

# the Thalweg

Watershed Stewardship Program

Fall 2014

Volume 11 Issue 4

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[www.cobbstreams.org](http://www.cobbstreams.org)



Follow our boards on Pinterest for environmental education and stewardship resources.

## *The Challenge Is On!*

The Cobb County Watershed Stewardship Program is excited to announce its latest volunteer initiative – **The Chattahoochee Basin Volunteer Challenge!** We have created this challenge to encourage community members to participate in and organize waterway related volunteer events in Cobb County's Chattahoochee Watershed over the next several months. This is a fun and exciting opportunity for individuals, clubs, scouts, families, community organizations, and businesses.

Why participate in the Challenge? *At the end of the contest, the individuals or groups that have accumulated the most volunteer service hours will win a free rafting trip on the Chattahoochee River with a park ranger from the National Park Service!* Plus, the watershed, and ultimately the Chattahoochee River, will be cleaner and healthier.

To participate in the Challenge, register yourself or your group on the Watershed Stewardship website: [www.cobbstreams.org](http://www.cobbstreams.org). **The deadline for registering is Monday, December 1st, 2014.**

Qualifying events must take place between August 1st, 2014 and April 30th, 2015 and be a waterway related service project. Challenge participants can organize their own service projects or participate in events offered by the Watershed Stewardship Program. Check the calendar on our website, or the list on page 6, for information about upcoming events. If organizing your own event, the Watershed Stewardship Program can provide supplies and support for waterway cleanup, storm drain marking, and privet pull projects.

**Submit information on all completed service projects by April 30th, 2015.** Winners will be notified on May 1st. The rafting trip is limited to 30 participants.

Want to learn more, register for the Challenge, or submit information about a completed service project?

Visit [watershed.cobbcountyga.gov/files/chattahoocheeBasin.html](http://watershed.cobbcountyga.gov/files/chattahoocheeBasin.html)  
Or contact us at [water\\_rsvp@cobbcounty.org](mailto:water_rsvp@cobbcounty.org) or 770-528-8214



*Read more about our upcoming volunteer opportunities on page 6...*

# Insecticides Similar to Nicotine Widespread in Midwest

By Alex Demas and Kathy Kuivila  
 U.S. Department of the Interior, U.S. Geological Survey  
 Originally released on July 24, 2014

**Insecticides similar to nicotine, known as neonicotinoids, were found commonly in streams throughout the Midwest, according to a new USGS study. This is the first broad-scale investigation of neonicotinoid insecticides in the Midwestern United States and one of the first conducted within the United States.**

Effective in killing a broad range of insect pests, use of neonicotinoid insecticides has dramatically increased over the last decade across the United States, particularly in the Midwest. The use of clothianidin, one of the chemicals studied, on corn in Iowa alone has almost doubled between 2011 and 2013.

“Neonicotinoid insecticides are receiving increased attention by scientists as we explore the possible links between pesticides, nutrition, infectious disease, and other stress factors in the environment possibly associated with honeybee dieoffs,” said USGS scientist Kathryn Kuivila, the research team leader.

Neonicotinoid insecticides dissolve easily in water, but do not break down quickly in the environment. This means they are likely to be transported away in runoff from the fields where they were first applied to nearby surface water and groundwater bodies.

In all, nine rivers and streams, including the Mississippi and Missouri Rivers, were included in the study. The rivers studied drain most of Iowa, and parts of Minnesota, Montana, Nebraska, North Dakota, South Dakota, and Wisconsin. These states have the highest use of neonicotinoid insecticides in the Nation, and the chemicals were found in all nine rivers and streams.

Of the three most often found chemicals, clothianidin was the most commonly detected, showing up in 75 percent of the sites and at the highest concentration. Thiamethoxam was found at 47 percent of the sites, and imidacloprid was found at 23 percent. Two, acetamiprid and dinotefuran, were only found once, and the sixth, thiacloprid, was never detected.

