

# the Thalweg

Watershed Stewardship Program

Fall 2016

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## *Eco-Logical: Tips to Reduce Your Footprint With Septic Systems*

**SepticSmart Week September 19-23, 2016**

The latest episode in the Eco-Logical video series will help residents who have onsite sewage management systems, better known as septic systems. Septic systems are separate from the county sanitary sewer system. The main difference is septic systems treat wastewater onsite, instead of transporting waste to be treated at one of four water reclamation facilities in Cobb County.

Having an onsite septic system requires proper care and ongoing maintenance. Routine attention to your septic system reduces the potential for expensive repairs as well as health and environmental risks. This video introduces the basic functions of septic systems, care and preventative measures, and what to look for to tell if the system is not functioning properly. More information about septic systems can be found by contacting the Cobb & Douglas Health Department at [www.cobbanddouglaspublichealth.com](http://www.cobbanddouglaspublichealth.com) and at [cobbstreams.org](http://cobbstreams.org). For more information about SepticSmart week visit <https://www.epa.gov/septic/septicsmart-week-2016>.

Watch the Septic System episode, and others like it, at [www.cobbstreams.org/video](http://www.cobbstreams.org/video).



Before cleaning the septic system



After cleaning the septic system

# Kennesaw Mountain National Battlefield Park

## *Much More Than a Battlefield*

Photo Credit: Stephen Rahn, 2010, <http://tinyurl.com/zaja3fv>

Kennesaw Mountain National Battlefield Park is an historic National Park in the heart of Cobb County. You will find monuments, historical markers, cannon emplacements, and 22 miles of beautiful hiking trails. While many visitors go to Kennesaw Mountain for recreation, picnicking, botanizing, or birding, the Park's main purpose is to educate visitors about the importance of the Civil War in shaping our country's history and culture.

If you visit Kennesaw Mountain National Battlefield Park (KeMo), depending on the season and time of day, you may find the parking lots full to overflowing. You might see seniors and young runners inquiring about the many miles of hiking trails, families and Civil War buffs exploring the monuments and historical markers, or quiet visitors contemplating the place of one of the fiercest battles of the Civil War.

To acquaint yourself with the history and amenities, begin your visit at the visitor center with an excellent museum and historical film. The 45 minute film gives a historical synopsis and introduces visitors to the specific battles, culture, and representative figures of the time. It also includes a look at local farms as well as a few personal stories and contributions, including the perspective of women and freed slaves. Ranger talks are presented in the morning on most days and the civil war museum is also open to the public 9:00am - 5:00pm. Ranger led tours of the museum are given most afternoons.

After the visitors center you can enjoy a hike on the Environmental Trail, which begins in the picnic area across the parking lot. This 1.3 mile loop, with signs giving information about the area's natural history, is relatively easy, informative, and pretty. The most popular hike is to the top of the mountain, visited by many hikers and runners each day. If you are not up for the 1.2 mile hike to the top, visitors may drive to the parking lot at the top of the mountain during the week. On weekends, visitors may take a shuttle to the top for a small fee. At the top is a beautiful view of Atlanta and the surrounding area. After watching the film, it is easier to understand how the entrenched Confederates used the ridge tops of Big and Little Kennesaw Mountains as a natural blockade



Photo credit: <http://tinyurl.com/jpojve7>

to Union movement. While the greens of the trees and the bright sky are beautiful, visitors are usually quiet there, not only enjoying the view, but contemplating the battle and its results.

To discover a deeper history of Kennesaw Mountain, drive to nearby Kolb Farm and Cheatham Hill. Kolb Farm shows a preserved example of a middle class house typical of those owned in Cobb County in the mid-1800's. Peter Kolb was one of the earliest settlers in Cobb County, building this house in 1830. He operated his 600 acre farm with 10 enslaved workers. When

Federal troops approached the farm in 1864, the Kolb family, like many other families in this area, fled and did not return until the 1880's.

