

# the Thalweg

Watershed Stewardship Program

Spring 2017

Volume 14 Issue 2

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## Earth Day A Brief History...

Each year, Earth Day—April 22—marks the anniversary of the birth of the modern environmental movement in 1970. The height of counterculture in the United States, 1970 brought the death of Jimi Hendrix, the last Beatles album, and Simon & Garfunkel's "Bridge Over Troubled Water." War raged in Vietnam and students nationwide overwhelmingly opposed it...Earth Day 1970 gave voice to that emerging consciousness, channeling the energy of the anti-war protest movement and putting environmental concerns on the front page.

**The Idea...**for a national day to focus on the environment came to Earth Day founder Gaylord Nelson, then a U.S. Senator from Wisconsin, after witnessing the ravages of the 1969 massive oil spill in Santa Barbara, California. Inspired by the student anti-war movement, he realized that if he could infuse that energy with an emerging public consciousness about air and water pollution, it would force environmental protection onto the national political agenda. Senator Nelson announced the idea for a "national teach-in on the environment" to the national media; persuaded Pete McCloskey, a conservation-minded Republican Congressman, to serve as his co-chair; and recruited Denis Hayes from Harvard as national coordinator. Hayes built a national staff of 85 to promote events across the land. April 22, falling between Spring Break and Final Exams, was selected as the date.

On April 22, 1970, 20 million Americans took to the streets, parks, and auditoriums to demonstrate for a healthy, sustainable environment in massive coast-to-coast rallies. Thousands of colleges and universities organized protests against the deterioration of the environment. Groups that had been fighting against oil spills, polluting factories and power plants, raw sewage, toxic dumps, pesticides, freeways, the loss of wilderness, and the extinction of wildlife suddenly realized they shared common values. Earth Day 1970 achieved a rare political alignment, enlisting support from Republicans and Democrats, rich and poor, city slickers and farmers, tycoons and labor leaders. By the end of that year, the first Earth Day had led to the creation of the United States Environmental Protection Agency and the passage of the Clean Air, Clean Water, and Endangered Species Acts. "It was a gamble," Gaylord recalled, "but it worked."

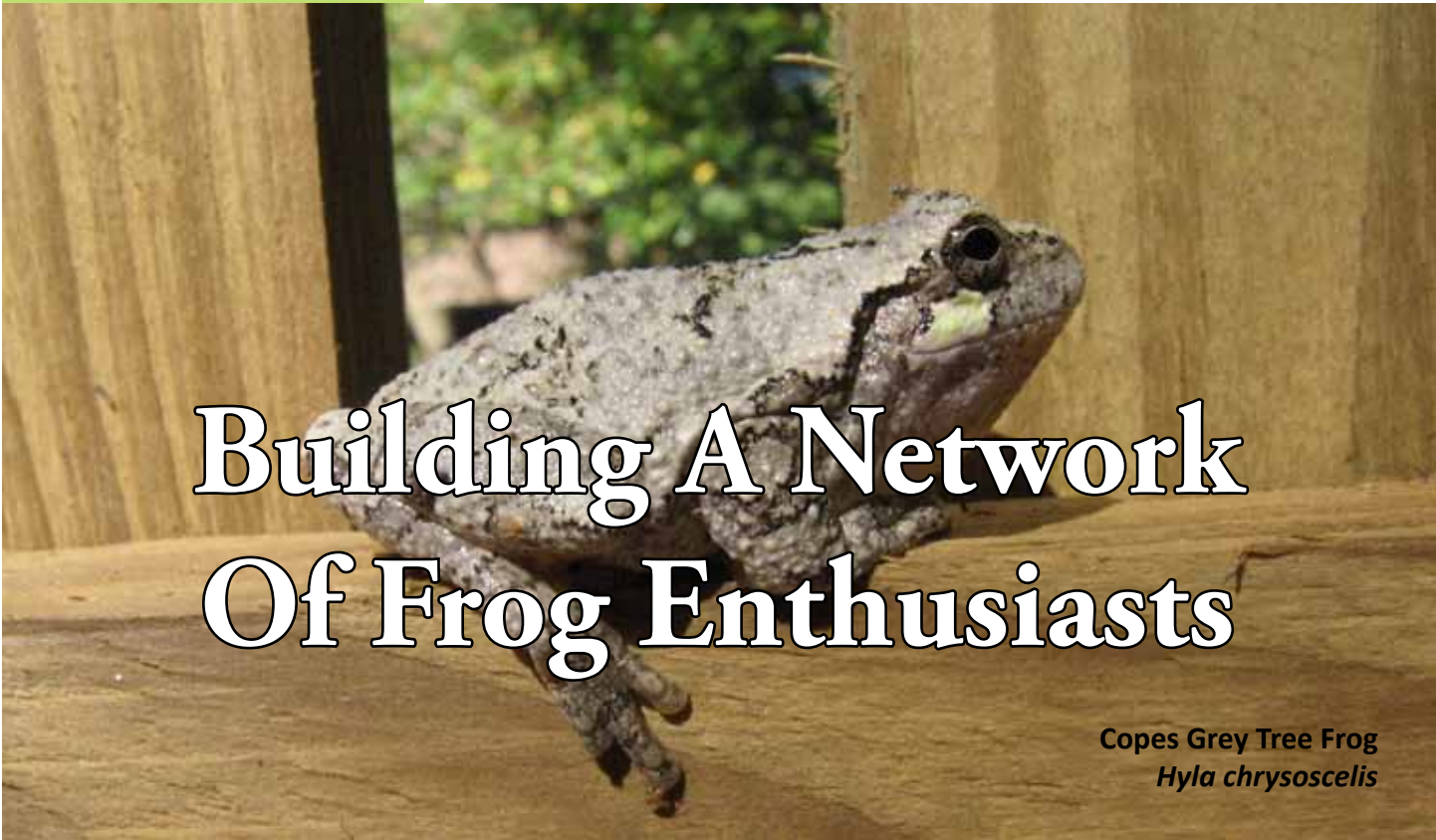
*Excerpt from The History of Earth Day, published by Earth Day Network, <http://www.earthday.org/about/the-history-of-earth-day/>*