Instead of being sprayed on growing or full-grown crops, neonicotinoids can be applied to the seed before planting. The use of treated seeds in the United States has increased to the point where most corn and soybeans planted in the United States have a seed treatment (i.e., coating), many of which include neonicotinoid insecticides.

“We noticed higher levels of these insecticides after rain storms during crop planting, which is similar to the spring flushing of herbicides that has been documented in Midwestern U.S. rivers and streams,” said USGS scientist Michelle Hladik, the report’s lead author. “In fact, the insecticides also were detected prior to their first use during the growing season, which indicates that they can persist from applications in prior years.”

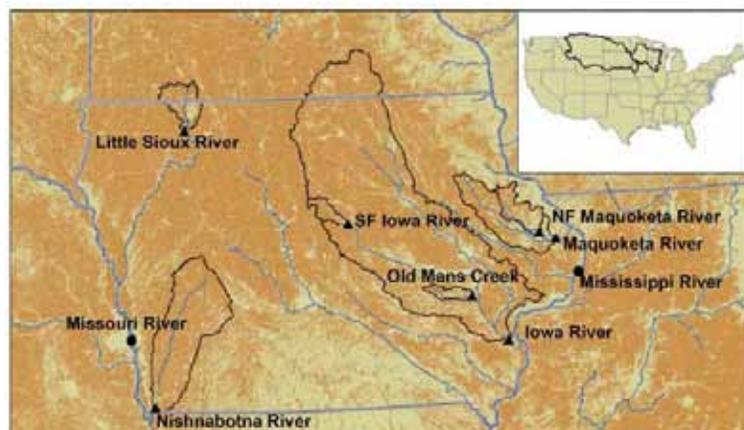
One of the chemicals, imidacloprid, is known to be toxic to aquatic organisms at 10-100 nanograms per liter if the aquatic organisms are exposed to it for an extended period of time. Clothianidin and thiamethoxam behave similarly to imidacloprid, and are therefore anticipated to have similar effect levels. Maximum concentrations of clothianidin, thiamethoxam and imidacloprid measured in this study were 257, 185, and 42.7 nanograms per liter, respectively.

The U.S. Environmental Protection Agency has classified all detected neonicotinoids as not likely to be carcinogenic to humans.

The paper, “Widespread occurrence of neonicotinoid insecticides in streams in a high corn and soybean producing region, USA” and has been published in *Environmental Pollution*: [www.sciencedirect.com/science/article/pii/S0269749114002802](http://www.sciencedirect.com/science/article/pii/S0269749114002802).

Learn more about the study and the long-term USGS effort to gather information on the environmental occurrence of new pesticides in different geographic, climatic, and use settings here: <http://toxics.usgs.gov/highlights/neonics.html>.

To read the full press release online, visit [www.usgs.gov/newsroom/article.asp?ID=3941#.VBc9UpRdWNa](http://www.usgs.gov/newsroom/article.asp?ID=3941#.VBc9UpRdWNa)



• Border River Site  
 ▲ Agricultural Site  
 State Border  
 Watershed Boundary  
 Cultivated Crops

*Locations of sites in Iowa sampled for neonicotinoids in 2013. Watersheds for the Mississippi River and Missouri River sites are shown in the inset.*

# Bachman's Sparrows Highlight Grassland Restoration Success

*Georgia Wild: News of nongame and natural habitats*  
Volume 7, Issue 10, August 11, 2014  
A Georgia Department of Natural Resources Publication



What do you call the discovery of Bachman's sparrows at Joe Kurz Wildlife Management Area?

DNR senior wildlife biologist Nathan Klaus calls it "the ultimate measure of success" for native grassland restoration at the Meriwether County WMA.

Here's why. Not only were two of the iconic grassland sparrows – state-listed as rare and uncommon in the Piedmont – banded and released July 25 at Joe Kurz, but both were juveniles. And two other males were heard singing. All suggests Bachman's sparrows are nesting at the WMA near Gay. The closest known population is at Fort Benning, some 60 miles away.

