

the Thalweg

Watershed Stewardship Program

Spring 2015

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



Follow our company page on LinkedIn.



Read our Rain & Wildlife Garden Phenology Blog

WSP on the Web

The Watershed Stewardship Program is excited to announce several new internet initiatives! Peruse our new website, connect with us on LinkedIn, and read more about our garden on Blogspot. As we develop these programs, we welcome your feedback. Send your suggestions to water_rsvp@cobbcounty.org.

WSP's New Website

The Watershed Stewardship Program is in the process of designing and building its new website. The updated site will be icon driven, allowing for easier navigation and a cleaner look. On the home page, you will be able to choose from Educate, Discover, Volunteer, and Connect:

- **Educate** • Information on our school outreach programs; water quality fact sheets for businesses; and an overview of Cobb County's geography, historical land use, and local water quality.
- **Discover** • Learn how you can incorporate healthy habits into your lifestyle by exploring icons about rain barrels, pet waste education, cigarette litter prevention, and more.
- **Volunteer** • Displays icons that highlight and provide more information about WSP's volunteer initiatives.
- **Connect** • Links to Cobb County's partners in watershed stewardship.

You will still access the page via www.cobbstreams.org, and we hope to launch the new website in the coming months. Stay tuned!

LinkedIn

Announcing the Watershed Stewardship Program LinkedIn Company Page! LinkedIn is a business-oriented social networking service. WSP recently created a company page on LinkedIn with the goal of connecting to and providing resources for our network of volunteers, colleagues, and partners. On our page, we will post weekly status updates, including programmatic news, volunteer opportunities, WSP publications, job openings, and professional articles we feel are pertinent to our volunteers.

To connect with us and receive our LinkedIn updates, visit our page and click "Follow":

www.linkedin.com/company/cobb-county-watershed-stewardship-program. You can also add LinkedIn's "Volunteer and Causes" section to your profile to showcase your service with the Watershed Stewardship Program.

Rain & Wildlife Garden Phenology Blog

Starting on January 1, 2015, the WSP's blog covers the changes that occur in our Rain & Wildlife Garden. We hope to capture the beauty of our themed garden beds while highlighting the hard work of our volunteers, who dedicate their time to keeping this small patch of earth alive and viable for pollinators, small birds, mammals, reptiles, insects, and the occasional amphibian. Of course, the rain garden beds are a big part of this project, capturing storm water runoff so that it absorbs into the ground before it enters nearby streams.

The blog features a photo journal that will display the phenology, or responses to seasonal changes, of our garden. To read the blog and view the pictures, visit <http://watershedraingarden.blogspot.com>. If you would like to see our garden in action, always feel free to stop by the Cobb County Water Quality Laboratory in Marietta.

Genetic Secrets of the Monarch Butterfly Revealed

Study sheds light on evolutionary origins and the genes central to migration and warning coloration.

By Kevin Jiang
University of Chicago News
October 6, 2014

The monarch butterfly is one of the most iconic insects in the world, best known for its distinct orange and black wings and a spectacular annual mass migration across North America. However, little has been known about the genes that underlie these famous traits, even as the insect's storied migration appears to be in peril.

Sequencing the genomes of monarch butterflies from around the world, a team of scientists has now made surprising new insights into the monarch's genetics. They identified a single gene that appears central to migration—a behavior generally regarded as complex—and another that controls pigmentation. The researchers also shed light on the evolutionary origins of the monarch. They reported their findings on Oct. 1, 2014 in *Nature* ("The genetics of monarch butterfly migration and warning colouration" - www.nature.com/nature/journal/v514/n7522/full/nature13812.html).

"The results of this study shift our whole thinking about these butterflies," said study senior author Marcus Kronforst, Neubauer Family Assistant Professor of Ecology and Evolution at the University of Chicago.

Every year, millions of monarchs fly from as far north as Canada to spend the winter in Mexico. Predominantly a North American species, the monarch also exists in South and Central America, and has relatively recently spread across the Atlantic and Pacific oceans. Only North American monarchs migrate.