When you visit Cheatham Hill, you will see the embankments behind which Confederate soldiers held off advancing Union troops for days. You will see the open field called the "Dead Angle" where 3,000 Union soldiers lost their lives. Today, the area is a quiet, sunny meadow surrounded by woods. The 5.8 mile Kolb Farm/Cheatham Hill loop trail is popular among visitors. Along this moderately rolling hike you will pass cannons, the towering Illinois monument, a tunnel dug by Union troops, and interpretive signs which depict the troop movements and engagements of the battlefield.



Photo credit: rjcox, 2015, <http://tinyurl.com/jgk36ml>

Throughout the year, KeMo also hosts various programs that are open to the public. In April, a Junior Ranger Day was held for children to celebrate the 100th anniversary of the National Parks. Special events include artillery (cannon) demonstrations that take place each spring, infantry and civilian demonstrations, and a lecture series to educate the public on military and civilian life at Kennesaw Mountain during the Civil War. In August, families enjoyed outings at the Park's Centennial events such as movie night on the front field. KeMo also hosts monthly trail work days. These programs are often taught by volunteer members of The Cannon Crew Trail Club, The Kennesaw Mountain Trail

Club, or community partners. These are just a few of the examples of the hard work volunteers do at this site.

Over the summer, our staff partnered with NPS to facilitate free “Every Kid in a Park” programs at KeMo. As part of the ongoing NPS Centennial, the NPS will be providing, free of charge, a National Parks pass to all current 4th graders. This pass is available to all 4th graders or home-school equivalent, and allows the 4th grader and their family free access to all U.S. Bureau of Land Management, U.S. Bureau of Reclamation, National Oceanic and Atmospheric Administration, National Parks Service, U.S. Fish and Wildlife Service, U.S. Forest Service, and U.S. Army Corps of Engineers parks and lands. If you know of a 4th grader, visit <https://www.everykidinapark.gov/> to register for your free pass.

For more information about upcoming fall events, or to find out how to become a volunteer at the Park, please visit the Park’s website. [www.nps.gov/kemo](http://www.nps.gov/kemo).



Eastern Towhee. Photo credit: Jamie Chavez, 2015, <http://tinyurl.com/hacnk8h>



Kolb House. Photo credit: Stephen Rahn, 2010, <http://tinyurl.com/je5mqqr>

**Resources:**

Castel, Albert. Kennesaw Mountain and the National Campaign, National Park Civil War Series: Eastern National

Kennesaw Mountain Cheatham Hill & Kolb Farm Loop Trail [Internet]. Atlanta Trails; Available from: <http://www.atlantatrails.com/hiking-trails/cheatham-hill-kolb-farm-loop-trail/>

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## RECOMMENDED RESOURCE

### The Big Book of Nature Activities: A Year-Round Guide to Outdoor Learning by Jacob Rodenburg and Drew Monkman

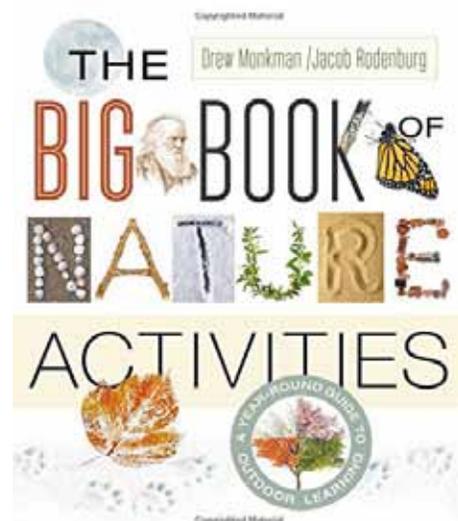
"The average child can identify over one thousand corporate logos, but only ten native plants or animals—a telling indictment of our modern disconnection from nature. Soaring levels of obesity, high rates of ADHD, feelings of stress and social awkwardness, and "Nature Deficit Disorder" are further unintended consequences of a childhood spent primarily indoors.