"Over the years we've had some good results, but this takes the cake," wrote Klaus, who works for the agency's Nongame Conservation Section.

Klaus and Game Management Section biologists who manage Joe Kurz – Theron Menken does now – began transforming old agricultural fields and Bermuda grass pastures into native warm-season grasslands 13 years ago. Southeastern grasslands, often referred to as savannas, consist of open areas and forests with low, diverse groundcover. Such grasslands once covered swaths of the eastern U.S. But development and agriculture hammered them, along with many songbird species and other wildlife tied to the fire-adapted habitat. (Pastures and hayfields do provide some lesser-quality grassland habitat for birds.)

Work to restore grasslands at Joe Kurz and Panola Mountain State Park has been supported by the Georgia Ornithological Society and Georgia's Important Bird Areas Program. Regional Game Management Supervisor Kevin Kramer said the goal at Joe Kurz is "improving the habitat for all wildlife," from songbirds to game species such as northern bobwhites and wild turkeys.

These tracts planted in species such as big bluestem and maintained by prescribed fire have drawn scores of birds – a bobwhite was banded there this year and a "hatch-year" loggerhead shrike in 2013 – and other wildlife, including deer. Then came the Bachman's, a grassland-loving, ground-hugging sparrow rated in decline, largely because of the loss and degradation of longleaf pine savannas.

Charlie Muise, Georgia Important Bird Areas Program coordinator, heads the Joe Kurz banding station and had hoped for a Bachman's, considering the thriving grassland and a thinned pine tract nearby. But when the first juvenile turned up in a net, he took extensive measurements before convincing himself it was a Bachman's. Then another juvenile was caught, and two adult males were heard singing.

Klaus says the sparrows and other evidence, such as native grass species that weren't planted showing up in restoration areas, affirm that the restoration is on target. The hope now is Joe Kurz becomes a source for Bachman's sparrow populations across the region.

## What's in a name?

There's no debate that Bachman's sparrow is named in honor of the Rev. John Bachman, a South Carolina minister, naturalist and collaborator with John James Audubon. The disagreement is how to pronounce his name: *Back-man* or *Bock-man*? Authorities come down on both sides.

To read the full article online, visit [content.govdelivery.com/accounts/GADNR/bulletins/c8e123](http://content.govdelivery.com/accounts/GADNR/bulletins/c8e123)

In the fall, we are used to seeing squirrels and chipmunks filling their cheeks with food and storing it for use over the colder months. However, they are not the only backyard visitors to do this. Have you ever noticed one of your feeder visitors taking a seed and flying away with it instead of eating it right there? At this time of year, our feathered friends that overwinter here will start caching, or hiding, seeds, especially chickadees, nuthatches, and titmice. Caching helps birds survive during cold weather when food sources are low. They may store hundreds of seeds a day, each in a different location, remembering for the most part where each seed is located. In addition to seeds, they will also store nuts, insects, and other invertebrate prey in between bark, knotholes, shingles, on the underside of small branches, and underground.

## OBSERVATIONS



Carolina Chickadee (*Parus carolinensis*)



# Bats of Cobb County



Bats make up 25 percent of all mammal species and are the only mammals that are truly capable of flight. They can be found all over the world with the exception of polar regions and extreme deserts. Of the 1,100 bat species worldwide, sixteen are found in Georgia and eleven are thought to inhabit Cobb County.

While some species of bats may feed on fruit, nectar, fish, lizards, frogs, birds, rodents, other bats, or blood, 70 percent of bats consume insects. Some insectivorous bats can eat over 1000 mosquito-sized insects in one hour. A study of a colony of 20 million Mexican free-tailed bats in one cave in Texas found that they can eat 200 tons of insects each night. All of the bat species in Georgia are insectivores, eating half their weight in insects every night and helping to keep our insect population under control.