A NORTH AMERICAN ORIGINAL

To better understand monarch genetics and the basis for migratory behavior, Kronforst's team sequenced and compared the genomes of 101 butterflies, including migratory North American monarchs, non-migratory monarchs from around the world and a few closely related species.

The researchers analyzed the monarch's evolutionary origins using genetic comparisons. They traced the ancestral lineage of monarchs to a migratory population that likely originated in the southern U.S. or Mexico. The monarch's current worldwide distribution appears to stem from three separate dispersal events—to Central and South America; across the Atlantic and across the Pacific. In all three cases, the butterfly independently lost its migratory behavior.

The monarch's North American origin runs counter to a long-standing hypothesis that the butterfly originated from a non-migratory tropical species, which later developed the ability to migrate. While historical records have suggested that the monarch's dispersal across the Pacific and Atlantic occurred in the 1800s, the analysis indicated the monarch actually crossed the oceans thousands of years ago. The authors note that more work needs to be done to fully document the butterfly's evolutionary history.

"In order to clearly resolve the history of monarch butterflies, we still need additional fossil, archaeological and genetic data, as well as more advanced technology, becoming available in the future," said study author Shuai Zhan, a professor in Shanghai Institutes for Biological Sciences and a former joint postdoctoral fellow at the University of Chicago and the University of Massachusetts Medical School.



Sequencing the genomes of the iconic monarch butterfly led to some new insights, including the discovery of a gene that appears central to migration.

SLOW AND STEADY

To study the genetic basis for migration, the team compared the genomes of migratory butterflies against the three non-migratory populations. They identified more than 500 genes—most of which are involved in muscle, developmental and neural function—that differed to some degree. But a single gene disparity stood out.

Migratory butterflies expressed greatly reduced levels of collagen IV α -1, a gene involved in flight muscle formation and function. The team discovered that migratory monarchs consumed less oxygen and had significantly lowered flight metabolic rates, which likely increases their ability to fly long distances compared to non-migratory butterflies.

“Migration is regarded as a complex behavior, but every time that the butterflies have lost migration, they change in exactly the same way, in this one gene involved in flight muscle efficiency,” said Kronforst. “In populations that have lost migration, efficiency goes down, suggesting there is a benefit to flying fast and hard when they don’t need to migrate.”

THE COLOR GENE

The researchers also investigated the genetic basis for the monarch’s famous coloration. A small percentage of monarchs, most notably in Hawaii, possess white and black wings instead of orange. Comparing the genomes of these butterflies against normally colored populations, the team discovered a single gene appears to function as a pigmentation switch.

This gene, which codes for a protein of the myosin motor protein family, has never before been implicated in insect coloration. Its mutation likely disrupts the pigment transport to the wings, making the monarchs white. A related gene in mice, myosin 5a, has been shown to affect coat color in a similar way. The gene represents a new genetic pathway to explore insect coloration, according to Kronforst.

MIGRATION IN PERIL

Although the monarch isn’t in danger of extinction, its famous mass migration across North America appears to be in peril. In 1996, around one billion monarchs migrated to Mexico for the winter. Estimates for the past year place the number at around 35 million. A likely culprit is the loss of milkweed, the monarch’s primary habitat, due to agricultural herbicide use. Meanwhile, monarchs that used to migrate are transitioning into non-migratory populations around the Gulf Coast.

The results of this study emphasize the need for conservation efforts to preserve the iconic migration and extend the extraordinary evolutionary history of the monarch butterfly, according to the authors.



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In 1996, around one billion monarchs migrated to Mexico for the winter, but estimates for the past year place the number at around 35 million.

“You used to see huge numbers of monarchs, clouds of them passing by,” said Kronforst. “Now it looks quite possible that in the not too distant future, this annual migration won’t happen.”

The study, “The genetics of monarch butterfly migration and warning colouration,” was supported by the National Institutes of Health, the National Science Foundation and Neubauer Funds from the University of Chicago.

Additional authors include Wei Zhang from the University of Chicago, Kristjan Niitepold and Jeremy Hsu from Stanford University, Juan Fernandez Haeger from the University of Cordoba, Myron P. Zalucki from the University of Queensland, Sonia Altizer from the University of Georgia, Jacobus C. de Roode from Emory University and Steven M. Reppert from the University of Massachusetts Medical School.