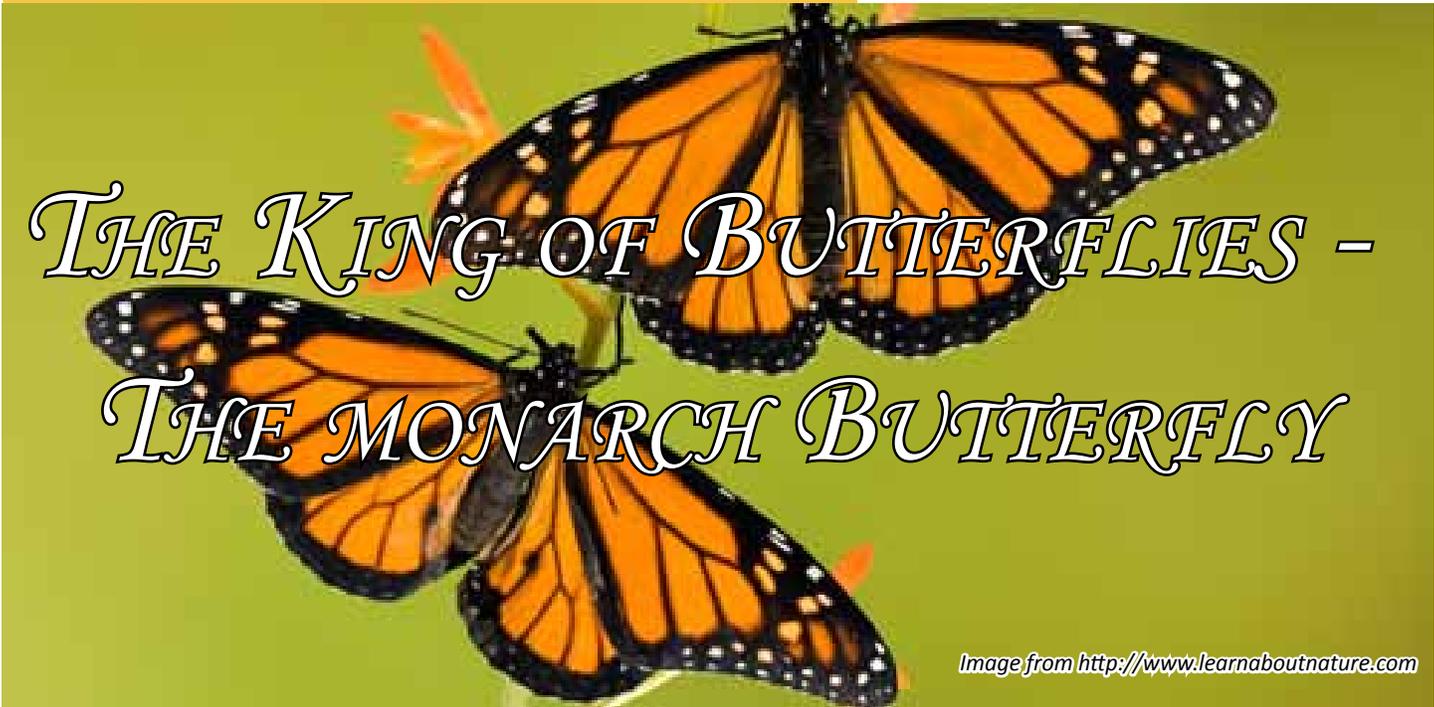
The Big Book of Nature Activities is a comprehensive guide for parents and educators to help youth of all ages explore, appreciate and connect with the natural world. This rich, fully illustrated compendium features:

Nature-based skills and activities such as species identification, photography, journaling, and the judicious use of digital technology. Ideas, games, and activities grounded in what's happening in nature each season. Core concepts that promote environmental literacy, such as climate change and the mechanisms and wonder of evolution, explained using a child-friendly, engaging approach. Lists of key species and happenings to observe throughout the year across most of North America.