Detecting sound waves through echolocation helps these nocturnal and crepuscular predators find their food. High-pitched sounds emitted from the mouth bounce off of objects and return as echoes, letting the bat know the size of objects, how far away they are, and how fast they are traveling. However, since bats cannot echolocate when their mouth is full, some species squeak through their nose, many with elaborate nasal outgrowths that direct the sound. Compared to their head, bat ears are huge, and muscles inside the ears contract and relax with the burst of sound, blocking the outgoing squeaks but receiving the echo.



Northern Long-Eared Bat.  
Photo Source: [www.fws.gov](http://www.fws.gov)

Not all bats live in caves, but some species will hibernate in caves in the winter and then will live behind bark, in trees or man-made structures including homes and bridges during the warmer months. Some even use animal burrows, termite nests, flowers, or even giant spider webs for shelter. They roost upside down, wrapping their wings around their bodies like a cloak to keep warm. Bat wings are made of a very strong yet thin and soft membrane of velvety skin which covers their hand bones and connects to their back and legs. Most take off by dropping from a hanging position and land by slowing down, stalling, and then grabbing hold of a branch or other surface with their feet.

Female bats will often mate in the fall but do not become pregnant until they ovulate in the spring. The mother gives birth while hanging from her feet and catches the baby with her wings. For their size, bats are the slowest reproducing mammals on Earth, most having only one pup per year. The pup can weigh up to 25 percent of its mother's body weight. They are born naked and blind and are often raised in large female nesting colonies, using sound and smell to find each other.

In upcoming editions of *The Thalweg*, we will continue our topic on bats, delving into the many factors affecting bat populations, including white nose syndrome. We will also discuss how declines in bat populations affect the ecosystem and our food supply.

The species information below is based on a 2007 publication by the Department of Natural Resources, Wildlife Resources Division.

## Tri-Colored Bat (*Perimyotis subflavus*)

Found throughout Georgia, the Tri-colored bat, or Eastern Pipistrelle, is one of the smallest bats in Eastern North America. Each hair on its coat contains three different colors with black at the base, yellow in the center, and brown or reddish on the tips. It is the first to emerge in late afternoon or dusk and hunts insects by forest edges as well as near streams and over water. Sometimes using its tail membrane as a pouch to capture food, it will bend its head to grab the insect with its teeth while eating on the fly. This little bat is very sensitive to freezing temperatures and is the first to enter hibernation, settling deep within caves where the temperature is stable, and one of the last to emerge.

Weighing in at about a quarter of an ounce, this small bat only grows to about 3.5 inches and is the one north Georgians most commonly find in their attics and in caves. One of the first to emerge during early evening, along with the tri-colored, a single little brown bat can catch and eat about one thousand mosquitoes per hour. With a life span of almost forty years, this is one of the world's longest-lived mammals for its size.

## Little Brown Bat (*Myotis lucifugus*)

## Northern Long-Eared Bat (*Myotis septentrionalis*)

A medium sized bat inhabiting the northern two thirds of Cobb County, the northern long-eared has been proposed to be federally listed as an endangered species. While its genus name means "mouse-eared," this bat is distinguished by its long ears compared to other *Myotis* species. During the summer, they can be found singly or in colonies, mostly roosting underneath bark or in crevices of snags as well as live trees. In the winter they seek out large caves or mines with no air current and high humidity, sometimes causing droplets of water to form on their fur. Emerging at dusk, they catch insects on the wing as well as those lying motionless on vegetation and water surfaces.

## Gray Bat (*Myotis grisescens*)

Found in the northwest of both Cobb County and Georgia, the gray bat has been considered an endangered species since 1976 due to human disturbance and habitat loss. Being mostly cave dwellers all year long, they hibernate in deep, vertical caves in the winter. In the summer they move to caves made of limestone karst that are scattered along rivers, where they feed on aquatic and terrestrial insect along the water's edge.