## Volunteer for Earth Day 2017 - Creek Cleanup at Tramore Park

Get outdoors and do something meaningful for Mother Earth this Earth Day!

Saturday, April 22<sup>nd</sup> from 10:00am to 1:30pm, we will be pulling trash from Olley Creek at Tramore Park. Tramore, located at 2150 East-West Connector, is a county park that needs a lot of love. We cleaned Tramore Park last August, and found tires, plastic bags, 35-gallon drums, bottles and cans, soccer balls and tennis balls, a volleyball net, a plastic heart, and a purple arm cast. We did not make it very far down Olley Creek before we ran out of daylight so we definitely want to go back.

Each volunteer receives a Rivers Alive t-shirt and community service hours. To register for this free event, go to our website, [www.cobbstreams.org](http://www.cobbstreams.org), click on *Calendar* at the top, and click on April 22<sup>nd</sup>. See you at the creek!



# Building A Network Of Frog Enthusiasts

**Copes Grey Tree Frog**  
*Hyla chrysoscelis*

The plucking of a loose banjo string...a thumb rubbing the teeth of a comb...two marbles being tapped together...did you know these sounds mimic those made by our native frogs? It is great to be able to identify frogs and toads by sight but even more valuable to be able to identify species by their calls.

Trained volunteers are going out after sunset as citizen scientists to monitor the frogs and toads near where they live. They will submit their data to us throughout the year. The Watershed Stewardship Program is partnering with two other Metro Atlanta organizations to collect data on the number and diversity of frogs and toads in the four-county area of Fulton, Dekalb, Gwinnett, and Cobb. Carissa Venable Bishop coordinates the Frog Watch USA program for Zoo Atlanta. Mark Mandica, of The Amphibian Foundation, coordinates the Metro Atlanta Amphibian Monitoring Program with 34 active monitoring sites. Together, we are recruiting and training volunteers and providing them with the resources they need to monitor amphibians.

In Cobb County, we have 15 confirmed species of frogs and toads, as well as 14 species of salamanders. By listening and submitting their findings, our volunteers, called Ribbits, can provide us with much-needed information on the health and status of our urban amphibian populations. Through our partnership with Frog Watch USA and The Amphibian Foundation, the data our volunteers collect can be used to identify potential sites for conservation and habitat restoration.



