

# Annual Report

Watershed Stewardship Program  
2016-2017

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During the  
2016-2017 reporting year,  
20,607 community members participated  
in the Watershed Stewardship Program.

Volunteer Programs:  
1,813 participants,  
1,025 training hours,  
6,035 volunteer service hours

Community Programs:  
2,456 participants, 193 hours

School Programs:  
16,338 students, 398 instruction hours

*This report summarizes Cobb County Water System's program to educate the community about issues impacting local water quality, to foster good habits and responsible behaviors, and to promote an ethic of respect for and a connection to our natural resources.*

Cobb County's Watershed Stewardship Program is part of Cobb County Government's effort to educate residents of the county on various issues related to improving the quality of life for ourselves and future generations. The activities and events facilitated by the Watershed Stewardship Program are designed to fulfill Cobb County Water System's education requirements as outlined by the Metro North Georgia Water Planning District and the Georgia Environmental Protection Division.

## Vision

We envision all Cobb County residents becoming ecologically literate, understanding their role in water quality and environmental health.

## Mission

Cobb County's Watershed Stewardship Program promotes respect for our environment by educating the community about the connection between behavior and water quality.

## Message From Watershed Stewardship Program (WSP) Staff

Helping train and guide students has always been one of our core program roles. This year, WSP staff has focused on solidifying a more influential mentor and internship program. To ensure students have an enriching and balanced experience, we have developed guidelines and core components that promote a strong eco-literacy foundation for their project-based learning experience. Over the past several years, mentees and interns from various high school and colleges have aided stewardship staff with programs that embodied our education mission. During the summer of 2017, the WSP will participate in the Experiencing Cobb County Hands On (ECCHO) program. We are excited to have two paid interns in the office and field, who will bring a new perspective to our program and projects. In addition, to increase ecological literacy and reinforce the connection between personal behavior and water quality, WSP staff has implemented a more direct approach for our "call to action" strategy. The philosophy of empowering individuals to be more ecologically connected has always been a core focus of our programs. We believe that this refined effort will reinforce the content of our stewardship programs and encourage participants to continue stewardship practices beyond participating in our facilitated events.

The concept of personal impact, educated decision-making, and that as responsible individuals we all play a role in the health of our community is inherent in all our programming. Our Wildlife & Rain Garden Demonstration Project exemplifies these philosophies by showcasing how residents can take action to improve watershed health. The suburban landscape can be a mechanism for pollution prevention, urban wildlife habitat creation, and gardening without chemicals and GMO treated plants. In its thirteenth year, our garden no longer needs supplemental irrigation, provides habitat for birds, reptiles, mammals and is a testament to sustainable urban landscape practices. The garden demonstrates an effective way for residential and commercial properties to reduce their ecological footprint and illustrates the land ethic philosophy modeled by the Watershed Stewardship Program and staff. Focusing on successful efforts like our garden, allows staff to share experiences with implementing recommended practices and utilize unique resources to better serve Cobb's residents.

Most meaningful for us this year has been the development of deeper and more enriching relationships with the community. The WSP staff is looking forward to another productive year working with our partners, volunteers, and Cobb County residents.

-The Cobb County Watershed Stewardship Program

# SUMMARY OF ACTIVITY BY WATERSHED

	Water Quality Monitoring	Waterway Clean-ups	Storm Drain Marking	Privet Pulls	Community Education	School Outreach
<b>Chattahoochee</b>	●	●	●		●	●
Buttermilk			●		●	●
Mud	●		●			●
Mulberry	●					
Nickajack	●	●	●	●	●	●
Noses	●	●	●		●	●
Olley	●	●	●	●	●	●
Poplar	●				●	●
Powder Springs	●	●	●		●	●
Rottenwood	●	●	●		●	●
Sewell Mill	●	●	●		●	●
Sope	●	●	●		●	●
Sweetwater			●			●
Ward		●	●	●	●	●
Willeo	●	●	●		●	●
<b>Etowah</b>						
Allatoona	●	●	●	●	●	●
Butler	●	●	●		●	●
Noonday	●	●	●	●	●	●
Proctor		●		●	●	●
Rubes	●	●	●	●	●	●

# COMMUNITY PROGRAM ACCOMPLISHMENTS

Cobb County Watershed Stewardship offers free ecology workshops throughout the year including providing the training and tools needed to be a monitoring volunteer.

During the 2016-2017 reporting year, the value of Cobb's volunteer watershed stewards is estimated at \$147,194. *Based on the 2016 estimated value of volunteer time for Georgia (\$24.39 published by Independent Sector).*

## Volunteer Opportunities

### Adopt-A-Stream Chemical Monitoring

*319 volunteers trained, 385 monitoring events, 1,419 service hours*

Chemical monitoring consists of collecting water samples and testing for pH, levels of dissolved oxygen, temperature, and conductivity. These chemical tests gather information about the aquatic habitat and its ability to sustain life. Participants are required to attend a certification workshop and adopt their site for monthly monitoring.

### Adopt-A-Stream Macroinvertebrate Monitoring

*30 volunteers trained, 17 monitoring events, 825 service hours*

Participants monitor the population and diversity of benthic macroinvertebrates, aquatic insects, and mollusks that act as bioindicators of water quality. Studying the diversity of organisms at a site gives a general picture of water quality. Individuals interested in macroinvertebrate monitoring are required to attend a certification workshop, adopt their waterway site, and commit to monitoring once per quarter.

### Adopt-A-Stream Bacteria Monitoring

*91 volunteers trained, 132 monitoring events, 231 service hours*

Volunteers learn how to monitor *E. coli* levels in their streams. *E. coli* is an indicator organism that is often used to assess the water quality. Monitoring levels of *E. coli* can help identify possible sources of pollution. This workshop focuses on proper collection of a water sample, processing samples for incubation, and interpretation of results. Volunteers must attend a certification workshop and adopt their site for monthly monitoring.

### Adopt-A-Stream Watershed & Visual Monitoring

*11 volunteers trained, 4 monitoring events, 38 service hours*

This is two workshops in one! We start with "Getting to Know Your Watershed", which includes mapping your watershed, learning how human activity can impact a watershed, identifying sources of pollution, and discussing how to address non-point source pollution. Next, we assess the physical health of your stream and its habitats using the Adopt-A-Stream protocol for Visual Stream Assessment.

### Frog and Toad Monitoring

*5 active volunteer groups, 12 monitoring events, 136 service hours*

Cobb County residents are learning to identify frog and toad vocalizations and recording their observations to collect data on local amphibian populations. Once trained and a monitoring route is registered, participants take a walk and complete a frog call survey once a week.

### Waterway Clean-ups

*684 volunteer participants, 48 events\*, 1,647 service hours*

Cobb County asks residents to help clean local waters and raise awareness about waterway health. Scout groups, church groups, schools, and homeowners associations across the county are provided with gloves, bags, and planning assistance throughout the year to encourage trash removal efforts. \*calculation includes GA AAS's volunteer reporting of cleanup activities during monitoring events. 21 small collection events were recorded via this mechanism.