*Hoary Bat.*  
Photo Source: [www.nrri.umn.edu](http://www.nrri.umn.edu)

### Hoary Bat (*Lasiurus cinereus*)

Found throughout Cobb County and Georgia, the hoary bat is more widespread than any other bat in the Americas. It gets its name from the white tips on its dark brown fur, giving it a frosty gray (or hoary) appearance. One of the largest bats in North America, weighing in at a hefty one ounce, they can grow to 5-6 inches with a wingspan of 16-17 inches. From its roost in trees, caves, or rock crevices, it emerges after dark, staying above the tree canopy. Unlike most bats, female hoarys can have two to four pups. It is the only bat and native land animal from Hawaii and is considered endangered in that state.

### Seminole Bat (*Lasiurus seminolis*)

Occurring in the Piedmont and Coastal Plain area of Georgia, including a thin sliver of southeastern Cobb County, the Seminole bat is very furry, especially its tail. The base of each hair is a mahogany brown with frosted tips that give it a distinctively red color. They are solitary creatures that don't typically hibernate but rather fall into torpor during extended cold spells. They are found mostly in pine trees and Spanish moss roosting, and they tuck their young within the folds of the moss. Like the hoary bat, they can have one to four pups at one time, each the size of their mother by the time they are two weeks old.

### Eastern Red Bat (*Lasiurus borealis*)

Similar in many ways to the Seminole bat, the eastern red bat is medium size, solitary, and has fur that is a distinctive red color at its base with white tips, making it appear more orange. Preferring trees to caves, they like to roost in lush hangs of Spanish moss or in the foliage, camouflaging as a red leaf. They feed during the early evening, hunting in orchards and shady groves for winged nocturnal insects and beetles. Unlike their Seminole brethren, however, the eastern red bats inhabit all of Cobb County and Georgia and the females are able to have up to four pups.



*Eastern Red Bat.*  
Photo Source: [www.nrri.umn.edu](http://www.nrri.umn.edu)



*Big Brown Bat.*  
Photo Source: [ninnessacahlife.wichita.edu](http://ninnessacahlife.wichita.edu)

### Big Brown Bat (*Eptesicus fuscus*)

The big brown bat is another one of the first to emerge in the evening and one of the larger bats here in Georgia, found throughout Cobb County and the state. They are found in almost all habitats including those around humans, as they are very hardy and not as sensitive to environmental conditions as other bat species. Reaching speeds of up to 40mph, they are also one of the fastest flying bats, preferring beetles over other insects and using their powerful jaws to chew through the exoskeleton.

### Evening Bat (*Nycticeius humeralis*)

The small-bodied evening bat looks like a younger version of a big brown bat with the same glossy brown fur and black face, feet, and wings. They are slow flyers that start feeding high in the early evening, flying lower as the evening progresses and it becomes darker. The loss of old growth forests has prevented this species from roosting in hollow trees, so they are now commonly found in tree crevices, behind bark, and in wooden buildings. Coexisting well with humans, they eat many insects considered pests. They are found throughout Cobb County and Georgia.

### Silver-Haired Bat (*Lasionycteris noctivagans*)

The solitary, medium-sized silver-haired bat has black fur tipped with silver and is one of the most common bats in North America. It occurs throughout Cobb County and in the Piedmont and mountainous regions of Georgia. They spend the colder months hibernating in the south, roosting up high behind loose bark, piles of wood, cliff crevices, cave entrances, and human dwellings. They migrate to the northern part of the United States and Canada in the spring to raise their babies.

### Brazilian Free Tailed Bat (*Tararida brasiliensis*)

The lower half of Cobb County along with the rest of the Piedmont and the Coastal Plain is where you will find the Brazilian free-tailed bat here in Georgia. With a face only a mother could love, they have big ears, short noses, and wrinkly upper lips with strong legs that are good for climbing. They have long, narrow, pointed wings which allow them to have quick, direct flights. The female's milk has the highest fat content (28 percent) of any other bat, which helps their pups grow fast.