Perfect for families, educators, and youth leaders, The Big Book of Nature Activities is packed with crafts, stories, information and inspiration to make outdoor learning fun."

Source: [https://www.amazon.com/Big-Book-Nature-Activities-Year-Round/dp/0865718024/ref=sr\\_1\\_1?ie=UTF8&qid=1467304423&sr=8-1&keywords=big+book+of+nature+activities](https://www.amazon.com/Big-Book-Nature-Activities-Year-Round/dp/0865718024/ref=sr_1_1?ie=UTF8&qid=1467304423&sr=8-1&keywords=big+book+of+nature+activities)





Monarch butterflies are the most beautiful of all butterflies, some say, and are considered the “king” of the butterflies, hence the name “monarch”. They are probably the most widely recognized butterfly, due to their distinct orange, black, and white wings. There are many unique and interesting facts to learn about the monarch butterfly, many of which we will explore.

### THE LIFE CYCLE OF THE MONARCH BUTTERFLY

Monarch butterflies go through four stages during one life cycle, and can go through four separate generations in one year. The four stages of the monarch butterfly life cycle are the egg, the larvae (caterpillar), the pupa (chrysalis), and the adult butterfly. The four generations are actually four different butterflies going through these four stages during one year until it is time to start over again with stage one and generation one.

In February and March, monarch butterflies come out of hibernation in Mexico and Southern California to find a mate. Then they migrate north and east in order to find a place to lay their eggs. This starts stage one and generation one of the new year for the monarch butterfly. In March and April the eggs are laid on milkweed plants. They hatch into baby caterpillars, also called the larvae. It takes about four days for the eggs to hatch. Then the baby caterpillar focuses on eating the milkweed in order to grow. After about two weeks, the caterpillar will be fully-grown and find a place to attach itself so that it can start the process of metamorphosis. It will attach itself to a stem or a leaf using silk and transform into a chrysalis. Although, from the outside, the 10 days of the chrysalis phase seems to be a time when nothing is happening, inside the chrysalis

it is a time of rapid change. Within the chrysalis, the old body parts of the caterpillar are undergoing a remarkable transformation, called metamorphosis, to become the beautiful parts that make up the butterfly that will emerge. The monarch butterfly will emerge from the pupa and fly away, feeding on the nectar from flowers and just enjoying the short life it has left, which is only about two to six weeks. This first generation monarch butterfly will die after laying eggs for generation number two.



Monarch Butterfly from a Chrysalis  
Photo from www.learnaboutnature.com



Monarch Butterfly Becoming a Chrysalis  
Photo from www.learnaboutnature.com

The second generation of monarch butterflies is born in May and June, and the third generation will be born in July and August. These monarch butterflies will go through exactly the same four stage life cycle as the first generation did, dying two to six weeks after it becomes a beautiful monarch butterfly.

The fourth generation of monarch butterflies is slightly different than the first three generations. The fourth generation is born in September and October and goes through exactly the same process as the first, second and third generations except for one part. The fourth generation of monarch butterflies does not die after two to six weeks. Instead, this generation of monarch butterflies migrate to warmer climates, like Mexico and Southern California, and will live for six to eight months until it is time to start the whole process over again.

### DIET

In the larval stage, monarch butterflies feed almost exclusively on the milkweed plant. The milkweed plant not only provides the larvae an abundance of food, the larvae ingest and absorb the toxins produced by the milkweed. These toxins make the larvae and adult butterflies taste horrible to predators! Adult butterflies get their nutrients from the nectar of flowers such as purple coneflower, summer phlox, and butterfly weed.