## Storm Drain Marking

*473 volunteer participants, 43 events, 985 service hours, 1,021 drains marked*

Rain water runs off the landscape from roads, driveways, lawns, rooftops, and parking lots and carries pollution into our water. In addition, any litter on roads will wash into streams through the storm drain system. To emphasize the connection between runoff and water pollution, volunteers are helping mark storm drains around Cobb County. Participants are provided with marking kits including aluminum markers, adhesive glue, gloves, garbage bags, and education materials.

## Watershed Stewardship Fair - March 30, 2017

*40 volunteer participants*

The Watershed Stewardship Fair is a data sharing event that showcases volunteer stream projects. Volunteer groups are invited to create a display and share their initiatives during the event. Participants are given a chance to tour the Water Quality Laboratory. Watershed Stewardship Awards were presented for the Group of the Year, School of the Year, and Stewardship In Action.

## Wildlife and Rain Garden

*63 volunteer participants, 43 events, 163 service hours*

Community volunteers continue to assist with site maintenance including new plant installations, pruning, seed propagation, weeding, labeling, and leading tours. Participants include local master gardeners, community members seeking service hours, and those interested in gaining practical gardening experience. Weekly project days, currently every Thursday morning from 9-11, provide a consistent opportunity for those interested in helping. Participants also learn about stormwater pollution prevention and stewardship practices.

## Privet Pulls

*93 participants, 10 events, 211 service hours*

The removal of invasive Asian privet has become a popular stewardship project, especially with older students seeking community service hours. Volunteers seeking to organize a project are asked to complete a project proposal, identifying the site location and vegetative waste disposal plan. WSP assists by providing tools and logistical support. In addition, we are working with GA Native Plant Society and Cobb County Parks to help recruit volunteers for ongoing privet removal efforts at Heritage Park along Nickajack Creek.

## Watershed Internships and Mentorships

*4 volunteer participants, 380 service hours*

In partnership with the University of Georgia, WSP hosted a student intern during the summer of 2016. She worked 40 hours per week through July. Duties included assisting with community outreach programs, prepping for service projects, and shadowing field staff with routine duties. We also host three high school students this year. One student, a senior from Kennesaw Mountain High School, interned during the fall 2016 semester. He completed a study investigating a local dog park, patron pet waste practices, and *E. coli* levels in an adjacent creek. Two high school seniors, from Hillgrove High School and Wheeler High School, mentored with staff during the fall semester. One student worked on our *Pick It Up* pet waste program, helping inventory stations and prioritizing future installations. The other student helped with our fall waterway cleanup program, recruiting participants and organizing events.



## Chattahoochee Volunteer Challenge

*641 participants, 65 events, 1,542 service hours\**

We partnered with National Park Service again to incentivize service project participation. 9 registered groups competed to receive a free ranger-led rafting trip. Lassiter High School's team from AP Environmental Science Classes, GREEN Club, and National Honor Society logged the most service hours this year. We plan to continue offering the *Chattahoochee Challenge* in the 2017-2018 school year. \*this data is reflected in each of the volunteer service programs so numbers are not included again in our summary calculations.

# Summary of Volunteer Activities by Watershed

## Stewardship Projects - Chattahoochee

WATERSHED	GROUP	# SITES	YEAR INITIATED	ACTIVITY TYPE
Buttermilk Creek	South Cobb High School	1	2017	SD
Mud Creek	Fielding Lewis Chapter of DAR	1	2014	SD
Mud Creek	Planters Hill	1	2017	CH
Mulberry Creek	Friends of Mulberry Creek	1	2003	CH, BAC
Nickajack Creek	Keep Smyrna Beautiful	10	2010	CH, BAC
Nickajack Creek	SG5	1	2011	CH
Nickajack Creek	Chattahoochee Challenge	1	2014	PP
Nickajack Creek	Fielding Lewis Chapter of DAR	2	2014	SD
Nickajack Creek	Lake Starling	1	2016	CL, AN
Nickajack Creek	Campbell High School	2	2016	SD
Noses Creek	McEachern High AP Environmental Science	1	2007	CL
Noses Creek	Chance Science	1	2015	CH, CL
Noses Creek	Daydreamers	1	2015	CH, CL, BAC
Noses Creek	Nob Ridge Subdivision	1	2016	SD
Noses Creek	Stewardship Mob	1	2017	SD
Noses Creek	Fielding Lewis Chapter of DAR	3	2017	SD
Olley Creek	Donna-n-Camen	1	2012	CH
Olley Creek	Chattahoochee Challenge/Stewardship Mob	2	2014	CL, PP, SD
Olley Creek	Cooper Middle School	1	2017	CL
Olley Creek	Olley Creek Volunteers	1	2017	CL
Olley Creek	Explore Wildwood	1	2017	SD
Poplar Creek	Keep Smyrna Beautiful	2	2012	CH
Poplar Creek	Anne Ledbeter	1	2012	CH, MAC, BAC, AN
Powder Springs Creek	Fairfax Consulting Group	1	2010	CH, BAC, CL
Powder Springs Creek	Cub Scout Pack #723	1	2016	SD
Rottenwood Creek	Friends of Victory Heights Subdivision Park	1	2002	CH, BAV
Rottenwood Creek	Sierra Club Centennial Group	3	2004	CH, MAC, BAC, CL
Rottenwood Creek	Water Quality Laboratory	1	2009	CL, BEA
Rottenwood Creek	Bluewata	1	2017	SD
Sewell Mill Creek	Dodgen Middle School	9	2002	MAC
Sewell Mill Creek	Walton HS AP Environmental Science Class	1	2006	CH
Sewell Mill Creek	Rotary Club of East Cobb	1	2010	SD
Sewell Mill Creek	Bushart	1	2012	CH
Sewell Mill Creek	Pope High School	3	2013	CH, CL, SD
Sewell Mill Creek	Fielding Lewis Chapter of DAR	1	2016	SD
Sewell Mill Creek	Kelsey	1	2016	CH
Sewell Mill Creek	Family Frog Walk	1	2017	AN
Sewell Mill Creek	Marietta Metro Rotary	1	2017	CL
Sewell Mill Creek	Lovinggood Middle School	1	2017	SD
Sewell Mill Creek	Girl Scout Troop #14409	1	2017	SD
Sope Creek	Walton High School Environmental Club	1	1995	CH
Sope Creek	Friends of Gable Creek	1	2009	CH, CL
Sope Creek	Salty	1	2012	CH
Sope Creek	Sedalia Park Elementary School	1	2012	CH, CL
Sope Creek	Fielding Lewis Chapter of DAR	4	2014	SD
Sope Creek	Dickerson Middle School	1	2016	SD
Sope Creek	Stewardship Mob	1	2017	SD
Sope Creek	Bandukwala Family	1	2016	SD