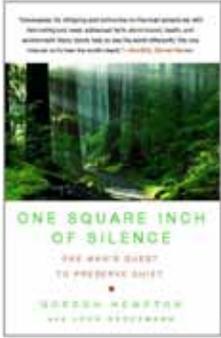
*Brazilian Free Tailed Bat.*  
Photo Source: [www.nrri.umn.edu](http://www.nrri.umn.edu)

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## RECOMMENDED RESOURCE

**One Square Inch of Silence: One Man's Quest to Preserve Quiet**

By Gordon Hempton and John Grossmann



In the visionary tradition of Rachel Carson's *Silent Spring*, *One Square Inch of Silence* alerts us to beauty that we take for granted and sounds an urgent environmental alarm. Natural silence is our nation's fastest-disappearing resource, warns Emmy-winning acoustic ecologist Gordon Hempton, who has made it his mission to record and preserve it in all its variety—before these soul-soothing terrestrial soundscapes vanish completely in the ever-rising din of man-made noise.

Recalling the great works on nature written by John Muir, John McPhee, and Peter Matthiessen, this beautifully written narrative, co-authored with John Grossmann, is also a quintessentially American story—a road trip across the continent from west to east in a 1964 VW bus. But no one has crossed America like this. Armed with his recording equipment and a decibel-measuring sound-level meter, Hempton bends an inquisitive and loving ear to the varied natural voices of the American landscape—bugling elk, trilling thrushes, and drumming, endangered prairie chickens. He is an equally patient and perceptive listener when talking with people he meets on his journey about the importance of quiet in their lives. By the time he reaches his destination, Washington, D.C., where he meets with federal officials to press his case for natural silence

preservation, Hempton has produced a historic and unforgettable sonic record of America. With the incisiveness of Jack Kerouac's observations on the road and the stirring wisdom of Robert Pirsig repairing an aging vehicle and his life, *One Square Inch of Silence* provides a moving call to action. More than simply a book, it is an actual place, too, located in one of America's last naturally quiet places, in Olympic National Park in Washington State.

[Amazon.com](http://Amazon.com)

## ANNOUNCEMENTS

*Continued from front cover:*

## Volunteer with Watershed Stewardship

As part of the Chattahoochee Basin Volunteer Challenge, the Watershed Stewardship Program is offering the following volunteer opportunities.

Dates and locations are subject to change. Please register in advance by emailing [water\\_rsvp@cobbcounty.org](mailto:water_rsvp@cobbcounty.org) or calling 770-528-8214.

### November 1st, 2014 • Storm Drain Marking in the Olley Creek Watershed • 9am-12pm

Help educate the community about stormwater pollution by joining us and other volunteers as we mark storm drains in the Olley Creek watershed.

*Location: Meet at the Cobb County Water Quality Laboratory - 662 South Cobb Dr, Marietta 30060*

### December 13th, 2014 • Privet Pull on Nickajack Creek at Heritage Park with the Native Plant Society • 10am-12pm

Privet is a non-native, invasive plant that out-competes native species. At this event, we'll be working with the Georgia Native Plant Society to remove privet from the landscape around Nickajack Creek at Heritage Park.

*Location: Heritage Park - 60 Fontaine Rd, Mableton 30126*

### February 14th, 2015 • Privet Pull on Olley Creek at Fair Oaks Park • 10am-12pm

Bring your Valentine and help us remove privet from the landscape around Olley Creek at Fair Oaks Park.

*Location: Fair Oaks Park - 1460 West Booth Rd Ext, Marietta 30008*

### March 28th, 2015 • Storm Drain Marking in East Cobb • 9am-12pm

At our second storm drain marking event of the Challenge, we will mark drains and collect litter in neighborhoods in east Cobb.