To read this article online, visit <http://news.uchicago.edu/article/2014/10/06/genetic-secrets-monarch-butterfly-revealed>.

Images courtesy of The University of Chicago Medicine and Biological Sciences.

You can expect to see monarch butterflies in Georgia as part of their northern migration during the end of March to early April. Learn more about monarchs and how you can get involved with conservation and citizen science initiatives by visiting the Monarchs Across Georgia website: www.ealliance.org/monarchs-across-ga.

2014 WATERSHED STEWARDSHIP AWARD WINNERS

On March 31, 2015, volunteers, students, and teachers will gather for our annual Watershed Stewardship Fair. Attendees have the opportunity to showcase their water protection efforts and meet others who share the passion for keeping our waterways healthy. We also celebrate the accomplishments of our volunteers and partners by presenting Cobb County Watershed Stewardship Awards.

Fairfax Consulting Services – 2014 Cobb County Watershed Stewardship Monitoring Group of the Year



Denise Gadd and Joe Turner of Fairfax Consulting.

The Watershed Stewardship Program is pleased to honor Fairfax Consulting Services with the 2014 Monitoring Group of the Year award. The group comprises Denise Gadd and her father, Joe Turner. The team has conducted Adopt-A-Stream chemical and bacterial monitoring on Powder Springs Creek in Powder Springs, Georgia for the last five years. They first monitored on February 3, 2010 and have submitted data nearly every month since then, totaling 59 monitoring events. Within one week of initial chemical certification, Denise, the official leader of the group, submitted her first data set. Three months later, she was certified in bacteria monitoring and immediately began submitting data.

We had the opportunity to visit Denise and Joe for a monitoring event in October 2014, and we received a tour of their adopted monitoring site, situated on the edge of their property. We witnessed Joe and Denise work as a competent team, collecting data and following QA/QC protocols. By watching them at work, we saw how much they truly understand their data, the collection techniques, the meaning of each parameter, and how to read the results comprehensively and holistically. They have perfected their data collection and have collected solid and precise data from the beginning.

In addition to excellent data collection, Denise and Joe do a fantastic job protecting and maintaining the stream buffer, allowing both canopy and understory vegetation to exist. They have also established a Conservation Easement for their stream-side property. The two model an incredible knowledge of their stream site and local watershed. Joe communicates with his neighbor, whose shared property boundary runs a segment of the stream, about issues such as erosion, bank undercutting, stormwater runoff, and debris and garbage removal for the buffer zone. Denise and Joe are quick to report potential water quality issues while using sound judgment to determine what might be the source. For example, in a wetland area downstream of their monitoring site, they noticed patches of tall white foam. The potential for greywater discharge in the area is higher than in other areas of the county, so they have monitored the issue for over a year now. Due to the short-lived nature of foam-forming pollutants in the stream, the source was never found. However, the issue has been raised with Cobb Water's stream monitoring unit, who visit the area on a regular basis.

Denise Gadd's and Joe Turner's commitment to water protection and the Powder Springs Creek Watershed is clearly evident to us. Because of their quality data collection, knowledge and care of their local watershed, and consistent data reporting, we truly feel that Fairfax Consulting is deserving of the Monitoring Group of the Year award.

Daughters of the American Revolution Fielding Lewis Chapter – 2014 Cobb County Watershed Stewardship Stewards of the Year



DAR storm drain marking volunteers.

The Watershed Stewardship Program is honored to recognize the Fielding Lewis Chapter of the Daughters of the American Revolution (DAR) as the 2014 Stewards of the Year for their extraordinary efforts in storm drain marking. The DAR became involved with storm drain marking in March of 2014. In one year, the group has placed aluminum markers that read "No Dumping - Drains to Creek" on storm drains in seventeen neighborhoods throughout the County, totaling 368 storm drains marked. Also as part of the project, the DAR distributes educational materials, with information about stormwater and water pollution prevention topics, to the homes in neighborhoods they mark. The DAR has delivered these materials to over 1500 homes. Since becoming involved a year ago, the group has logged 157 volunteer hours, which is valued at \$3,480 according to the Independent Sector.

