer overflows, and demonstrates proper disposal of Fats Oil and Grease (FOG).

Future *Eco-Logical* topics will educate about: detention ponds, illegal dumping, easements, storm drains, and outdoor landscapes. These productions are shared with Cobb County employees through internal county communcations and are promoted publically on the cobbstreams.org website and on YouTube. We welcome your feedback and ideas as we develop this new resource. Please contact our office if you have suggestions.

Tune in for upcoming episodes!



Hellbender Project

Aimed at Conserving Hefty Salamander

Article by Georgia Department of Natural Resources Wildlife Resources Division

Hellbenders (*Cryptobranchus alleganiensis)* may have more unflattering nicknames – Grampus, Lasagna lizard, Mud devil, Snot otter – than a cross-county football rival, but these big salamanders with the jelly-slick skin are attracting some positive, and needed, conservation attention.

The Georgia Department of Natural Resources began a long-term monitoring and survey effort focused on eastern hellbenders this year. Goals include learning more about hellbender population trends, finding new sites, and monitoring hellbenders to evaluate abundance and track changes in Georgia, according to project leader Thomas Floyd.

"One of the healthiest populations in North America is in the North Georgia mountains," said Floyd, a wildlife biologist with the DNR Wildlife Resources Division's Non-game Conservation Section. "… It's really important for us to get baseline data so we know in the future how this salamander is doing."

Hellbenders are North America's largest salamander. They can grow longer than 2 feet. They live in cool, clear streams – the same habitat trout need – from New York to North Georgia and as far west as Missouri. Their dependence on pristine streams makes hellbenders, which breathe entirely through their skin, harbingers of poor water quality.

Yet, both hellbender subspecies – the eastern and the Ozark, found in the White River system in Missouri and Arkansas – have experienced widespread declines, largely because of declines in habitat suitability. The primary threat is the influx of sand and other sediments, most of which are washed into streams from farmland and roads. The sediment embeds large rocks, clogging the open spaces hellbenders use for shelter, nesting and ambush sites when hunting prey such as crayfish. Earlier this month, the U.S. Fish and Wildlife Service designated Ozark hellbenders as endangered under the federal Endangered Species Act. The agency also finalized its decision to add Ozark and eastern hellbenders to the list of rare wildlife regulated through the Convention on International Trade in Endangered Species of Wild Fauna and Flora. The hope is to curb unauthorized international trade.

Eastern hellbenders are a candidate for federal listing. In Georgia, they are already state-listed as threatened and no longer found in at least eight streams they once inhabited. Eastern hellbenders also are a high-priority species in the State Wildlife Action Plan, the comprehensive strategy that guides DNR efforts to conserve biological diversity.

During this year's sampling season, Thomas and others surveyed stream stretches in the Toccoa, Nottely, Cartecay and Upper Little Tennessee River drainages, catching 36 hellbenders. They documented hellbenders in part of the Nottely that had not been sampled. But none were found in the Cartecay and Upper Little Tennessee reaches, where the large salamanders had been recorded before.

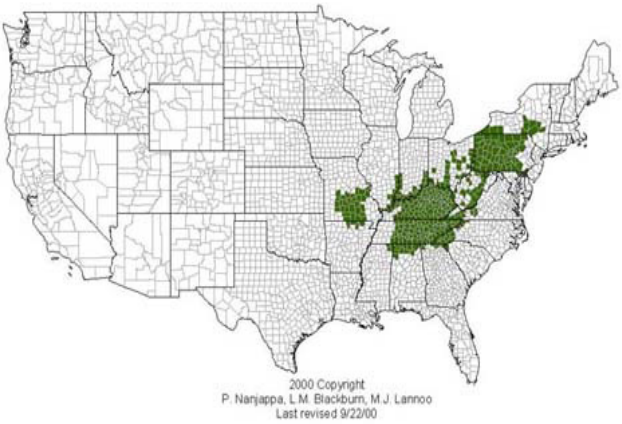
Surveys will begin again in the spring. The information will build on a 2005 Georgia survey and research in other states.

It will also help ensure the future of a seldom-seen salamander with a list of hard-to-forget nicknames.

What Can You Do?

- Anglers and others who see a hellbender are encouraged to report the occurrence and location to Thomas Floyd, at thomas.floyd@dnr.state.ga.us or (478) 994-1438.
- Help conserve rare, endangered and other non-game wildlife in Georgia. Buy or renew a bald eagle or hummingbird license plate, contribute to the Wildlife Conservation Fund state income tax checkoff or donate directly to the fund. All support the DNR Non-game Conservation Section, which receives no state general funds for its mission to conserve wildlife not legally hunted, fished for or trapped, as well as Georgia's rare plants and natural habitats in the state. Details: www.georgiawildlife.com/conservation

Hellbender *Cryptobranchus alleganiensis*



Survey Snapshot...