40 people attended our Frog Monitoring Workshop on March 14, 2017.

Our Zoo Atlanta/Frog Watch USA colleague, Carissa, hosts an annual Frog Watch training for new volunteers. She also encourages frog enthusiasts to visit Zoo Atlanta's new Amphibian/Reptile Building called Scaly Slimy Spectacular. Georgia's native frogs and toads have their own special habitat there.

Mark Mandica houses a teaching collection of native and exotic reptiles and amphibians at his lab, based in the Blue Heron Nature Preserve

in Buckhead. He offers programs for adults and youth and hosts a Critter Camp each summer. He is currently raising federally-endangered Flatwoods Salamanders as part of a recovery program to release salamanders back into longleaf pine habitat.

While Cobb County has hosted Frog Monitoring Workshops for several years, this expanded partnership is a new effort. We encourage those that have an interest in learning more to join us this spring and summer.

The Watershed Stewardship Program is hosting twice-a-month sunset Frog Walks in parks throughout Cobb County this spring. We are also holding a second Frog Monitoring Workshop on Thursday, June 1<sup>st</sup> at the Blue Heron Nature Preserve. Details on all these activities are shared on the adjacent page. Individuals age 8 and older are welcome.

Please join us and help our frogs and toads by becoming a Cobb County Ribbit!



# Spring Frog Walk Schedule

Monday, April 3rd  
Noonday Creek Trail  
Meet at IHOP parking lot,  
1950 N. Cobb Parkway, Kennesaw  
(corner of Cobb Parkway & Vaughn Road)  
Start at 7:00pm, sunset at 8:01pm

Tuesday, April 18th  
Lost Mountain Park  
Meet at playground equipment next to Senior Center  
501 Mount Park Drive, Powder Springs  
(corner of Dallas Highway & Mars Hill Road)  
Start at 7:15pm, sunset at 8:13pm

Thursday, May 4th  
Corp Property/Allatoona Creek Park  
Meet at southwest corner of gravel parking lot  
5690 Old Stilesboro Road NW, Acworth  
(west of County Line Road)  
Start at 7:30pm, sunset at 8:25pm

Tuesday, May 16th  
Dodgen Middle School  
Meet in the parking lot at the main entrance  
1725 Bill Murdock Road, Marietta  
Start at 7:30pm, sunset at 8:35pm

Thursday, June 14th  
Powder Springs Park  
Meet at front entrance parking lot off Brownsville Road  
3899 Brownsville Road, Powder Springs  
Start at 7:45pm, sunset at 8:51pm

Tuesday, June 27th  
Big Shanty Park  
Meet past soccer fields, at the end parking lot  
2050 Kennesaw Due West Road, Kennesaw  
Start at 7:45pm, sunset at 8:54pm



## Fun Frog Fact

Frogs have very special skin! They don't just wear it, they drink and breathe through it. Frogs don't usually swallow water like we do. Instead they absorb most of the moisture they need through their skin. Not only that, but frogs also rely on getting extra oxygen (in addition to what they get from their lungs) from the water by absorbing it through their skin. Because frogs get oxygen through their skin when it's moist, they need to take care of their skin or they might suffocate. Sometimes you'll find frogs that are slimy. This is because the frog skin secretes a mucus that helps keep it moist. Even with the slimy skin, these frogs need to stay near water.

Toads on the other hand have tougher skin that doesn't dry out as fast, so they can live farther from water than most frogs.

## Frog Monitoring Workshop

Become a Cobb County Ribbit and you will learn about the frogs and toads of Cobb County, receive great resources to take home, meet some live creatures while touring the the Amphibian Foundation Lab, and practice your listening and frog and toad identification skills with experts. Once trained, our Ribbits adopt a place near their home to monitor vocalizations once a week and submit the data to us each month. It's a great way to learn about your home place, get outdoors and meet your neighbors, and help Cobb County and our partners collect data about local urban frog and toad populations.

Date/Time: Thursday, June 1st, 6:00pm-9:00pm  
Location: Blue Heron Nature Preserve (in Buckhead)  
4055 Roswell Road NE, Atlanta GA 30342  
Register: Go to our website, [www.cobbstreams.org](http://www.cobbstreams.org),  
click on *Calendar* at the top, and click on June 1st.  
Cost: FREE

Workshop experience is designed for an adult audience. Families are welcome to attend, although activity is most suited for age 8 and up.