The DAR's dedication to watershed stewardship is exceptional, and they are a model volunteer group. They are truly a pleasure to work with, and we look forward to continuing the relationship and supporting their volunteer goals. We are pleased to present the Daughters of the American Revolution with the Stewards of the Year award. Many thanks to the DAR members who have participated in storm drain marking: Barbara Belter, Betty Christy, Rene Hardin, Teresa Roby, Elaine Zecher, Gayle Brackin, Elaine Cross (Fielding Lewis Chapter Regent), Vickie Hoffman, Leslie Wylie, Boy Scout Troop 405, and their families.

"Most people think of the DAR as a lineage organization, since membership depends on documenting lineage to an ancestor who aided the cause of American independence. What they don't realize is that it is a volunteer women's service organization with over 30 committees, many of which are service based. The Conservation Committee is one of those service based committees. When looking for a service project, the Conservation Committee wanted to find something that any member could participate in. Our members range from 18 years old to their early 90s, and we chose the Storm Drain project because any member who wanted to could find a way to participate. Whether it was preparing the educational packets, putting down the storm drain markers, putting the educational packets on mailboxes, or marking the maps, there was a place for any member who wanted to be involved. We also found it to be good exercise!"

- Teresa Roby, Conservation Committee Chairman and point of contact between WSP and DAR



DAR member Leslie Wylie and her 4 year old son, Connor.

**National Park Service Chattahoochee River National Recreation Area –
2014 Cobb County Watershed Stewardship Partner of the Year**

There has been a partnership between the National Park Service (NPS) and Watershed Stewardship Program for nearly as long as the Watershed Stewardship Program has existed. The relationship first began with WSP working with the Park to coordinate float cleanups along the Chattahoochee River National Recreation Area (CRNRA) corridor in Cobb County. Since then, it has thrived and developed to include school and youth programs, educator trainings, and volunteer activities. The support we receive from NPS allows us to provide amazing programs, and these programs would not be possible without the help and expertise of NPS staff.

Over the years, WSP and NPS have worked together to provide environmental education programs to thousands of students. Since 2006, fourth graders from various Cobb County schools have attended the annual Children’s Water Festival, a collaborative event between NPS, WSP, and other local governments and organizations. At the event, students participate in several hands-on water education sessions. Starting in 2013, with funding from The National Parks Foundation and in partnership with CRNRA, third grade students from Title-One schools in Cobb County, with 90+% students on free or reduced lunch, were able to participate in the Ticket to Ride program, a water quality and stewardship event. In two years, eight Cobb County schools have participated in Ticket to Ride, during which students receive a day of lessons at the Chattahoochee River and two in-school sessions. Starting in 2015, WSP and NPS will also partner on a spring break nature camp for local students.



Marjorie Thomas facilitating a post Ticket to Ride program at a local school.



Ranger Jerry Hightower leading a nature hike at the Chattahoochee River for a Ticket to Ride program.

WSP and NPS have also collaborated to facilitate educator workshops. During the summer of 2014, the “Empowering Educators to Paddle GA with Students” teacher training was offered as part of Paddle Georgia 2014, a weeklong paddle trip down the Chattahoochee River. WSP and NPS facilitated the training, which included Project WET and Adopt-A-Stream certification. Also during the summer of 2014, NPS provided an interpretive rafting trip on the Chattahoochee as part of Cool Waters, a water workshop for Georgia educators that was organized and facilitated by WSP and other local governments.

In addition to education programs, NPS and WSP collaborate on volunteer events and initiatives. NPS has provided support on Rivers Alive cleanup events for over ten years, supplying canoes and paddling instruction. NPS also supports the Sierra Club Cobb Centennial monitoring group, who has conducted Adopt-A-Stream chemical, bacterial, and macroinvertebrate monitoring in the CRNRA since 2004. New this year, NPS will provide a free interpretive paddle trip to the winners of the Chattahoochee Basin Volunteer Challenge, a volunteer competition created by WSP.