- In late August, Floyd led a small crew on the last survey of the monitoring season, which ends when hellbenders begin nesting. (Project video at www.youtube.com/GeorgiaWildlife, under "Conservation" tab.)
- Searchers ran their hands into gaps under large rocks in a Chattahoochee National Forest stream. They lifted some rocks and worked the suddenly turbid water underneath with nets. Floyd snorkeled deeper runs, trying to spot the almost-formless amphibians whose mottled brown and gray coloration blends with the streambed.
- On this trip, the group caught three hellbenders. Each was weighed, measured, swabbed to check for amphibian diseases, sampled for DNA and tagged with a Passive Integrated Transponder, or PIT, for future identification.
- During the entire 2011 monitoring season, 36 hellbenders were caught.

Hellbenders Are ...

- Fully aquatic salamanders, spending their entire lives in streams and rivers.
- Found in at least 20 Georgia trout streams. (Georgia is a top state in amphibian diversity.)
- Kin to Chinese and Japanese giant salamanders, which can top 100 pounds and 6 feet in length.
- Equipped with internal gills, yet they breathe almost exclusively through their skin.
- Usually docile when handled. But they can bite. Skin secretions make them difficult to handle.
- Death on crayfish, which make up most of their diet. They also eat small fish, snails, frogs, snakes, small mammals, and hellbender eggs and larvae.
- Long-lived. One reached 29 years in captivity.
- Threatened also by stream impoundment and pollution from agricultural and industrial runoff.
- Learn more: Hellbender monitoring project video, www.youtube.com/GeorgiaWildlife (under "Conservation" tab); DNR rare species profiles: www.georgiawildlife.com/rare_species_profiles

Reference

www.georgiawildlife.com/node/2815

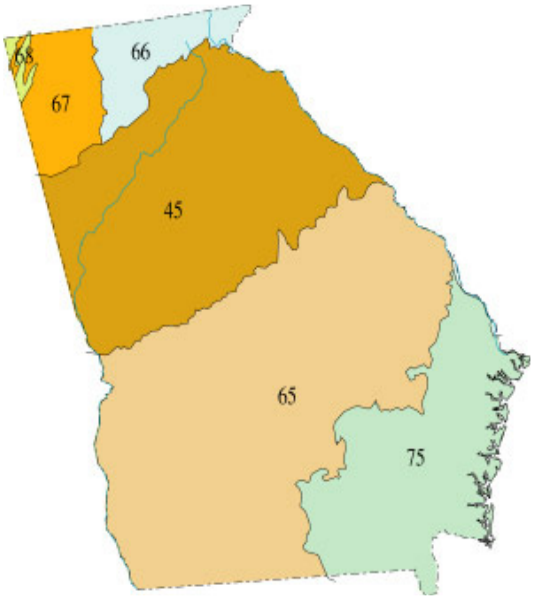

Andrew Hoffman, 2007

Georgia's Five Regions of Diversity

When the term "biodiversity" comes to mind, many people might think of the rain forests of South America or the Galapagos Islands, but relatively few might consider the State of Georgia as a place rich in biodiversity. This assemblage of diversity delicately depends upon the health of their habitat, which can be a small pool of water, a deep underground cavern, or the vast continental shelf extending off the coast into the Atlantic Ocean, and anywhere in between. When compared with all the states in the nation, Georgia ranks number 6 on the list for overall species diversity.

Biodiversity: *The variability among living organisms from all sources including terrestrial, marine and other aquatic ecosystems, and the ecological complexes of which they are part; this includes diversity within species, between species, and of ecosystems.*

So why is Georgia so rich in biological diversity? A look at the landscape will give some insight. The state's varying topography ranges from steep-sided valleys, mountain ridges, wide-open coastal plains, and the low-lying barrier islands and maritime ecosystems along the Atlantic coast. The five main ecoregions in Georgia are Blue Ridge, Ridge and Valley, Cumberland Plateau, Piedmont, and Coastal Plain. Each ecoregion is comprised of ecosystems that provide resident species seemingly limitless possibilities to find the nooks and niches they require to support their basic needs for survival.