*Location: Meet at the Cobb County Water Quality Laboratory - 662 South Cobb Dr, Marietta 30060*

### April 11th, 2015 • Stream Cleanup in Southwest Cobb • 9am-12pm

Do you know that all roadside litter eventually ends up in our waterways? Help us clean a local stream in the southwest region of Cobb County, preventing the litter from reaching the Chattahoochee River and potentially flowing all the way to the Gulf of Mexico!

*Location: TBD*

### May 16th, 2015 • Rafting trip on the Chattahoochee River for the winning volunteer group!

Join naturalist Jerry Hightower of the National Park Service for a River Corridor Multi-discipline Field Study by raft on the Chattahoochee River. The winning group will float a three-mile section of the river from Powers Island to Paces Mill at US Hwy 41, exploring plants, geology, and wildlife, including an extraordinary array of spring wildflowers. There are three mild Class 1.5 rapids suitable for beginners along this part of the river. The Palisades have narrow floodplains and steep ridges rising to over 1,000 feet. The area offers a great diversity of habitats and includes oak-hickory forest, steep north-facing slopes, mesic ravine forest, and floodplain forest.

Created by the geologic action of the Brevard Fault, the river, and the effects of weather, this is a rugged and beautiful section.



We post twice weekly updates, workshop information, natural history tidbits, and more!



Follow our boards on Pinterest for environmental education and stewardship resources.



# Stewardship Stars Excellence in Data Collection

The following volunteers have submitted data each month during the June, July, and August quarter:

- Anne Ledbetter - Chemical & Bacterial Monitoring on Poplar Creek
- David Zandstra - Chemical Monitoring in the Rubes Watershed
- Fairfax Consulting - Chemical & Bacterial Monitoring in the Powder Springs Watershed
- Friends of Gable Creek - Chemical Monitoring in the Sope Watershed
- George Aycock - Chemical Monitoring in the Etowah Watershed
- Keep Smyrna Beautiful Adopt-A-Stream - Chemical Monitoring in the Rottenwood Watershed
- Mitzy Gann - Visual & Anuran Monitoring in the Butler Watershed
- Pam Subalusky - Chemical Monitoring in the Willeo Watershed
- Pope High School - Chemical Monitoring on Piney Grove Creek
- Sally Brooking - Chemical Monitoring on Sope Creek
- Sharon and Rick Donato - Anuran Monitoring in the Rubes Watershed
- Sierra Club Cobb Centennial Group - Chemical, Biological, & Bacterial Monitoring in the Rottenwood Watershed
- Village North Highlands Subdivision - Chemical & Bacterial Monitoring in the Willeo Watershed

**Thank you for your hard work and dedication!**



**Raven Cliff Falls**  
Caroline Hall  
Grade 3  
Keheley Elementary, Marietta, GA  
Teacher: Annette Simpson  
2014 Georgia Rivers of Words State Art Winner

w e l c o m e

Richard's Creek  
Chemical Monitoring in the Allatoona Watershed

Griffin Watercats  
Chemical Monitoring in the Nickajack Watershed

## ECOPEDIA

### Zoonosis

A zoonosis is any disease or infection that is naturally spread between animals to humans. These diseases are caused by bacteria, viruses, parasites, and fungi that are carried by animals and insects. Examples are anthrax, dengue, Ebola hemorrhagic fever, *E. coli* infection, Lyme disease, malaria, Plague, Rocky Mountain spotted fever, *salmonellosis*, and West Nile virus infection. People can get zoonotic diseases from contact with infected live poultry, rodents, reptiles, amphibians, insects, and other domestic and wild animals. About 75% of recently emerging infectious diseases affecting humans are diseases of animal origin, and approximately 60% of all human pathogens are zoonotic.