We love working with the CRNRA staff - Marjorie Thomas, Jerry Hightower, John Huth, and Dave Thomas - and hope to continue working collaboratively to deliver quality programs and unique educational opportunities to our community. Thank you all so much for the support you provide our program and staff. We are honored to recognize CRNRA as our Partner of the Year.

VOLUNTEER OPPORTUNITY

**9th Annual River Rendezvous
Saturday, May 2nd, 2015
8:00am - 2:00pm
Cobb County Water Quality Lab**



It’s time again for the annual River Rendezvous volunteer water quality monitoring event! The Watershed Stewardship Program and Sierra Club Cobb Centennial Group are looking for volunteers who want to have fun and be outdoors while donating their time to a good cause. At the event, volunteers will visit 30 sites along Rottenwood Creek to collect samples for lab analysis, perform water quality tests and habitat surveys, and clean litter from the creek.

Afterward, join us for a lunch cookout. The Sierra Club provides hotdogs and hamburgers as well as vegetarian options, and volunteers are asked to bring a side dish or dessert to share.

This is a fun, all ages event. No experience in water testing is necessary, but come prepared to be outdoors and meet others who share the passion for keeping our waterways healthy!

Email water_rsvp@cobbcounty.org to register.

OBSERVATIONS

Bats



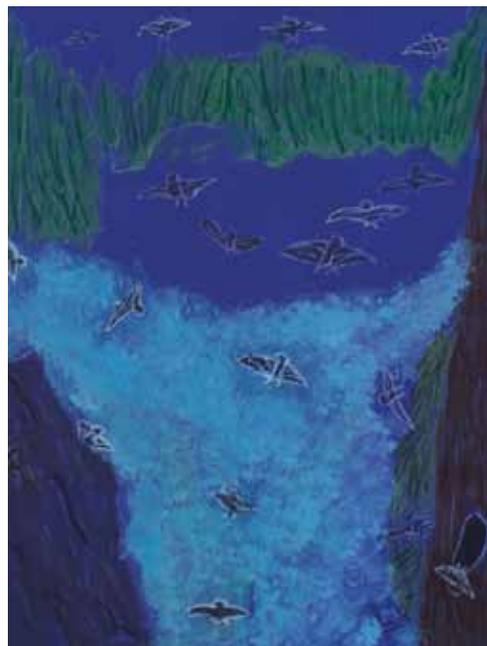
Northern Long-Eared Bat
(*Myotis septentrionalis*). www.nrmg.org

Georgia is home to 16 of the 45 species of bats that live in the United States. Like humans, bats are mammals that give birth to live young and feed them from mammary glands. Although breeding takes place in the fall, fertilization does not occur until the following spring. Young typically are born in May and June. Most female bats only have one offspring per year, although some species give birth to three or four at a time. The young develop quickly and can fly within 2-5 weeks after birth. Bats live a long time considering their small size, some as long as 30 years.

Linda May
Environmental Outreach Coordinator
Georgia DNR Wildlife Resources Division

As the weather warms, keep a lookout for bats flying through the sky to catch insects. Try to get outside about half an hour before sunrise or sunset when the weather is warm and dry. Look all around the sky, in open areas, and near trees. If you are by water, watch for bats skimming the surface.

Source: Bat Conservation Trust



Woodland Bats

Witt Sperau
Grade 2
Casa Montessori School, Marietta
Teacher: Hedwig O'Brien
2009 Georgia River of Words State Art Winner

ANNOUNCEMENTS

Chattahoochee Challenge Update

The Chattahoochee Challenge is a volunteer competition created by the Watershed Stewardship Program to promote the participation in and organization of waterway related service projects. Below is the current leader board for the competition:

- 1st Place:** Mabry Middle School Environmental Club - 80 volunteer hours
- 2nd Place:** Pope High School Environmental Club - 77 volunteer hours
- 3rd Place:** South Cobb High School Environmental Club - 64 volunteer hours

At the end of the contest, the individuals or groups that have accumulated the most volunteer service hours will win a free rafting trip on the Chattahoochee River with a park ranger from the National Park Service!

Be sure to check the Summer 2015 issue of *The Thalweg* to find out the winner of the contest!