45. Piedmont; 65. Southeastern Plains; 66. Blue Ridge; 67. Ridge and Valley; 68. Southwestern Appalachians; 75. Southern Coastal Plain

With a quick glance at a satellite map or while traveling the state by vehicle, one can easily notice the changes in topography, sometimes subtle, sometimes stark, but the contrasts between each of Georgia's five ecoregions are evident. Each ecoregion harbors species that require particular conditions and are limited to specific areas. Many species occur in more than one region, adding complexity to species interaction and interdependence. Each physiographic region reveals a degree of diversity that together ranks the state higher than 45 other states (including the District of Columbia). None of the ecoregions lie entirely within state borders, which places Georgia in a larger regional context, connecting our ecosystems to Texas and Maryland, and all the way to Maine.

It takes volumes to detail all of the organisms found within an ecoregion, so here is a very brief mention of some of the highlights and conservation priority habitats for each ecoregion found in Georgia.

The topography of the Blue Ridge region can be rugged, containing the steeper mountains with elevations from 1,600 to over 4,700 feet. The southern portion of the Blue Ridge is part of one of the most biologically significant ecoregions in the U.S. for nonvascular and vascular plants, natural communities, amphibians, snails and neotropical migrant birds. This ecoregion has the second highest hardwood and conifer diversity in North America as well as the third highest number of hardwood and conifer endemics. The clear water of the mountain streams offers superb habitat for cold-water fish, such as the native Brook Trout (*Salvelinus fontinalis*), because they need high levels of oxygen that only cold, flowing water can provide. Areas of sheltered and unique habitats called Cove Hardwood Forests support diverse populations of canopy trees and understory growth because the soil captured during runoff is nutrient rich. On the other hand, mountain bogs of the region support a different set of flora due to nutrient-poor soils.

Blue Ridge Region

Valley and Ridge Region

The Ridge and Valley is characterized by a series of parallel, southwest to northeast trending, narrow valleys and high ridges. One endemic species to the Ridge and Valley is the Common Map Turtle (*Graptemys geographica*), which depends on healthy streams and lakes and can only tolerate very low levels of pollution or river channelization. Other key species include Cherokee Darter (*Etheostoma scotti*), Large-flowered Skullcap (*Scuttelaria* sp.), Tennesssee Yellow-eyed grass (*Xyris* sp.). Fine examples of unique habitats found here include caves, rock outcrops and sag ponds.

Closely associated with the Ridge and Valley in Georgia is The Cumberland Plateau with its slightly higher elevations and flat-topped mountains. Cumberland Plateau caves offer habitat for several species of fish, salamanders, and crayfish that spend their entire lives inside the caves, while other species such as bats, rats, and crickets only spend part of their time in caves. Two species of bats, the Indiana Bat (*Mytosis sodalist*) and the Gray Bat (*Mytosis grisescens*), are found only in a handful of caves within the Cumberland Plateau of Northwest Georgia.

The Piedmont, or foothills of the Appalachian Mountains, is the oldest and most eroded part of the original Appalachian orogeny. Rolling hills with broad ridges that are irregularly and frequently dissected by drainages are typical for the Piedmont. While the Piedmont does not support as much biodiversity as adjacent regions, it is a key link between them and supports many of the species found in neighboring ecoregions. A particularly harsh habitat type found here is the rock outcrop. Georgia boasts a large number of rock outcrops including the largest in the world, Stone Mountain. Vernal pools form in rock outcrops and provide habitat for rare plants and animals. When rainfall is consistent, these wet depressions support dish gardens, a unique community of plants, mosses, and crustaceans, that exhibit distinctive rings of progressively drier habitat further from the wet center.

The Coastal Plain can be physically characterized by subtle topography, a warm to hot, humid, maritime climate, and soils derived primarily from unconsolidated sands, silts, and clays transported to the ecoregion by the weathering of the Appalachian Mountains. It is divided into two units: The Eastern Gulf Coastal Plain and the Atlantic Coastal Plain.

The portion of the Atlantic Coastal Plain in Georgia contains remnants of the Longleaf Pine woodlands and wiregrass that were once the dominant vegetation type in the Southeast. Fire-maintained Longleaf Pine woodlands are found across a wide range of soil moisture regimes, and support a large number of plant and animal species, including many endemics. Isolated wetlands, hammocks, ocean beaches, and dunes add incredible diversity of flora and fauna to the region as well. Georgia's coastline, though only about 100 miles in length, is unique in that its marshes account for nearly one third of the total salt marshes on the east coast of the United States.