*Watershed Stewardship staff member Sonya Wood Mahler led a frog pond chorus at the March 14th workshop. The June 1st workshop will focus more on data collection and identification, preparing participants to work independently in the field.*





Photo credit: <https://tinyurl.com/mhtpoec>

# Study Concludes Coyotes Help Manage Deer Population in Southeast U.S.

*Diane Banegas  
Forest Service Research & Development*

*The wily canine thrives in its adopted region but questions remain about its impact on other species*

Coyotes have become a force in the southeastern U.S. that can no longer be ignored in deer management, said John Kilgo, a Forest Service research wildlife biologist. He and his colleagues arrived at that conclusion after spending the last decade studying coyote-deer interactions in South Carolina.

Coyotes, a species native to the western U.S., gradually colonized the southeast during the latter half of the 20th Century. Their migration coincided with a decline in overabundant deer populations in some areas.

“Coyotes generally do not prey on adult deer in the southeast, but they were known to prey on fawns,” Kilgo said. “We wanted to know if this predation had become a big enough force to regulate deer populations.” His research results will help natural resource managers maintain deer populations at levels beneficial to ecosystem health and deer hunting, an economically important activity in the southeast.



*Forest Service Research Wildlife Biologist John Kilgo with a fawn*

The scientists began studying fawns in 2006 at the U.S. Department of Energy’s Savannah River Site in Aiken and Barnwell counties, South Carolina. The study was a cooperative effort between the Forest Service’s Southern Research Station, South Carolina’s Department of Natural Resources, and the Savannah River Site. The scientists attached radio collars to fawns and monitored them for several months to find out how many succumbed to the coyotes and whether the total number killed could explain the declining deer population.

Vaginal implant transmitters, or VITS, in the does signaled fawn births, allowing the scientists to find newborn fawns and put radio-collars on them. They tracked about 40 fawns each year for several years. The collar transmitters emitted a “mortality signal” when the collar was immobile for four hours. When the scientists arrived at the scene, they determined the cause of death and in cases of predation, collected DNA from saliva found on the fawn to determine if the predator was a coyote or another species such as a bobcat.

The scientists tracked 216 fawns over seven years. The number of fawns killed by coyotes was much higher than expected, and the predation level was high enough to affect deer populations but not high enough to control populations by itself.

“The combination of fawns killed by coyotes and deer taken by hunters together caused the downward trend,” Kilgo said. “Before coyotes arrived in the area, hunting was barely able to keep up with expanding deer populations. In that respect, the coyotes are a good thing. If populations decline so much that managers have to suspend or shorten a deer season, it won’t be considered a good thing, especially by hunters.”

Asked why hunters couldn’t simply start hunting coyotes to help deer, Kilgo replied that coyotes can be hunted and trapped but in addition to being wily, they are highly prolific and very adaptable to their new region. Coyotes

eat almost anything, vegetation as well as meat. They eat everything from roadkill to rabbits to wild fruits. Hunting and trapping usually aren’t very effective at controlling their numbers.

Coyotes began migrating eastward throughout the latter half of the 20th Century. Once restricted to the western plains, they now occupy most of the continent and have invaded farms and cities, where they have expanded their diet to include squirrels, household pets and discarded fast food. Land-use changes in the U.S., a growing human population, and a remarkable ability to adapt to new environments and conditions encouraged coyotes to expand into new habitats and thrive, while other predators faced with similar pressures dwindled and faced extinction.

Humans transporting coyotes to the southeast as hunting stock also sped up coyote establishment in the region. Coyotes were trapped in western states, illegally transported to the southeast, and released into pens for hounds to chase; inevitably, some escaped into the wild where, in typical coyote fashion, they adapted and thrived in the new habitat. The practice has pretty much stopped, but the coyote is here to stay. The coyote nuisance factor is a real one: crops and livestock are destroyed or damaged, household pets are killed, people even worry about their children, although coyotes in the Southeast have no record yet of

attacking humans, as they have in some western states like California.