Monarch on Lantana

### THREATS TO MONARCH BUTTERFLIES

If they are dry, monarchs can survive below freezing temperatures, but if they get wet and the temperature drops they will freeze to death. With colder and wetter winter weather reaching further and further south, the monarchs may not be able to survive in their current habitats. Because hundreds of millions of monarchs are located in such a small area in the Sierra Nevada of Mexico during the winter, a cold snap there could be devastating.

As warmer summer weather reaches further north, suitable habitat will begin to move northward resulting in a longer migration. This means the monarchs could be forced to adapt and produce another generation to reach further north. It is uncertain whether they will be able to do so. Therefore, few monarchs may be able to make the longer trip back to Mexico for winter.

Other threats to the monarch include habitat loss and loss of milkweed which they depend upon as larva to survive. Illegal logging remains a problem today in Mexico in protected areas and is devastating monarch winter habitat.



Purple Coneflower

### WHAT CAN YOU DO?

Getting more butterflies to visit and live in your garden is easy; you plant what they like. The most important plants are called “larval host plants.” They are the ones butterflies need to lay their eggs on and that the hatched caterpillars (larvae) need to eat. Since monarchs only lay their eggs on milkweeds and related plants, include these plants in your garden. Although adult butterflies will visit lots of flowers for nectar, they will pass over a garden overflowing with flowers to get to one of their larval host plants. Finding these plants is essential for them to reproduce, and butterflies will travel long distances to get to them. It is a matter of survival.

#### Resources:

- <http://www.defenders.org/monarch-butterfly/basic-facts>
- <http://www.agr.georgia.gov/create-a-garden-to-attract-butterflies.aspx>
- <http://www.learnaboutnature.com/>

### WHEN CAN YOU EXPECT TO SEE MONARCHS?

We often receive questions asking when will monarchs first appear and when will their peak be in our area? Although this can be relatively predicted, the exact answer depends on a variety of factors such as wind direction and speed, cold fronts, and other unpredictable weather patterns. For our area, the peak of the monarch migration is predicted to be between September 29 and October 11, 2016. Monarchs will be traveling south during this time. As you are outside during this time, keep a record of the number of monarchs you see each day and see how accurate this prediction was! If you do not live in the Cobb County area, you can visit <http://www.monarchwatch.org/tagmig/peak.html> to determine the peak migration date for your area.



Butterfly Garden

Photo credit: <http://tinyurl.com/gvbcyw4>

"A RIVER IS MORE THAN AN AMENITY, IT IS A TREASURE"  
- JUSTICE OLIVER WENDELL HOLMES

Congratulations to Hannah Fortune, 2016 winner of the volunteer t-shirt design contest. Hannah graduated in May from Kennesaw State University with a Bachelor of Fine Arts degree in Art with a Concentration in Graphic Communications. Thank you to all the KSU art students who entered designs and to those who participated in the public voting. Congratulations again Hannah!

welcome  
new watershed stewards

Kait White - Frog Monitoring in the Nickajack Watershed

Kathleen McElroy - Bacterial Monitoring in the Noonday Watershed

Melinda Becker - Wildlife & Rain Garden Volunteer

Mother Earth Conservation - Bacterial Monitoring Rottenwood Watershed

Planters Hill Mud Creek - Chemical Monitoring in the Mud Watershed

WSP is on social media:

Find us on Facebook We post twice weekly updates, workshop information, natural history tidbits, and more!

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

Follow us on LinkedIn Follow our company page on LinkedIn.

Read our Rain & Wildlife Garden Phenology Blog

ANNOUNCEMENTS

Join the 2016-2017 Chattahoochee Challenge!

In this exciting challenge, scouts, families, clubs, community groups, and businesses are encouraged to attend and organize waterway events and projects in Cobb County. At the end of the contest, the group that has accumulated the most volunteer service hours receives a free rafting trip in May. The rafting trip will take place on the Chattahoochee River with Park Ranger Jerry Hightower. Plus local waterways will be cleaner and healthier!