Longleaf Pine Ecosystem

Meritime Ecosystem

The Eastern Gulf portion of this ecoregion has a diversity of ecological systems, ranging from sandhills and rolling Longleaf Pine-dominated uplands to pine flatwoods and savannas, seepage bogs, bottomland hardwood forests, barrier islands, dune systems, and estuaries. The East Gulf Coastal Plain ecoregion is one of the true hotspots of biodiversity and endemism. Many species, particularly vascular plants, reptiles, amphibians, and fishes occur only in this ecoregion, and many of those are even more narrowly limited within the ecoregion. This region has never been glaciated, and has been continuously occupied by plants and animals since the Cretaceous, giving ample time for the evolution of narrow endemic species. With only 5% of its original extent remaining, pinelands of the Coastal Plain are one of the most endangered landscapes in North America.

We have the precious gift of diversity, and though we may not feel it on a daily basis, this richness supports our life here. The healthier and better intact the ecosystems, the cleaner our water, air, and soil. We are interconnected and have placed ourselves as the stewards of our landscape. Find time to enjoy and appreciate what Georgia has to offer.

References

-States of the Union: Ranking America's Biodiversity. April 2002. NatureServe www.natureserve.org

-Sapelo Island National Estuarine Research Reserve, SINERR Management Plan www.sapelonerr.org

-Conservation Gateway, The Nature Conservancy
www.conservationgateway.org/content/ecoregional-reports

-A Comprehensive Wildlife Conservation Strategy for Georgia, GA DNR Wildlife Resources Division: www.wildlifeactionplans.org/pdfs/action_plans/ga_action_plan.pdf and www1.gadnr.org/cwcs/Documents/ecoregion.html

-International Union for Conservation of Nature (IUCN): www.iucn.org/what/tpas/biodiversity/about/?gclid=CLP_3rOA4awCFQLj7QodO0pLnQ

welcome

A.L. Burruss Elementary School
will be monitoring Ward Creek

HoneyFern School
will be monitoring Olley Creek

McEachern High School's Science Club
will be monitoring in the Noses Creek Watershed

North Cobb High School's SAVE Club
will be monitoring Proctor Creek

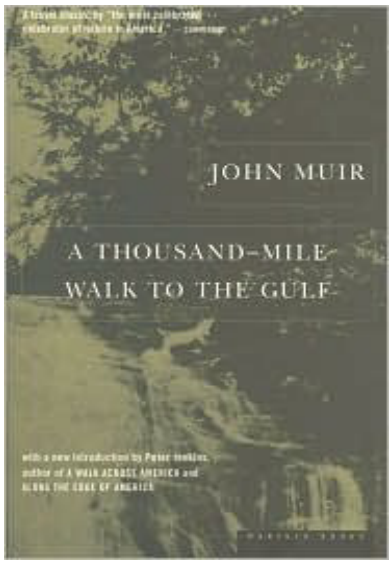
Riverstone Acedemy
will be montioring in the Ward Creek Watershed

Walton High School's Environmental Club
will be monitoring in the Sope Creek Watershed

PROGRAM NEWS

RECOMMENDED RESOURCE

A Thousand-Mile Walk to the Gulf
by John Muir



Here is the adventure that started John Muir on a lifetime of discovery. Taken from his earliest journals, this book records Muir's walk in 1867 from Indiana across Kentucky, Tennessee, North Carolina, Georgia, and Florida to the Gulf Coast. In his distinct and wonderful style, Muir shows us the wilderness, as well as the towns and people, of the South immediately after the Civil War. Founder of the Sierra Club, and its president until his death, Muir was a spirit so free that all he did to prepare for an expedition was to "throw some tea and bread into an old sack and jump over the back fence." In a world confronting the deterioration of the natural environment and an ever-quickening pace of life, the attraction of Muir's writings has never been.

John Muir (1838-1914), founder of the Sierra Club and a prime mover in the birth of the National Park movement, is the author of such classics as Our National Parks, My First Summer in the Sierra, and Travels in Alaska.

-Barnes and Noble Book Review

ANNOUCEMENT

Smyrna Recycling Center Now Collects Kitchen Grease!

We encourage all Cobb residents to use this service. Simply bring your kitchen grease, sealed in a container, to the recycling center for proper disposal.

The center also collects newspapers, magazines, bulk mail, phone books, clean #1 and #2 plastic bottles, corrugated cardboard, scrap metal, aluminum cans, large appliances ($35 fee for refrigerators and air conditioners), color-separated glass jars and bottles (lids may be placed in the metal bin), automobile batteries, metal food cans, cell phones, rechargeable batteries. Plastic grocery bags, clear newspaper sleeves and six-pack rings will be accepted in separate bins. American flags are collected at the Recycling Center for a proper ceremonial disposal.