[www.cdc.gov](http://www.cdc.gov)

**Save the Date!**  
**Thursday, February 26th, 2015**  
**Annual Watershed Stewardship Fair**

We hope you'll join us on the evening of Thursday, February 26th, 2015 for our annual Watershed Stewardship Fair! Take a lab tour, meet fellow Cobb County volunteers, share your stream observations and project goals, and chat with environmental professionals. The event will be held at the Cobb County Water Quality Laboratory (662 South Cobb Drive, Marietta, GA 30060) from 6:30 - 8:30 PM.

## CONSERVATION TIP

### Lawn Mowers and Leaf Blowers

Throughout the year, we as homeowners maintain our yards by cutting the grass and blowing fallen leaves. Surprisingly, our gas powered lawn equipment puts an exponential amount of pollution in the air. In fact, if you were to use a lawn mower for just one hour, it would be the equivalent of driving a car for a hundred miles. In a study to compare the emissions of a leaf blower to a full sized pickup truck, the leaf blower released over 299 times the amount of hydrocarbons as the pickup did. Trade in your gas powered lawn equipment for mowers and leaf blowers that run on electricity. They're quiet and clean, and gas powered lawn mowers cost about \$5 a year to run. Better yet, use a push mower and rake.

[Go Green, Live Rich](http://GoGreen.LiveRich.washingtonpost.com)  
[www.washingtonpost.com](http://www.washingtonpost.com)

**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

## October

- 2 Garden Work Day • 8:30am - 10:30am • Cobb County Water Quality Laboratory
- 3 Outdoor Learning Symposium • 8:30am - 4:00pm • Chattahoochee Nature Center • Roswell, Georgia • [www.eealliance.org](http://www.eealliance.org)
- 9 Garden Work Day • 8:30am - 10:30am • Cobb County Water Quality Laboratory
- 9 Rain Barrel Make & Take Workshop • 2:00pm - 3:00pm • Cobb County Water Quality Laboratory
- 10 Landscaping and Septic Tanks Lunch & Learn • 12:00pm - 1:00pm •  
Cobb County Water Quality Laboratory • [www.cobbmastergardeners.com](http://www.cobbmastergardeners.com)
- 11 Adopt-A-Stream Visual Monitoring Workshop • 9:00am - 3:00pm • Butler Creek, Kennesaw
- 16 Garden Work Day • 8:30am - 10:30am • Cobb County Water Quality Laboratory
- 23 Garden Work Day • 8:30am - 10:30am • Cobb County Water Quality Laboratory
- 23-24 Project WET Facilitator Workshop • Phinizy Swamp Science Center • Augusta, Georgia • [www.gaprojectwet.org](http://www.gaprojectwet.org)
- 30 Garden Work Day • 8:30am - 10:30am • Cobb County Water Quality Laboratory

## November

- 1 Storm Drain Marking in the Olley Creek Watershed • 9:00am - 12:00pm • Cobb County Water Quality Laboratory
- 5 Adopt-A-Stream Bacterial Monitoring Workshop • 6:00pm - 8:30pm • Cobb County Water Quality Laboratory
- 6 Garden Work Day • 8:30am - 10:30am • Cobb County Water Quality Laboratory
- 10-11 WET, WILD, & PLT Educator Workshop • Forston 4-H Center • Hampton, Georgia • [www.gaprojectwet.org](http://www.gaprojectwet.org)
- 13 Garden Work Day • 8:30am - 10:30am • Cobb County Water Quality Laboratory
- 20 Garden Work Day • 8:30am - 10:30am • Cobb County Water Quality Laboratory
- 20 Project WET Educator Workshop • Georgia Association of Water Professionals • Marietta, Georgia • [www.gaprojectwet.org](http://www.gaprojectwet.org)

## December

- 4 Garden Work Day • 8:30am - 10:30am • Cobb County Water Quality Laboratory
- 11 Garden Work Day • 8:30am - 10:30am • Cobb County Water Quality Laboratory
- 13 Privet Pull on Nickajack Creek • 10:00am - 12:00pm • Heritage Park
- 18 Garden Work Day • 8:30am - 10:30am • Cobb County Water Quality Laboratory

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