## Stewardship Projects - Chattahoochee continued

Sope Creek	Saad Shan	1	2017	AN
Sope Creek	Wheeler High School Environmental Club	1	2017	CL
Sope Creek	Stewardship Mob	1	2016	SD
Sweetwater Creek	Austell Elementary School	1	2017	SD
Trib of Chattahoochee	Crooked Branch	1	2011	CH
Trib of Chattahoochee	ERM Atlanta	1	2015	CH, CL
Trib of Chattahoochee	Walton Citizen Science	1	2016	CH
Trib of Chattahoochee	Emily West	1	2017	AN
Ward Creek	Hillgrove High School	1	2015	CL, SD, PSA
Ward Creek	Family frog Walk	1	2017	AN
Ward Creek	First United Methodist Church	1	2016	CL, SD, PP
Willeo Creek	Willeo Watershed Alliance of Loch Highland	1	2001	CH, BAC
Willeo Creek	Tritt River Kids	1	2004	CH, CL
Willeo Creek	Bishop Lake	6	2008	CH, BAC
Willeo Creek	Village North Highlands Subdivision	1	2012	CH, BAC
Willeo Creek	Fielding Lewis Chapter of DAR	1	2016	SD

## Stewardship Projects - Etowah

WATERSHED	GROUP	# SITES	YEAR INITIATED	ACTIVITY TYPE
Allatoona Creek	Kahle	1	2010	CH, CL
Allatoona Creek	Richard's Creek	1	2014	CH
Allatoona Creek	Ford Elementary School	1	2014	CL
Allatoona Creek	John Keiler	1	2015	CH
Allatoona Creek	Stewardship Mob	1	2016	CL, PP
Allatoona Creek	MPI, Ford Creek Estates & Calumet West Homeowners	1	2017	SD
Butler Creek	Butler Creek Kennesaw	1	2009	CH, BAC, VS, CL
Butler Creek	The Seigla Family	1	2015	CH, CL
Butler Creek	North Cobb Christian School	1	2016	CL, SD
Butler Creek	Nextdoor Kennesaw	2	2016	SD
Butler Creek	Fielding Lewis Chapter of DAR	1	2016	SD
Butler Creek	Kennesaw Mountain High School	1	2016	SD
Butler Creek	Stewardship Mob	1	2017	SD
Noonday Creek	Devereux Georgia Treatment Network	1	2013	CH
Noonday Creek	Emerson Unitarian Universalist Congregation	1	2014	CH
Noonday Creek	Dunmovin Stream	1	2016	BAC
Noonday Creek	Catholic Church of the Transfiguration	1	2016	SD
Noonday Creek	Family Frog Walk	1	2017	AN
Noonday Creek	Stewardship Mob	2	2017	SD, PP
Noonday Creek	Starbucks	1	2017	CL
Proctor Creek	North Cobb High School Environmental Club	1	2008	CL, PP
Rubes Creek	Keheley Elementary 3rd Grade Target Class	2	2004	CH, CL
Rubes Creek	McCleskey Middle School	1	2006	CH, MAC, BAC
Rubes Creek	David Zandstra	1	2008	CH, BAC
Rubes Creek	Lassiter High School	1	2010	CH, BAC, CL, SD
Rubes Creek	Mabry Middle School	1	2011	CL
Rubes Creek	Stewardship Mob	1	2012	PP
Rubes Creek	Kennesaw Mountain High School Magnet Internship	2	2016	CH, BAC
Rubes Creek	Albert Chen	1	2016	CH
Rubes Creek	Saad Rahman	1	2016	CH

### Activity Type Key

CH Adopt-A-Stream Chemical Monitoring	BAC Adopt-A-Stream Bacteria Monitoring	AN Anuran Monitoring	CL Cleanup
MAC Adopt-A-Stream Macroinvertebrate Monitoring	VS Adopt-A-Stream Visual Monitoring	SD Storm Drain Marking	PP Privet Pull
	BEA Beautification Project	PSA Video Contest	

# Community Ecology Programs

## Rain Barrel Make & Takes

120 participants

Urban runoff causes bank erosion, siltation, and water quality impairment. It is one of the hardest sources of stream pollution to control. In this free workshop, participants build their own rain water harvesting barrel (donated by Coca-Cola Bottling) using power tools and provided supplies. The collected water can be used to irrigate ornamental plants, shrubs, and trees while preventing non-point source pollution and saving potable water.

## Household Hazardous Waste (HHW) Reduction and Medication Disposal

1,420+ participants  
HHW from 152 households  
Medication from 206 households

Several efforts are implemented to educate Cobb County residents on hazards in the home including disposal events. Cobb County's HHW Amnesty Day was held on June 25, 2016. Approximately 10,000 lbs of HHW were collected from residential customers through this program. Organized by Keep Cobb Beautiful, two pharmaceutical disposal events were held. Education focused on the importance of removing expired and unused medications from the home and the problems associated with flushing these products into the sewer system. Residents were also provided fall and spring opportunities to recycle textiles, paint (for a fee), batteries, scrap metal, polystyrene, and electronics (for a fee), and participate in document shredding. Collection totals include approximately 800 pounds of textile, 1,350 gallons of paint, 33,000+ pounds of appliances, metals, electronics, 13 bales of polystyrene, and 61,600 pounds of shredded paper.

## Library Programs

296 participants

During June and July of 2016, the Watershed Stewardship Program partnered with Cobb County's Library System for the summer reading program. WSP staff presented a program about great blue herons, watersheds, and local habitat which included a reading of *River Notes* by Barry Lopez. Staff also worked with middle and high school girls at five local libraries participating in the *Girls in Engineering, Math, and Science (GEMS) Program*. Education was focused on water treatment, wastewater, and water careers.

## Summer Camp with Kennesaw Mountain National Battlefield Park (KeMo)

115 participants

Watershed Stewardship Program supported National Park Service staff and YMCA summer camp fieldtrip programs at KeMo during June and July of 2016. Campers participated in a nature hike, wildlife demo, and lessons on heat safety, leave no trace, and bird migration.

## Family Programs

75 participants

Staff continued to offer Creek Stomping and Fairy House Building for kids and families. 6 events were conducted during the reporting year. We added frog walks in the spring of 2017. These are open to families interested in learning how to identify frog calls. Three events were conducted during the reporting year.



### Professional Presentations and Partnerships

471 participants

WSP staff routinely provide expertise and support at conferences, professional development meetings, and seminars. In the 2016-2017 reporting year, we presented at several events including the Outdoor Learning Symposium, the Georgia Association of Water Professionals Spring Conference, and NPDES Training with AGC Georgia. WSP staff also chaired the Southeast Environmental Education Alliance Regional Conference in March 2017.

### Pet Waste Education Initiatives

6,000+ recipients

WSP continues to support volunteer *E. coli* testing, distribute pet waste education materials during storm drain marking projects, implement our *Pick It Up Pals Pledge Program* to increase pet owner awareness of the pollution problems associated with pet waste, and provide Cobb's P.A.R.K.S. department with *Pick It Up Waste Stations*, including educational signage and replacement bags. Three new stations were installed during the reporting year. Staff also explicitly discuss proper pet owner stewardship during our *What Is A Watershed?* school outreach programs. In addition, staff worked with middle and high school clubs to facilitate Pledge Signing events at 3 schools this year. 108 new pet pledges were signed and 79 pet images were added to our gallery this year.

### National Park Service Tire Disposal Partnership

92 tires

As in previous years, we offer the Chattahoochee National Recreation Area tire disposal services for all tires removed from the river and contributing tributaries within the Cobb County jurisdiction. National Park Service delivers the tires to our waste transfer station and Cobb County Water System pays the disposal fees for the transaction.