The center will also accept computers, phones, monitors, and any other nonhazardous electronics. Help Keep Smyrna Beautiful by keeping all unnecessary items out of the landfill.

Please visit the website for more information:
http://www.smyrnavinings.com/smyrna-recycling-center/

Symrna Recycling Center
645 Smyrna Hill Drive, Smyrna, GA 30082
770-431-2869 or 770-431-2863
Open: Tuesday, Wednesday, Friday & Saturday 8am – 4pm;
Thursday 12pm – 8pm
(closed Sunday & Monday)

OBSERVATIONS

Gray squirrels and fox squirrels live throughout Georgia. Both species are breeding this time of year and will have a second mating season from June - July. An average litter size is 3, and only the mother squirrel raises the young. Their home is either in a leaf nest or in a cavity of some sort (a hole in a tree, a screech owl nest box, or perhaps your attic). Some folks enjoy watching the antics of squirrels while others get annoyed when their birdfeeders are raised. Still others find these furry-tailed rodents tasty, so they hunt them during Georgia's squirrel season from August 15 - February 28.

Linda May
Environmental Outreach Coordinator
Georgia DNR, Wildlife Resources Division

ECOPDIA

Time

Human perception has evolved to focus our senses on sizes and speeds of matter in finding food or safety or mates. We notice a flick of a leaf or the crack of a twig, which might once have meant the presence of a hungry tiger. We're continually, if unconsciously, aware of the positions and postures of other humans, and of both tame and wild animals we encounter. However, we cannot distinguish very rapid movements of a hummingbird's wings, and we manage to keep track of slow things, such as the turning of the years, only by keeping records.

On our human scale, much ecological change is too gradual to be perceptible. We're equipped to notice when a river is flooding, sending us and other creatures to higher ground. Fire, which is a special kind of rapid decomposition, is another ecological process that can easily be seen at work on a human time scale. But we tend to assume consistency and stability unless we look closely or refer to history.

From Ecology: A Pocket Guide

ANNOUNCEMENTS

Welcome to MIKE KAHLE

Mike joined our team in October as a part-time Environmental Programs Specialist. He will be teaching elementary school programs, assisting volunteers with storm drain marking and stream cleanups events, and helping develop new watershed stewardship programs. He has previously worked as Program Coordinator with The Nature Conservancy and as a Naturalist with both the Orange County Department of Education in California and at the Chattahoochee Nature Center. He earned a Bachelor of Science in Geography from the University of Nevada, Reno and enjoys teaching and interpreting the natural world.

CONSERVATION TIP

Packages/ Shipping

You don't have to put a box or an envelope inside a letter pack. Over one billion overnight shipping boxes and envelopes are used each year. If just one percent of those boxes were saved, it would be enough packaging for two holiday gifts for every child under the age of five in the United States.

From The Green Book

Cobb County Water System
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

January

5 Garden Work Day • 9am - 11am • Cobb County Water Quality Laboratory
12 Garden Work Day • 9am - 11am • Cobb County Water Quality Laboratory
19 Garden Work Day • 9am - 11am • Cobb County Water Quality Laboratory
26 Garden Work Day • 9am - 11am • Cobb County Water Quality Laboratory
26 Adopt-A-Stream Chemical Monitoring Workshop • 6pm-8:30pm • Cobb County Water Quality Laboratory

February

2 Garden Work Day • 9am - 11am • Cobb County Water Quality Laboratory
9 Garden Work Day • 9am - 11am • Cobb County Water Quality Laboratory
11 Adopt-A-Stream Biological Monitoring Workshop • 10am-3pm • Cobb County Water Quality Laboratory
16 Watershed Stewardship Fair • 7pm - 9pm • Cobb County Water Quality Laboratory
23 Garden Work Day • 9am - 11am • Cobb County Water Quality Laboratory
23 Adopt-A-Stream Bacteria Monitoring Workshop • 6pm-8:30pm • Cobb County Water Quality Laboratory

March

1 Garden Work Day • 9am - 11am • Cobb County Water Quality Laboratory
8 Garden Work Day • 9am - 11am • Cobb County Water Quality Laboratory
15 Garden Work Day • 9am - 11am • Cobb County Water Quality Laboratory
17 Adopt-A-Stream Confluence • Gwinnett Environmental & Heritage Center
22 Garden Work Day • 9am - 11am • Cobb County Water Quality Laboratory
30-31 Environmental Education Alliance of Georgia Annual Conference • Southwest Arts Center in south Fulton County

Events in blue are Cobb County Watershed Stewardship events.
More information can be found on our Calendar at www.cobbstreams.org.