We have scheduled several volunteer opportunities, including creek cleanups and storm drain events, to get the Challenge started! Upcoming events can be found on the calendar at cobbstreams.org. Register your group for the Challenge by December 1st.

Register your group now at www.cobbstreams.org located under Volunteer/Chattahoochee Volunteer Challenge

Adopt-A-Stream Visual Monitoring Workshop

Saturday, December 10, 2016 from 10:00am to 1:00pm

Come join us at Willeo Creek and learn how to assess your local stream. We will take water quality measurements, evaluate stream habitat, and conduct visual assessments of the stream including creating a cross section and conducting the Wentworth Pebble Count. This workshop is free and requires no prior experience. You will receive both the Getting to Know Your Watershed and the Visual Stream Survey manuals. Bring water, snacks and a folding chair! Dress comfortably for December weather and the outdoors. Comfortable walking shoes and/or rain boots/waders are also recommended as we will be in the stream.

Registration required at www.cobbstreams.org, located under Calendar



## 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, & Macro Monitoring in the Poplar Watershed

### **Bishop Lake and Its 6 Inflows**

Chemical & Bacterial Monitoring in the Butler Watershed

### **Chance Science**

Chemical Monitoring in the Noses Watershed

### **Connie Ghosh**

Chemical, Bacterial, & Macro Monitoring in the Rubes Watershed

### **David Zandstra Group**

Bacterial Monitoring in the Rubes Watershed

### **Donna Leavall**

Chemical Monitoring in the Olley Watershed

### **ERM Atlanta**

Chemical Monitoring in the Chattahoochee Watershed

### **Friends of Victory Heights Subdivision Park**

Chemical Monitoring in the Rottenwood Watershed

### **John Keiler**

Chemical Monitoring in the Allatoona Watershed

### **Keep Smyrna Beautiful AAS**

Chemical Monitoring in the Nickajack Watershed

### **Ochala Family**

Chemical & Bacterial Monitoring in the Nickajack Watershed

### **Sharon & Ric Donato**

Chemical & Anuran Monitoring in the Rubes Watershed

### **Sierra Club Cobb Centennial Group**

Chemical, Bacteria & Macro Monitoring in the Rottenwood Watershed

### **Simon Locke**

Chemical & Bacterial Monitoring in the Butler Watershed

### **Team Salty**

Chemical Monitoring in the Sope Watershed

### **Village North Highlands Subdivision**

Chemical, Bacteria & Macro Monitoring in the Rubes Watershed

### **Willeo Watershed Alliance of Loch Highland**

Chemical Monitoring in the Willeo Watershed

**Thank you for getting out every month  
in the heat & humidity!**

## Eastern Kingsnake

Eastern Kingsnakes are large, 36-48 inches, shiny-black, smooth scaled, with white or yellow chain-link bands that cross the back and connect along the sides. Kingsnakes have one of the largest geographic ranges of any North American snake species and are found in all areas of Georgia and South Carolina. They thrive in many habitats including hardwood and pine forests, bottomlands and swamps, hammocks, tidal wetlands, and even farm lands and suburban areas. This species is strongly terrestrial, but inhabits areas close to water such as stream banks and swamp borders. They are quite secretive and are frequently found under boards, tin or other cover objects. Kingsnakes are resistant to the venom of pit-vipers and they readily eat copperheads, cottonmouths, and rattlesnakes. Although they frequently rattle their tail, release musk, and bite upon capture, they generally tame quickly. Kingsnakes are protected throughout Georgia and cannot be kept as a pet.

Source: <http://srelherp.uga.edu/snakes/lamget.htm>

## SAVE THE DATE

Saturday, December 3, will mark the date for the next Household Hazardous Waste Amnesty Collection Day at Jim Miller Park. On this day, Cobb Water residential customers are invited to drop off products used around the house that contain chemicals that are hazardous to human and animal health or the environment. Products accepted include paint, mercury-containing devices, cleaners, lawn care products, and fluorescent bulbs. These products may be dropped off at no charge and will be properly recycled or disposed of. Pre-registration will be required. For more details on items accepted, registration, and times, stay tuned to upcoming events at [www.cobbstreams.org](http://www.cobbstreams.org).