### Senior Programs

183 participants

WSP continues to develop programs for local seniors. We have expanded programming to include private as well as county facilities. The sessions are focused on water and nature and have included topics on pollinators, birds, frogs, and gardening. Stewardship components are imbedded in the content. Depending on the audience and weather, some session content is facilitated outdoors.

### Invited Speaker Presentations and Tabling Events

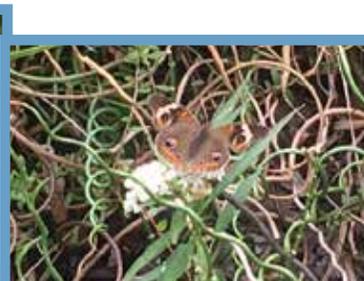
248 participants

In addition to facilitating public programs, WSP staff continues to accept invitation to speak to community clubs on various topics. This year we received requests for talks on watershed and water quality, seasonal gardening, butterflies, and frogs from local nature and garden clubs. We also setup displays and spoke to community members at events at several locations including local parks, recreation centers, schools, and churches.

### Wildlife & Rain Garden Programming/Tours

796 participants

While the demonstration gardens at Cobb's Water Quality Lab are always open for visitors, we do organize and facilitate guided tours and programs with age appropriate content developed for PK-Senior adult audiences. We've also had a group setup a geocache at the site and have had visitors via this effort.



# SCHOOL OUTREACH ACCOMPLISHMENTS

Program staff visited local schools routinely, offering free water-related education programs to K-12 students in Cobb County, Marietta City, and private schools. In the 2016-2017 school year, our programs reached 16,338 students at 101 schools, serving 707 classrooms, and providing 398 instructional hours. We estimate the cost of this service at \$15,751.

## Ecoregions of Georgia

881 participants

Georgia ranks sixth in the nation for overall species diversity, particularly due to our five distinctive ecoregions! Learn the characteristics and natural history facts about each ecoregion by exploring how geographical topography contributes to biological diversity.

## What is a Watershed?

1,391 participants

We all live in a watershed - upstream and downstream. During this interactive session, students use a watershed model to demonstrate the impacts of pollution on streams and lakes while learning about local water quality issues. This hands-on program reveals how everyday activities affect our drinking water and wildlife while encouraging discussion about watershed protection and pollution prevention.

## Erosion & The Hydrologic Cycle

981 participants

Erosion and Weathering - what's the difference? Students visit lab stations to study the causes and effects of erosion, weathering, and sediment deposition while discovering how these forces change the landscape and aquatic habitats. Using a wetland model, students decide how to mitigate the consequences of human impacts and how natural systems are beneficial to the hydrologic cycle.

## Ecosystems & Adaptations

730 participants

Explore ecosystems by looking at living and nonliving factors affecting interdependency, determine plant and animal adaptations and limitations, follow energy as it moves through food chains and food webs, and conclude how human impacts on the watershed can make a difference. In this 60 minute program, we look at skulls to determine the vore type of certain animals, look at slides of various ecosystems and adaptations, investigate the decomposer box, and apply knowledge with a live corn snake!

## Adopt-A-Stream Overview

31 participants

Students learn about stream monitoring including the basics of a visual stream survey, water testing (temperature, conductivity, pH, dissolved oxygen), bacteria monitoring, and look at common macroinvertebrates found in local streams. Program includes equipment demonstrations. This program can be extended to include Georgia's AAS certification process.

## Adopt-A-Stream Water Chemistry Study

507 participants

Learn to collect water samples and perform water quality experiments including dissolved oxygen, pH, temperature, and conductivity. This hands-on chemistry activity incorporates the scientific method. Data collected from monitoring groups will be entered into the Georgia Adopt-A-Stream statewide database.

## Macroinvertebrate Lab

897 participants

Macroinvertebrates (stream bugs) are excellent indicators of water quality. Learn to identify and categorize aquatic insects by pollution tolerance levels to determine stream health. Introduce your students to these fascinating water bugs before taking a water monitoring field trip to a local pond or stream. Data collected from monitoring groups will be entered into the Georgia Adopt-A-Stream statewide database.

## Bacteria Monitoring Lab

109 participants

This program explores different diseases present in the U.S. and in other countries and their impact on environmental health. Students will have the opportunity to practice laboratory procedures by monitoring their local environment for *E. coli*, and determining what levels exceed a healthy baseline.

## River to River

1,152 participants

Where does our drinking water come from? What happens to our water after we use it? Explore how a drinking water and wastewater treatment facility function.

### Snakes of Georgia & Their Adaptations

435 participants

Some people fear them, some are attracted to them, but almost nobody is indifferent toward snakes. How have snakes adapted to survive in their environment? Which species in Georgia are venomous and how can you tell? Most importantly, how do they benefit our ecosystem? This lab includes the use of live specimens.

### Visual Stream Survey

363 participants

A healthy stream is a busy and constantly changing place. Learn how to assess a stream by examining different factors, such as stream bank, stream vegetation, stream channel, and substrate type to better understand how your stream is functioning.

### Monarchs & Butterfly Life Cycle

292 participants

This program explores how a butterfly grows from a tiny egg into an adult, features the amazing annual migration of the Monarch from Canada to Mexico, and discusses habitat needs and conservation efforts to address human impact.

### What Do You Know About Where You Live?

360 participants

What is a community? Students develop a working definition of a community and identify essential elements/characteristics of the community they live in. What biotic and abiotic factors are found in your community? Students also learn about water careers the role of various professions in the industry.

### Investigating Urban Streams and Ponds

299 participants

Join us at a stream, pond or wetland to conduct a study about water quality and habitat. Activities may include water quality testing, sampling for aquatic insects, and investigating physical characteristics of the waterway. The group is responsible for its own transportation to the site. This program can be done at a schoolyard stream or pond, or at a local park.

### Anuran Lab

43 participants

Anurans are a special group of amphibians that include frogs and toads. But how do you tell the difference between frogs and toads? What habitats do they live in, why do they call, and how does a tadpole become an adult? Discover all of this as well as what anurans can tell us about our environment.