On Saturday, February 14th, 2015, nineteen volunteers participated in a privet pull as part of the Challenge. The volunteers spent the morning removing privet, a non-native, invasive plant from the landscape around Nickajack Creek at Heritage Park. Great work!

Cool Waters

A Water Workshop for Georgia Educators

At this summer educator training, formal and non-formal educators will learn about drinking water, wastewater, and surface water through field trips and hands-on activities. Participants will visit a drinking water plant and wastewater plant, take a guided raft float down the Chattahoochee River, and earn 2 PLUs.

June 9-11, 2015

7:30am - 4:00pm each day

Georgia Association of Water Professionals
1655 Enterprise Way, Marietta, GA 30067

The cost is \$40 and includes meals, field trips, and Project WET and Urban Watershed curriculum guides. Plus, stipends are available to teachers who complete the training!

The registration deadline is May 29th. Space is limited, so sign up today at www.gawp.org/event/15CoolWaters. For more information, call Heather Moody at 678-376-6722.



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



Follow our company page on LinkedIn.



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



Read our Rain & Wildlife Garden Phenology Blog

CONSERVATION TIP

Egg Shells Aren't Just for the Compost Heap: Feeding the Birds

Before and after laying eggs, mother birds need extra calcium in their diets. To reduce the risk of transferring any salmonella to the birds, either boil your shells or bake them at 250 degrees Fahrenheit for ten to fifteen minutes. Allow the shells to cool and then add them to your existing feeders. Many times, I'll mix the shells with whatever I have out for the birds, but other times I like to place a small tray out by itself to watch the robins go wild when they're nesting. They can't seem to get enough of them!

From the Green Meadows Community Garden Blog

ECOPEDIA

Phenology

Phenology is nature's calendar - when cherry trees bloom, when a robin builds its nest, and when leaves turn color in the fall. It refers to recurring plant and animal life cycle stages and the study of these stages, especially their timing and relationships with weather and climate.

USA National Phenology Network

SEASONAL HAPPENINGS

Pollinator Day

June 15-21 is National Pollinator Week, and Cobb County is celebrating!

Thursday, June 18th, 2015

10:00am - 11:30am

Wildlife and Rain Garden • Cobb County Water Quality Lab
Call 770-528-2284 or email kaye.wilson@cobbcounty.org to register.

This free event is open to the public and will include a garden tour, bug hunt, butterfly craft, and information about creating a pollinator-friendly habitat in your yard.

ANNOUNCEMENTS

Farewell to Kathleen

We would like to graciously wish a bitter-sweet farewell to our dear friend and colleague Kathleen Lemley. March 19 marked Kathleen's last day with the Watershed Stewardship Program (the bitter part) as she and her husband Chas start a family (the sweet part) with their first baby due in April. As Kathleen begins her new adventures in parenthood, she will greatly be missed, not only here in the Watershed Stewardship office, but by many in the Water System, the schools she brought programs to, and the volunteers she helped to complete service projects. Congratulations and best wishes for you and your new family! We are beyond happy for you and will miss you dearly!



Atlanta Regional Commission Survey

The Atlanta Regional Commission (ARC) is seeking your feedback! Atlanta is facing a future of rapid change, innovation, and advanced technology. How should we prepare for these trends? What are your thoughts on autonomous vehicles, mobile workplace technology, regional job growth, and regional transit expansion? Help develop the vision and ARC's policy by completing the Regional Plan Survey: www.atlantaregional.com/the-regional-plan/the-region-s-plan.