Some biologists have suggested that beefing up the undergrowth in southern forests would make it more difficult for coyotes to find fawns, thereby allowing more to survive. On the contrary, Kilgo's research showed that fawns living in areas with dense understories were even more likely to be taken by coyotes. "It seems that dense undergrowth may just serve as a message to the coyotes that the brush is hiding something," Kilgo said. The scientists also extensively trapped coyotes to see if fawn survival was any better, but the results were mixed. They concluded the practice would be too expensive and labor intensive for most private landowners to adopt, given such uncertain benefit to fawns.

"The best way to ensure that more fawns survive is to shoot fewer does during hunting season because that means more fawns will be born the next spring," Kilgo concluded.

He and his research colleagues are now studying coyote populations themselves to get a handle on their population density. They extract DNA from coyote dropping, or scat, collected from across the area to identify how many individual animals were sampled and model their findings to determine population size.

The Savannah River Site, a national laboratory, is 300 square miles and managed by the Forest Service for the Department of Energy. Such protected sites become a haven for wildlife. The coyote population there increased throughout the 1980s-1990s, but it has remained stable since then. "They've reached the carrying capacity of the area," Kilgo said.

The scientists may have answered their questions about coyote-deer interactions in the southeast, but Kilgo's coyote research is far from done. He plans to study how they interact with other species in the region; in particular, he wants to know if wild pigs, which are also not native to the southeastern U.S., are influencing coyote populations. Pig carcasses typically remain in the woods when they are killed for population control, and this food source may increase carrying capacity for coyotes.

"We already know when it comes to canines such as wolves, coyotes, and foxes, the big dog wins," Kilgo said, citing the example of coyotes leaving Yellowstone Park after wolves were reintroduced there.

"Management strategies need to accept coyotes as a permanent presence in the southeast because we can't eliminate them. Instead, we need a better understanding of their effects on other species and the surrounding habitat," Kilgo said. "When it comes to coyotes, our questions still exceed our knowledge."

For more information, see these related publications:

- Predation by coyotes on white-tailed deer neonates in South Carolina*
- Can coyotes affect deer populations in southeastern North America?*

Source: <https://www.fs.fed.us/blogs/study-concludes-coyotes-help-manage-deer-population-southeast-us>

# OBSERVATIONS

## White-tailed Deer - *Odocoileus virginianus*



Female white-tailed deer (called does) give birth to fawns in late spring and early summer. Each doe may have one fawn, twins, or rarely triplets. At birth, a fawn's body measures only 1½ feet long and weighs 4-7 pounds. Its eyes are open, but weak legs don't allow for much standing or walking. Until the fawn is 2-3 weeks old and is strong enough to follow its mother, it stays hidden close to where it was born. Camouflaging spots on the fawn's coat mimic dabs of sunlight on the forest floor. Although a young deer may appear abandoned, its mother feeds nearby and frequently returns to nurse.

Photo credit: U.S. Fish and Wildlife  
<http://www.nhptv.org/natureworks/whitetaileddeer.htm>

Linda May  
Environmental Outreach Coordinator, Georgia DNR Wildlife Resources Division

## ECOPEDIA

### Carrying Capacity

The number of individuals of a particular species capable of surviving in a particular environment over long periods of time, and dependent on the effects of the limiting factors. Food supply, water supply, habitat space, and competition with other species are some of the limiting factors affecting the carrying capacity of a given environment. But in human population, other variables such as sanitation, diseases, and medical care are also at play.

Source: biology online  
<https://tinyurl.com/kjoqm5r>





## Stewardship Stars Excellence in Data Collection

*The following volunteers have submitted data each month during the December, January and February quarter:*