### Career Day

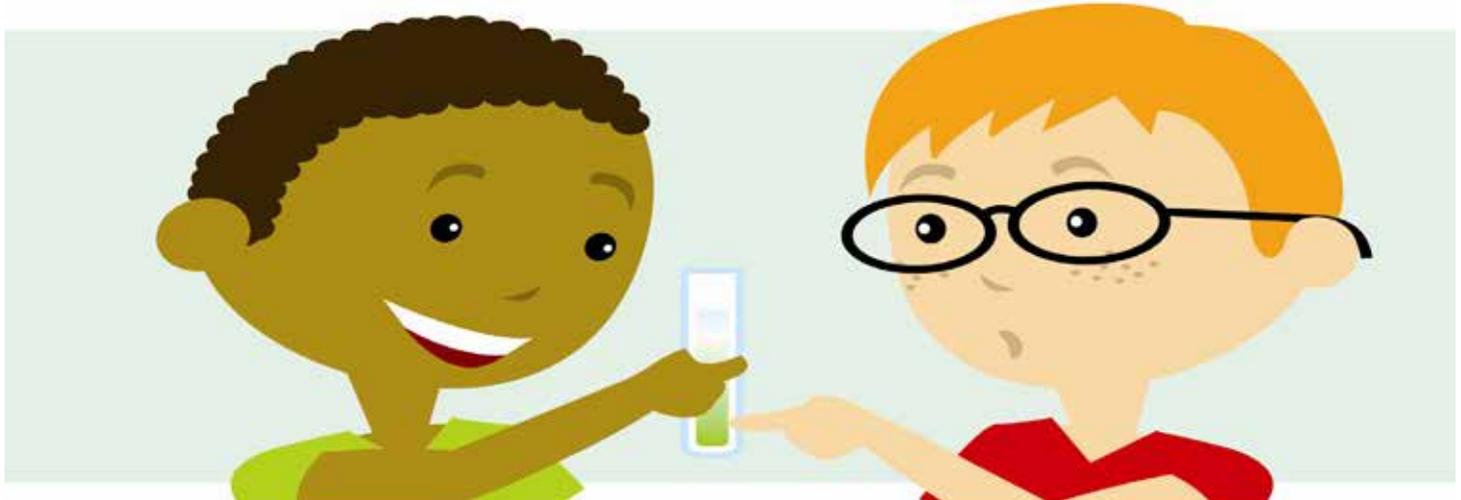
47 participants

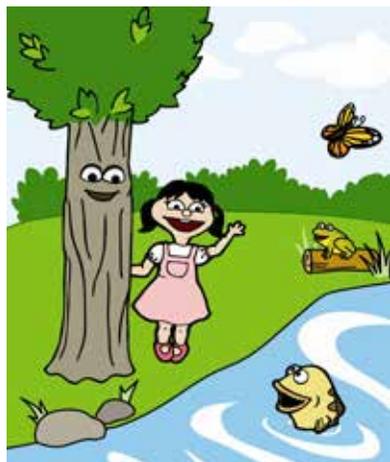
Students learn about the field of environmental education and how Cobb County Water System works with the community. Students observe wildlife specimens, ask questions, and have the opportunity to share their personal experiences about local waterways, providing an opportunity to link positive behavior to water quality.

### Non-point Source Pollution & Stewardship

28 participants

Offered in preparation for a stewardship activities, students participate in a discussion about non-point source pollution typical of local neighborhoods. They are provided training on the purpose of and how to safely engage in stewardship practices such as storm drain marking, rain water harvesting, and waterway cleanups.





### Brooke & Branch Puppet Show

6,934 participants

Brooke is a little girl who goes on a big adventure! Join her as she learns about water quality and biodiversity from the friends she meets along the way. This program emphasizes ecological concepts and vocabulary in a fun and engaging way while demonstrating how we can help the environment.

### Every Kid In A Park

745 participants

With funding from The National Parks Foundation and in partnership with Chattahoochee River National Recreation Area (CRNRA), six Title-One schools from Cobb County participated in water quality and stewardship education. Students received multiple lessons (wildlife, decomposers, food web, pond study, water safety and paddling rafts on Sibley Pond, and nature journaling) at the Sope Creek Unit. The grant covered the transportation costs to bus students to the park for a day of lessons. We are working on funding for the 2017-2018 school year and anticipate serving another 700+ students.

### Homeschool Science Series

90 participants

WSP continues offering programming for local homeschool students. Free to participants, students learn about local stream ecology and wildlife. Sessions include both classroom and field experiences.

### Traveling Treasure Trunk

20 participating schools

A collection of water and nature resources including books, field guides, games, music, and videos. The trunk is loaned to K-5 classrooms for three week periods.

### Other Shared Resources

22 participating schools

Our program loans educational resources to teachers for use in their classroom, including water testing kits, nets, curriculum activities, preserved insect specimens, the Our Shared Forest Science Night Kit, and Enviroscape tabletop models.

### Children's Water Festival

797 participants

On May 2nd, 100 4th graders from Russell Elementary, along with students from six other schools, were invited to attend this annual event. It was held in partnership with other local governments, Metro N. GA Water Planning District, Georgia Association of Water Professionals, and the National Park Service (NPS) at the Chattahoochee River National Recreation Area. Participants attended several hands-on water education sessions including topics on local wildlife and conservation, watersheds and pollution prevention, water source and distribution, FOG, and utility trucks with equipment demonstrations. NPS staff also provided *Every Kid In A Park* passes to each student, allowing their families to visit federal property for free through the summer of 2017.

### Green Schools

38 schools, 762 classrooms

Cobb's Green School Initiative continues to draw interest and provide encouragement for teachers to integrate environmental education activities into their classrooms. Those that participate, complete, and log five EE activities are recognized as Green Classrooms. When five teachers in a school participate, the school is recognized as a Green School. In 2016-2017, 28 schools achieved Gold Status (15 or more Green Classrooms) and the teachers logged over 8,600 EE hours.



### Professional Development for Educators

401 participants

Staff continues to facilitate education opportunities for teachers. WSP staff also helped organize the Annual Outdoor Learning Symposium on October 14, 2016 and chaired and presented at the Southeastern Environmental Education Alliance (SEEA) Conference on March 3-5, 2017.

Trainings included:

- Life Is A River
- Adopt-A-Stream for Teachers
- Outdoor Learning Symposium
- Cobb County Science Preservice Workshops
- Project WET
- Monarchs In The Classroom
- SEEA Conference

# UPDATE ON RESOURCE DEVELOPMENT

## Septic Tank Education

To supplement our Water and Wastewater 101 program, we developed content to address water-only users to ensure those customers with on site sewage management systems are educated about care and maintenance. Published in conjunction with MNGWPD's septic-focused campaign during Pollution Prevention/Septic Smart Week, the third week of September, we completed a new video episode titled *Eco-Logical: Tips to Reduce Your Footprint With Septic Systems*.

## Wildlife and Rain Garden Demonstration Site

WSP continues developing the garden as an educational resource by installing new plantings, creating informational displays, designing interpretive programs, and recruiting volunteers to assist with our educational efforts. Ongoing relations with Cobb County Master Gardeners remain strong with volunteers continuing to assist with site maintenance. We were a site on Cobb's annual garden tour this year. Over 600 people visited our garden on May 13, 2017. Our garden was also a site for Atlanta Audubon's annual Backyard Wildlife Tour on September 17, 2016.