## ECOPEDIA

**Aggradation**- to raise the grade or level of (a river valley, a stream bed, etc.) by depositing detritus, sediment, or the like.

*From: dictionary.com*



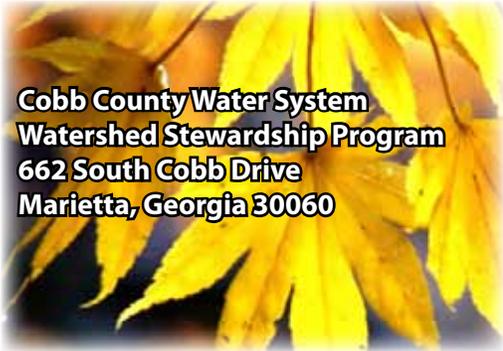
## CONSERVATION TIP

**Fall Leaves** - Many homeowners feel an obligation to rake and dispose of fallen leaves in their yard. A leaf layer actually creates a mini ecosystem for many wildlife species! They rely on this leaf layer for food and habitat. This fall, save time and energy and let your leaves say where they fall. If you must remove your leaves to comply with an HOA, consider composting or raking into your planting beds.

## OBSERVATIONS



Eastern Kingsnake  
Savannah River Ecology Laboratory  
Image on <http://srelherp.uga.edu/snakes/lamget.htm>



**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

- 1 Privet Pull • 10:00am - 12:00pm • Big Shanty Park
- 13 Garden Work Day • 8:30am - 10:30am • Cobb County Water Quality Laboratory
- 14 Outdoor Learning Symposium • Southwest Atlanta Christian Academy • <http://www.eealliance.org>
- 19 Rain Barrel Make & Take Workshop • 2:00pm - 3:00pm • Cobb County Water Quality Laboratory
- 19 Adopt-A-Stream Chemical Monitoring Workshop • 6:30pm - 9:00pm • Cobb County Water Quality Laboratory
- 20 Garden Work Day • 8:30am - 10:30am • Cobb County Water Quality Laboratory
- 22 Storm Drain Marking Project • 9:00am - 12:00pm • Sibley Forest Subdivision & Sope Creek Elementary School

### November

- 1 Stewardship Mob Creek Cleanup • 5:00pm - 7:00pm • Sweat Mountain Park
- 3 Garden Work Day • 9:00am - 11:00am • Cobb County Water Quality Laboratory
- 5 Fairy Pumpkin House Workshop • 9:30am-11:30am • Oregon Park
- 10 Garden Work Day • 9:00am - 11:00am • Cobb County Water Quality Laboratory
- 16 Adopt-A-Stream Chemical Monitoring Workshop • 6:30pm - 9:00pm • Cobb County Water Quality Laboratory
- 17 Garden Work Day • 9:00am - 11:00am • Cobb County Water Quality Laboratory
- 19 Storm Drain Marking Project • 2:00pm - 5:00pm • Neighborhoods near Kennesaw State University

### December

- 1 Registration deadline for Chattahoochee Challenge groups-visit [cobbstreams.org](http://cobbstreams.org)
- 1 Garden Work Day • 9:00am - 11:00am • Cobb County Water Quality Laboratory
- 3 Household Hazardous Waste Collection Amnesty • 9:00am - 12:00pm • Jim Miller Park
- 8 Garden Work Day • 9:00am - 11:00am • Cobb County Water Quality Laboratory
- 10 Adopt-A-Stream Visual Monitoring Workshop • 10:00am - 1:00pm • Willeo Creek area
- 15 Garden Work Day • 9:00am - 11:00am • Cobb County Water Quality Laboratory

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