- Connie Ghosh** - Chemical, *E. coli* & Macro Monitoring in the Rubes Watershed
- ERM Atlanta** - Chemical Monitoring in the Chattahoochee Watershed
- Fairfax Consulting** - Chemical & *E. coli* Monitoring on Powder Springs Creek
- Keep Smyrna Beautiful AAS** - Chemical Monitoring in the Nickajack Watershed
- John Keiler** - Chemical Monitoring in the Allatoona Watershed
- Lakewood Colony** - Chemical & *E. coli* Monitoring in the Rubes Watershed
- Simon Locke** - Chemical & *E. coli* Monitoring on Butler Creek
- The Ochala Family** - Chemical & *E. coli* Monitoring on Nickajack Creek
- Richard's Creek** - Chemical Monitoring in the Allatoona Watershed
- Sierra Club Centennial Group** - Chemical, *E. coli* & Macro Monitoring on Rottenwood Creek
- Village N. Highland Subdivision** - Chemical, *E. coli* & Macro Monitoring in the Willeo Watershed
- Lassiter High School APES** - Chemical & *E. coli* Monitoring in the Rubes Watershed
- Walton HS AP Environmental Science Class** - Chemical Monitoring on Sope Creek
- Sedalia Park Target** - Chemical Monitoring in the Sope Watershed
- Emerson Unitarian Universalist** - Chemical Monitoring in the Noonday Watershed
- Albert Chen** - Chemical Monitoring in the Sewell Mill Watershed
- The Seigla Family** - Chemical Monitoring in the Butler Watershed
- Team Salty** - Chemical Monitoring in the Sope Watershed
- Bishop Lake and Five Tributaries** - Chemical Monitoring in the Willeo Watershed

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

By the River  
Fish swim,  
Crickets sing,  
Birds chirp,  
Frogs croak,  
Tadpoles hatch,  
Animals grow.

2016 Georgia River of Words Winner  
Finn Bennett  
Grade 1st  
Casa Montessori School, Marietta  
Teacher: Cyndia Hunnicutt

w e l c o m e

**Dominion Christian School**

Chemical Monitoring in the Allatoona Watershed

**Rosco Peters**

Chemical & *E. coli* Monitoring in the Rottenwood Watershed

**Ross Brill**

Chemical Monitoring on a tributary of the Chattahoochee River

**Ben Story**

Chemical Monitoring in the Willeo Watershed

## ANNOUNCEMENTS

### Chattahoochee Challenge Update



Since last July, our nine Chattahoochee Challenge teams have been working hard to complete as many water-related service activities as possible. These have included creek cleanups, privet pulls, storm drain marking projects, water quality monitoring, frog monitoring, and teaching younger students about streams. The competition ends Saturday, April 22nd with our big Earth Day Creek Cleanup at Tramore Park. The winning group gets to take up to 30 participants on a Chattahoochee River rafting trip with the National Park Service.

- Latest volunteer service hours for our 9 challenge teams:
- Keep Smyrna Beautiful: 286.5 hours
  - Lovinggood Middle School Student Council: 175.5 hours
  - Lassiter High School Green Club/AP Environmental Science: 167 hours
  - North Cobb Christian High School: 132.5 hours
  - Daughters of the American Revolution-Fielding Lewis Chapter: 78.25 hours
  - Campbell High School: 42 hours
  - Dodgen Middle School: not yet reported
  - North Cobb High School: not yet reported
  - Pope High School: not yet reported

**Best of luck to our competitors!**

### Quarterly Award Winners for Volunteer Service



#### Most Unusual Debris Found:

Lovinggood Middle School Student Council found a broken mirror while pulling privet at Fair Oaks Park in the Olley Creek watershed.

#### Most Debris Collected:

The Seigla Family collected 350 pounds of litter from Butler Creek. Even more impressive - it was 28 degrees outside when they did this project.



#### Watershed Spirit Award:

Mike Morceau helped to coordinate numerous service projects in his neighborhood, Ford Creek Estates, over the winter. He also participated in our ongoing privet removal efforts at Big Shanty Park.





The Watershed Stewardship Program is once again offering free community Rain Barrel Make & Take workshops. Rain barrels can be an important tool for water conservation and for protecting water quality and stream habitats. Excess stormwater can be collected and used for landscape irrigation, conserving potable water. Rain barrels also decrease excess runoff, which often collects pollutants such as litter, fertilizer, bacteria, sediments, and pesticides, and directly enters the streams without pre-treatment. The larger than normal volume of water often creates erosion of the banks and river beds. Rain Barrel Make & Take workshops are held once a month from April to October, on various days and times. All workshops last one hour and are open to Cobb County residents only, allowing one barrel per household. The workshop includes information about installing and utilizing rain barrels, all the needed materials, and step-by-step instruction on how to build and assemble your barrel. Making the barrel is simple, and no experience is necessary. At the end of the workshop you will drive away with a ready-to-use 35-55 gallon rain barrel.