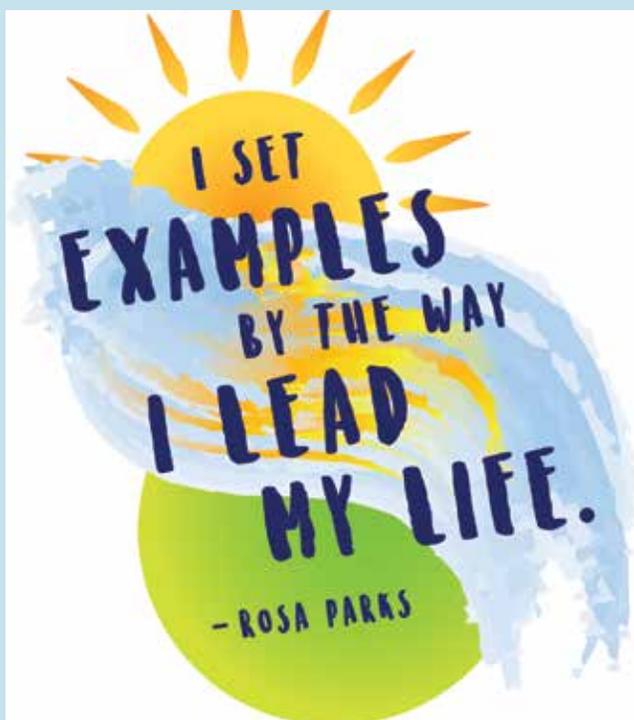
## Newsletter, [www.cobbstreams.org](http://www.cobbstreams.org), and social media

Four issues of the quarterly newsletter, *The Thalweg*, were published this year. Approximately 2,000 paper and more than 4,500 electronic issues were distributed per edition to our local contacts. The Watershed Stewardship website provides education and promotional information to the community and averages approximately 500 hits per month. Our social media efforts now include the use of Eventbrite, Blogger, YouTube, Facebook, Pinterest, and LinkedIn. We are exploring how to effectively utilize Nextdoor Neighbor as well.

## Watershed Profiles and Signage

The watershed profile project, which creates documents that provide history, statistics, and points of interest for the major watersheds in Cobb County, is under development. We continue working with Cobb County DOT to install watershed and stream name signage at Adopt-A-Stream locations across the county. Volunteer groups are identified on separate blades at each location.

## T-shirt Design Contest with Kennesaw State University



Since 2002, WSP has partnered with local graphic design professors to incorporate a real-world project for students into their course curriculum. Our staff and volunteers become clients of the class with the students creating designs to be voted on for production on our annual volunteer t-shirt. This opportunity has developed into a portfolio assignment that senior level students incorporate into their final semester, with a client meeting and a culminating critique where each design is presented for comment and the selection of finalist designs. The selected final designs are voted on by the volunteers and the winning design is printed on our volunteer shirt. This year, sixteen students participated in the client meeting and eight students submitted designs for consideration.

Images: The 2017 design (left). Students and professor (below).



# COMMUNITY CONNECTIONS

As active practitioners in Georgia's environmental education community, the Watershed Stewardship Program partners with many organizations and staff serves on numerous boards and committees. These activities enrich local program offerings and ensure Cobb County remains engaged with other water and environmental professionals.

## Boards, Committees, Leadership Roles

- Environmental Education Alliance of Georgia: Advisory Council Chair
- Georgia Association of Water Professionals: Public Education Committee Chair
- Georgia No Child Left Inside Coalition: Member
- Metro North Georgia Water Planning District: Education Technical Coordinating Committee
- Monarchs Across Georgia: Steering Committee Member
- Rivers Alive: Advisory Board, Education and Messaging Committee
- Council of Outdoor Learning: Steering Committee
- Georgia Adopt-A-Stream: Coordinator, Technical Advisor, Conference Planning Committee
- Southeast Environmental Education Alliance: Secretary, Vice President
- Our Shared Forest Committee: Co-Chair

## Partnerships

- Georgia EPD Outreach Unit
- National Park Service
- Georgia Association of Water Professionals
- Environmental Education Alliance of Georgia
- Metro North Georgia Water Planning District
- Cobb County DOT
- Cobb County School System
- Cobb County P.A.R.K.S.
- Keep Cobb Beautiful
- Keep Marietta Beautiful
- Keep Smyrna Beautiful
- Cobb County Master Gardeners
- Coca-Cola Bottling Company
- Vickery Hardware
- Emory University
- Kennesaw State University
- Sierra Club Cobb Centennial Group
- State Botanical Gardens of Georgia
- RBC (Royal Bank of Canada)
- Georgia Southern University
- City of Atlanta
- City of Marietta - Marietta Water
- City of Roswell
- City of Smyrna - Keep Smyrna Beautiful
- Cherokee County
- DeKalb County
- Fulton County
- Gwinnett County
- Marietta City Schools
- UGA Cooperative Extension

## Program History

### 2017

- Cobb County Water System (CCWS) awarded Comprehensive Education Program of Excellence from GAWP.
- WSP receives Watershed Award from EPD.
- WSP Volunteer (Anne Ledbetter) receives Red Flag Award.
- WSP Volunteers (ERM Atlanta) receives Nymph Award.
- WSP Volunteers (Ford Elementary) receive Rivers Alive Clean-up Award.
- WSP recognizes Keep Smyrna Beautiful as Group of the Year.
- WSP recognizes Keheley Elementary as School of the Year.
- WSP recognizes Anne Ledbetter with a Stewardship In Action Award.

### 2016

- WSP staff recognized by Cobb County Board of Commissioners for Excellence in Customer Service.
- WSP Volunteer (Norm Fagge) receives Excellence in Data Collection Award.
- WSP Volunteers (Pope High School) receive Rivers Alive Clean-up Award.
- WSP recognizes Norm Fagge as Volunteer of the Year.
- WSP recognizes GA AAS as Partner of the Year.
- WSP recognizes Sedalia Park as School of the Year.
- WSP recognizes Simon Locke with a Stewardship In Action Award.

### 2015

- Watershed Stewardship Program (WSP) staff receives New Trainer of the Year Award from EPD.
- WSP Volunteers (Fairfax Consulting Services) receives Excellence in Data Collection Award.
- WSP recognizes Fairfax Consulting Services as Monitoring Group of the Year.
- WSP recognizes Chattahoochee River National Recreation Area as Partner of the Year.
- WSP recognizes Daughters of the American Revolution Fielding Lewis Chapter as the Stewards of the Year.

### 2014

- CCWS receives 2014 Best Direct Media Award for *The Thalweg* from GAWP.
- WSP receives Watershed Award from EPD.
- WSP staff receives New Trainer of the Year Award from EPD.
- WSP receives Rivers Alive Club Award from EPD.
- WSP Volunteer (Ina Allison) receives Excellence in Data Collection Award.
- WSP recognizes Ina Allison as Volunteer of the Year.
- WSP recognizes Kennesaw State University School of Art and Design as Partner of the Year.
- WSP recognizes Pope High as School of the Year.

2013

- WSP in partnership with KCB receives a \$2000 grant for our Cigarette Litter Prevention.
- WSP Volunteer (Morning Washburn) receives AAS in Action Award.
- WSP Volunteer Group (Sierra Club Centennial Group) receives Extraordinary Volunteer Watershed Effort Award.
- WSP recognizes Simon Locke as Volunteer of the Year.
- WSP recognizes David Zanstra and Ric & Sharon Donato as Monitoring Group of the Year.
- WSP recognizes Lassiter High as School of the Year.