**Announcing Our Spring 2017 Rain Barrel Make & Take Workshops!**  
 April 17 • 1:00pm - 2:00pm • Cobb County Water Quality Laboratory  
 May 17 • 9:00am - 10:00am • Cobb County Water Quality Laboratory  
 June 16 • 11:00am - 12:00pm • Cobb County Water Quality Laboratory

To register for a space in this free upcoming event, go to our website, [www.cobbstreams.org](http://www.cobbstreams.org) and click on *Calendar* at the top, then click on the workshop date.

## SEASONAL HAPPENINGS

### Homeschool Summer Science Series: Macroinvertebrate Study

**June 13 • 10am – 12pm • Macro Lab - Part One**

Learn to identify and index these organisms by creating your own field guide to take home. This class will utilize preserved specimens of common macroinvertebrates, which are used to help determine water quality in our streams and rivers. After successfully completing this class, participants will be familiar with 20 different organisms (how to identify them, where in the stream they can be found, and their level of sensitivity to water pollution).

**July 7 • 10am – 12pm • Macro Field Investigation - Part Two**

This class is intended to utilize the field guide participants created in Part One of this series, but it is not necessary that you participated in that class to attend this one. We will search for macroinvertebrates at a local creek and index our findings to determine the water quality of the stream.

**Appropriate for ages 7 and up. Pre-registration is required.**

**Parents/guardians/teachers must remain on site for the duration of these programs. No drop-offs please.**

Contact : [water\\_rsvp@cobbcounty.org](mailto:water_rsvp@cobbcounty.org)

## CONSERVATION TIP

### Soap

Use bars of soap versus liquid wash. It's less expensive, and it saves packaging waste. The average bar of soap lasts for about twenty showers, whereas a sixteen-ounce bottle of body wash lasts for an average of eighty showers. But body wash costs on average more than four times as much as soap. If every U.S. household replaced a bottle of body wash with a bar of soap, roughly 2.5 million pounds of plastic containers could be diverted from the waste stream.

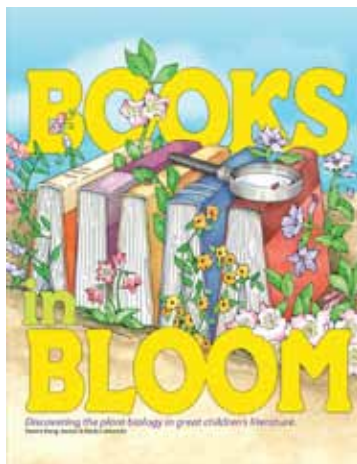
Source: *The Green Book*

### Build A Better World Summer Reading Series: Fairy House Building Workshops

Join our Fairy Habitat Helper Team in creating habitats for small creatures.

- June 8 • 12pm – 1pm • Stratton Public Library
- June 14 • 2pm – 3pm • Vinings Public Library
- June 20 • 2pm – 3pm • Acworth Public Library
- June 21 • 3pm – 4pm • Switzer Public Library
- June 22 • 2pm – 3pm • Powder Springs Public Library
- June 29 • 11am – 12pm • Kemp Public Library
- July 13 • 11:30am – 12:30pm • Kennesaw Public Library

## RECOMMENDED RESOURCES

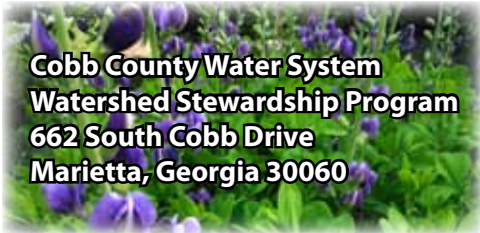


### **Books in Bloom** by Valerie Bang-Jensen & Mark Lubkowitz

"Books in Bloom invites children to learn about science while experiencing a great story. Each chapter features an outstanding children's book that is grounded in plant biology and provides engaging activities and lesson plans related to curricular standards. Books in Bloom provides an opportunity for everyone who reads and gardens with children to teach science through literature."

"This beautifully designed book aimed at Kindergarten to Fifth Grade teachers highlights seventeen works of children's literature, both fiction and non-fiction, that provide a springboard into biological concepts such as seed dispersal, soil composition, and the interrelationships of animals and plants. Published under the auspices of the National Gardening Association, *Books in Bloom* is a model of how connections between content areas can and should be developed. Full colored and accurate illustrations by Suzanne LeGault give the book immediate eye-appeal inviting teachers, parents, and children into indoor and outdoor adventures in literature and science."

Sources: [https://books.google.com/books/about/Books\\_in\\_Bloom.html?id=sl6KngEACAAJ](https://books.google.com/books/about/Books_in_Bloom.html?id=sl6KngEACAAJ)  
<http://tiny.cc/rw20jy>



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

- 3 Frog Walk • 7:00pm - 8:30pm • Noonday Creek Trail
- 4 Stewardship Storm Drain Marking Mob • 5:30pm-7:30pm • Kennesaw, The Hunt Club off Old Stilesboro Road
- 6 Garden Work Day • 9:00am - 11:00am • Cobb County Water Quality Laboratory
- 13 Garden Work Day • 9:00am - 11:00am • Cobb County Water Quality Laboratory
- 17 Rain Barrel Workshop • 1:00pm - 2:00pm • Cobb County Water Quality Laboratory
- 18 Frog Walk • 7:15pm - 8:45pm • Lost Mountain Park
- 19 Adopt-A-Stream Chemical Monitoring Workshop • 6:30pm - 9:00pm • Cobb County Water Quality Laboratory
- 20 Garden Work Day • 9:00am - 11:00am • Cobb County Water Quality Laboratory
- 22 Earth Day Cleanup • 10:00am-1:30pm • Tramore Park

May

- 3 Garden Work Day • 8:30am - 10:30am • Cobb County Water Quality Laboratory
- 4 Frog Walk • 7:30pm - 9:00pm • Corp Property, 5690 Old Stilesboro Road NW, Acworth (west of County Line Road)
- 9 Stewardship Storm Drain Marking Mob • 6:00pm-8:00pm • Kennesaw, Millstone & Sterling Point off Acworth Due West Road
- 11 Garden Work Day • 8:30am - 10:30am • Cobb County Water Quality Laboratory
- 12 Garden Work Day • 8:30am - 10:30am • Cobb County Water Quality Laboratory
- 13 Master Gardeners of Cobb County Garden Tour • 10:00am - 5:00pm • Cobb County Water Quality Laboratory
- 16 Frog Walk • 7:30pm - 9:00pm • Marietta, Dodgen Middle School
- 17 Rain Barrel Workshop • 9:00am - 10:00am • Cobb County Water Quality Laboratory
- 17 Adopt-A-Stream Bacteria Monitoring Workshop • 6:30pm - 9:00pm • Cobb County Water Quality Laboratory
- 18 Garden Work Day • 8:30am - 10:30am • Cobb County Water Quality Laboratory
- 25 Garden Work Day • 8:30am - 10:30am • Cobb County Water Quality Laboratory

June

- 1 Garden Work Day • 8:30am - 10:30am • Cobb County Water Quality Laboratory
- 1 Frog Monitoring Workshop • 6:00pm-9:00pm • Blue Heron Nature Preserve
- 6 Fairy House Workshop • 5:30pm-7:30pm • Green Meadows Preserve
- 7 Adopt-A-Stream Chemical Monitoring Workshop • 6:30pm - 9:00pm • Cobb County Water Quality Laboratory
- 8 Garden Work Day • 8:30am - 10:30am • Cobb County Water Quality Laboratory
- 13 Home School Summer Science Series - Part One • 10:00am - 12:00pm • Cobb County Water Quality Laboratory
- 13 Stewardship Storm Drain Marking Mob • 6:00pm-8:00pm • Powder Springs, Broadlands Lane off Midway Road
- 14 Frog Walk • 7:45pm - 9:15pm • Powder Springs Park, 3899 Brownsville Road, Powder Springs
- 15 Garden Work Day • 8:30am - 10:30am • Cobb County Water Quality Laboratory
- 16 Rain Barrel Workshop • 11:00am - 12:00pm • Cobb County Water Quality Laboratory
- 24 HHW Amnesty Day • 9:00am - 12:00pm • Jim R. Miller Park
- 27 Frog Walk • 7:45pm - 9:15pm • Big Shanty Park, 2050 Kennesaw Due West Road, Kennesaw

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