2012

- CCWS receives 2012 Innovative Initiative Program Award for *Eco-Logical...Tips to Reduce Your Footprint* from GAWP.
- WSP Volunteer (Eric Lee) receives Excellence in Data Collection Award.
- WSP Volunteer (Cheryl Ashley-Serafine – Nicholson Elementary School) receives Adopt-A-Stream in Action Award.
- WSP recognizes Carla Loosier as Community Organizer of the Year.
- WSP recognizes Eric Lee as AAS Volunteer of the Year.
- WSP recognizes Nicholson Elementary as School of the Year.
- WSP recognizes Diane Powell as Rain and Wildlife Garden Volunteer of the Year.
- WSP staff serves as President of Environmental Education Alliance of Georgia (EEA).

2011

- WSP staff is expanded to include additional part-time Program Assistants to perform the Brooke and Branch Puppet Show.
- WSP receives Watershed Award from GA Environmental Protection Division (EPD).
- WSP Volunteer (Connie Ghosh - McCleskey Middle School) receives Red Flag Award.
- WSP recognizes Amy Boggs as Community Organizer of the Year.
- WSP recognizes Pam Subalusky AAS Volunteer of the Year.
- WSP recognizes Tritt Elementary as School of the Year.
- WSP staff serves as President of EEA.
- WSP staff receives Volunteer Service Award from EEA.
- WSP receives \$5000 grant from Royal Bank of Canada for the Demonstration Rain Garden.

2010

- WSP receives Adopt-A-Stream in Action Award from EPD for the Brooke & Branch Puppet Show.
- WSP staff receives Georgia Project WET 2009 Facilitator of the Year.
- WSP recognizes The Donnelly Family as Storm Drain Markers of the Year.
- WSP recognizes Ric and Sharon Donato as Anuran Monitors of the Year.
- WSP recognizes Terri Tornroos as AAS Volunteer of the Year.
- WSP recognizes Walton High as School of the Year.

2009

- WSP staff recognized by Cobb County Board of Commissioners for Excellence in Customer Service.
- WSP Volunteers (Tim Phillips and Stacey Haire) receives Excellence in Data Collection Award.
- WSP staff receives 2008 Monarch Across GA Service Award.
- WSP recognizes Girl Scout Troop 21 as Storm Drain Markers of the Year.
- WSP recognizes Connie Ghosh as Anuran Monitor of the Year.
- WSP recognizes Tim Phillips and Stacey Haire as AAS Volunteers of the Year.

2008

- WSP receives Watershed Award from EPD.
- WSP Volunteer (Didi Johnson) receives Outstanding Outreach and Partnership Award.
- WSP staff receives Teaching Conservation Facilitator of the Year from GA Conservancy.
- WSP staff recognized by Rivers Alive for Most Cleanups Attended.
- WSP recognizes Didi Johnson as AAS Volunteer of the Year.

2007

- WSP staff is expanded to include a part-time Program Assistant.
- Cobb Adopt-A-Stream Program (AAS) changes name to Watershed Stewardship Program.
- AAS receives Adopt-A-Stream in Action Award, for Our Color Your Watershed Mural Grant Program from EPD.
- AAS Volunteer (Judy Cox - Dodgen Middle School) receives & Outstanding Outreach Award.
- WSP recognizes Judy Cox as AAS Volunteer of the Year.

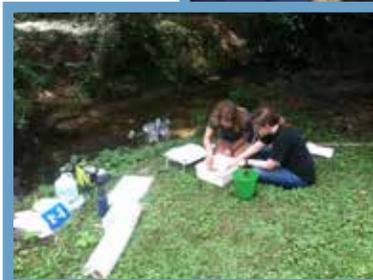
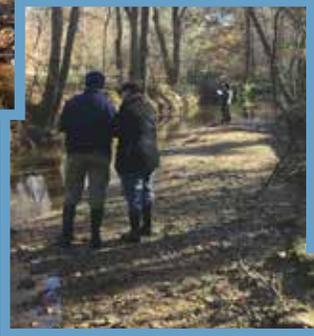
2006-2001

- Demonstration Rain Garden is certified as a Back Yard Wildlife Habitat, a Monarch Waystation, and a Pollinator Garden.
- AAS staff is expanded to two full-time employees.
- AAS receives Rivers Alive: Outstanding Large Cleanup Award.
- Demonstration Rain Garden is installed.
- AAS receives Watershed Award from EPD.
- AAS Volunteer (Greg Linton) receives Excellence in Data Collection Award.
- AAS receives Outstanding Outreach and Partnership Award from EPD.
- Cobb County Water System (CCWS) receives Public Education Award from GA Assoc. of Water Professionals (GAWP) - 2002 & 2006.
- Cobb Adopt-A-Stream (AAS) Program Coordinator is hired and program is launched.

# REFLECTIONS



Fairy house building remain a popular family program. This year we offered a fall pumpkin house workshop in addition to the summer events.



WSP displayed at several community events this year. We are in the process of formalizing a new volunteer program to assist with responsiveness to these requests. This year student interns and mentees from local high schools helped staff table at several locations.

We continue to facilitate Georgia Adopt-A-Stream workshops each month and conduct site visits with our volunteers to support their monitoring projects.



We continue to facilitate free Rain Barrel Make & Take Workshops monthly, April-October for Cobb residents.



Three groups were recognized locally this year at our Watershed Stewardship Fair. In addition, GA Adopt-A-Stream selected two of Cobb's monitoring groups for state-wide recognition and Rivers Alive selected one of our school cleanups for their impressive efforts.



Our partners continue to support collaborative programs such as Rivers Alive, Children's Water Festival, and Every Kid In A Park field trips.



Several education programs and stewardship projects were facilitated. Activities included teacher trainings, invasive plant removal, local wildlife, and water quality.



# THANK YOU

The Watershed Stewardship Program would like to thank our volunteers and supporters:

April Adams	Elizabeth Davis	Ken Jacob	Sondra Nierenberg	Joe Turner
Jo Adang	Gretchen Davis	John Jennings	Lance Norris	David Tyler
Ina Allison	Virginia Davis	Eric Johnson	Dave and Diane Ochala	Pam Varner
Marc Anthony	Jaap DeRoode	Leilani Johnson	Zack Orr	Timmy Vaughn
Audrey Arnold	Ric and Sharon Donato	Judy Jones	Michael O’Shield	Katie Vines
Rosita Asenova	Tamara Dowis-Fernandez	Jeremy Kahle	Sabrina Pemberton-Piper	Allison Walker
Cheryl Ashley-Serafine	Don Doyle	Nikeya Kaiser	Pic Petelle	Amy Warnock
Seirisse Baker	Jeremy Eaves	John Keiler	Rosco Peters	Morning Washburn
Naazneen Bandukuala	Joan Ellars	Judy Kelley	Tim Phillips	Jennifer Wells
Delon Barfuss	Alyson Epp	Alexis Kelner	Brad Plumley	Emily West
Shelly Banks	Kathy Esler	Mo Kesley	Cornelius Pope	Debra Whatley
Israel Baryeshua	Katey Evans	Nick Jokay	Diane Powell	Kait White
Rick Bauer	Norm Fagge	Cora Keeber	David Price	Kim White
Judy Beard	Dolly Fehd	John Keiler	John Purcell	Amy Whitney
Melinda Becker	Erin Feichtner	Monica Kilpatrick	Saad Rahman	Meredith Whitten
Melodie Billiot	Jennifer Fisher	Anne Kirk	Briana Ransom	Grace Whittington
Steve and Linda Bell	Aida Ford	Julie Knight	Mark Ray	Michael Williams
Alex Beswick	Cynthia Foster	Donna Leavall	Mike Reddick	Kaye Wilson
Becky and Jerry Blades	Denise Gadd	Jesse LeBoeuf	David Reifert	Jeff Wix
Bill Blythe	Jaime Garcia	Anne Ledbetter	Eddie Richards	Karan Wood
Susan Bohm	Sylvia Gerbovaz	Eric Lee	Marvin Richards	David Zandstra
Joe Boland	Connie Ghosh	Kathleen Lemley	Teresa Roby	
Angie Bolton	Alicia Giddens	Renae Lemon	Mike Roper	
Robert Bourne	Frank Gipson	Eric Liu	Elizabeth Russell	<b>... And to anyone</b>
Tripp Boyer	Diego Gomez	Simon and Patti Locke	Janiel Savage	<b>we inadvertently</b>
Helen Boyle	Guy Gray	Bill Lovelace	Daryl Sawyer	<b>forgot!</b>
Theresa Brader	Amanda Green	Joe Lukas	Kathy Schimler	
Stuart Bramwell	Angela Green	Mark Mandica	Janine Searcy	
David Bridges	Lisa Green	Linda May	Diane Searles	
Ross Brill	Nekeshia Griffin	Cathie McCabe	Joshua Seigla	
Sally Brooking	Amy Gutierrez	Jason McCoy	Pradip Shah	
Joseph Buadoo	Kristina Ha	Steve McCullers	Steve Shelton	
Eric Budd	Stacey Haire	Holly McDonald	Anne Shenk	
Roger Buerki	Terrilyn Hannah	Kathleen McElroy	John Shimmin	
Tyra Bullock	Harold Harbert	Codie McLanahan	Raghav Shyam	
Polly Burson	Woody Hays	Abraham Melkamu	Annette Simpson	
Paige Bushart	Ann Higgs	Jennifer Mercure	Jamie Slafkosky	
Sharon Camp	Bill Higgins	Susan Meyers	Dennis Smith	
Hannah Campbell	Dallin Higgins	Amanda Miller	Jayvion Smith	
JJ Campbell	Jerry Hightower	Barb Misel	Kevin Smith	
Rachel Carmack	Rick Hitchcock	Charlie Monroe	Roberta Smith	
Albert Chen	Jeff Hite	Heather Moody	Sharon Smith	
Jamie Childers	Kevin Hill	Mike Morceau	Jayson Spangler	
Annette Clark	Linda Hlozansky	Lois and Nancy Morrison	Barb Spryn	
Richard and Nancy Cole	Kim Holland	Melissa Murray	Jamie Stones	
Jamerson Conner & Mom	Victoria Hollers	Tamera Neal	Ben Story	
Ryan Coover	Chelsea Hopkins	Jessica Neely	Pam Subalusky	
Cheri Craft	Jody Hubbell	Connie Nelson	Adam Sukenick	
Barb Crane	Judy Huguenard	Tim Nelson	Josh Sweeney	
Sally Creel	Virginia Huckaby	Steve Nestor	Jim Tatman	
Stacy Cromer	John Huth	Travis Neumuller	Dave Thomas	
Vicki Culbreth	Kristine Hwang	JoAnne Newman	Jennifer Thomas	
Dannell Custred	Marge Igyarto	Frank Newton	Marjorie Thomas	
Alan Cyrier	Stephanie Ives	Kathy Nguyen	Dick Trumbull	

# OUR TEAM

The Watershed Stewardship Program is housed in the Water Quality Laboratory of the Cobb County Water System's Environmental Compliance Division.

## **Jennifer McCoy, Program Coordinator**

Jennifer has worked for Cobb County since 2000 as an environmental educator and as an environmental compliance inspector. Her work as a naturalist at a nature center, an instructor at a science museum, and a biologist for an environmental consultant contributes over 15 years of professional experience to our program.

### Education:

Master of Public Administration, Kennesaw State University, 2011  
Master of Science (Ecological Teaching & Learning), Lesley University, 2007  
Certificate (Geographic Information Systems), Kennesaw State University, 2000  
Bachelor of Science (Biology), Kennesaw State University, 1997

*Facilitator Certifications:* Project WET, Project Learning Tree, Project Wild, Monarchs in the Classroom, Leopold Education Project, Native Waters, Native Seasons, Biodiversity Basics, Healthy Water Healthy People, Adopt-A-Stream Chemical/Macroinvertebrate/Bacteria Trainer

## **Mike Kahle, Environmental Programs Specialist**

Mike joined our team in October 2011 as a part-time educator. He previously worked as program coordinator with The Nature Conservancy and as a naturalist with the Orange County Department of Education in California and Chattahoochee Nature Center.

### Education:

Bachelor of Science (Geography), University of Nevada, 2008

*Facilitator Certifications:* Project WET, Project Wild, Project Learning Tree, Adopt-A-Stream Chemical/Macroinvertebrate/Bacteria Trainer

## **Sonya Wood Mahler, Environmental Programs Specialist**

Sonya joined our team in January 2016 after relocating to Georgia. Her prior experience includes working in environmental education with the Tennessee Wildlife Federation, Kentucky Dept of Fish & Wildlife Resources, Alabama Cooperative Extension, and Florida Cooperative Extension.

### Education:

Master of Science (Natural Resource & Environmental Education), University of Wisconsin, 1992  
Bachelor of Science (Secondary Science Education), Auburn University, 1983  
Bachelor of Science (Marine Biology & Physics), Auburn University, 1982

*Facilitator Certifications:* Project WET, Project Learning Tree, Project WILD, Master Environmental Educator, Classroom in the Forest

## **Angie Marcus, Program Assistant**

Angie joined our team in July 2015 and works primarily on coordinating the Brooke and Branch Puppet Show. Her background includes work in youth counseling as well as environmental education with Virginia 4-H and Learning Tree Farms.

### Education:

Master of Social Work (Family & Children), Kennesaw State University, 2014  
Master of Education (Outdoor Education Administration), Georgia College & State University, 2000  
Bachelor of Arts (Sociology), Lenoir-Rhyne University, 1997

*Facilitator Certifications:* Project WET, Project Learning Tree, Project WILD, Challenge Course Trainer

## **Penny Costanzo, Program Assistant**

Penny came to WSP in January 2015. She has been an environmental educator and professional actress for over thirty years, having taught at the Harvard University Zoology Museum and for Young Audiences, an arts in education program.

### Education:

Master of Education (Elementary), Tufts University, 1975  
Bachelor of Arts (English), Kenyon College, 1974

*Facilitator Certifications:* Master Naturalist, Brain Education Teacher/Trainer, Dahn Yoga Master



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



*Connecting Community to Local Ecology*  
[www.cobbstreams.org](http://www.cobbstreams.org)

Cobb County Watershed Stewardship is funded through the Cobb County Board of Commissioners, available grant programs, and sponsors.



*Cobb County...Expect the Best!*

Michael H. Boyce, Chairman  
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Rob Hosack, County Manager