Stewardship Stars Excellence in Data Collection

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

Butler Creek Kennesaw

Chemical, Bacterial, & Visual Monitoring in the Butler Watershed

Fairfax Consulting

Chemical & Bacterial Monitoring in the Powder Springs Watershed

Friends of Gable Creek

Chemical Monitoring in the Sope Watershed

GA Lake Monitoring

Chemical Monitoring in the Etowah Watershed

Keep Smyrna Beautiful Adopt-A-Stream

Chemical Monitoring in the Nickajack Watershed

Lakewood Colony

Chemical & Bacterial Monitoring in the Rubes Watershed

Richard's Creek

Chemical Monitoring in the Allatoona Watershed

Sally Brooking

Chemical Monitoring on Sope Creek

Sharon & Rick Donato

Anuran Monitoring in the Rubes Watershed

Sierra Club Cobb Centennial Group

Chemical, Biological, & Bacterial Monitoring in the Rottenwood Watershed

Village North Highlands Subdivision

Chemical & Bacterial Monitoring in the Willeo Watershed

**Thank you for heading out
during our coldest months!**

RECOMMENDED RESOURCE

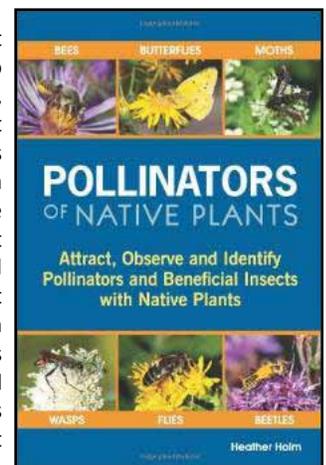
Pollinators of Native Plants: Attract, Observe and Identify Pollinators and Beneficial Insects with Native Plants

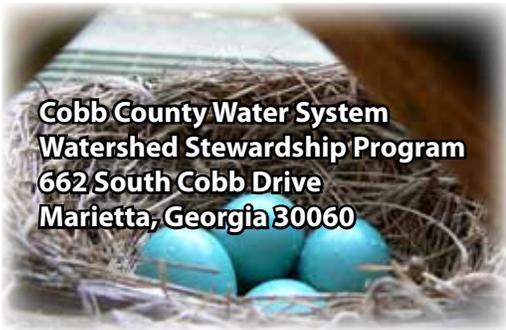
By Heather Holm

From the back cover:

"If you are a person that lingers at flowers and gets close enough to marvel at all the bees, butterflies, moths, beetles, wasps, and flies that visit flowers for food, you will love this book. Heather Holm has compiled a gorgeous and super-informative guide to the pollinating insects that visit native prairie, woodland and wetland flowering plants. At last, a book that tells us the whole picture: the bloom time, range, habitat, and characteristics of flowers that attract pollinators, and the life-histories and fascinating traits of the many beneficial insects that pollinate the flowers. As I sit here on this cold winter day admiring the beautiful photos, I am filled with hope that our bees and pollinators will abound next summer and evermore."

- Marla Spivak, Professor, University of Minnesota





**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

April

- 2 Garden Work Day • 9:00am - 11:00am • Cobb County Water Quality Laboratory
- 9 Garden Work Day • 9:00am - 11:00am • Cobb County Water Quality Laboratory
- 16 Garden Work Day • 9:00am - 11:00am • Cobb County Water Quality Laboratory
- 18 Storm Drain Marking in East Cobb • 9:00am - 12:00pm • Terrell Mill Park
- 21 Rain Barrel Make & Take Workshop • 10:00am - 11:00am • Cobb County Water Quality Laboratory
- 22 Earth Day
- 22 Anuran Monitoring Workshop • 6:30pm - 9:00pm • TBD
- 23 Garden Work Day • 9:00am - 11:00am • Cobb County Water Quality Laboratory
- 23 Adopt-A-Stream Bacterial Monitoring Workshop • 6:00pm - 8:30pm • Cobb County Water Quality Laboratory
- 24-25 Cobb County Master Gardener Plant Sale & Garden Fair • Jim Miller Park • Marietta, Georgia • www.cobbmastergardeners.com
- 30 Garden Work Day • 9:00am - 11:00am • Cobb County Water Quality Laboratory

May

- 2 River Rendezvous • 8:00am - 2:00pm • Cobb County Water Quality Laboratory
- 2 No Water No Beer Festival • 6:30pm - 9:30pm • Sweetwater Brewery • www.gawwa.org
- 6 Rain Barrel Make & Take Workshop • 1:00pm - 2:00pm • Cobb County Water Quality Laboratory
- 6 Adopt-A-Stream Chemical Monitoring Workshop • 6:00pm - 8:30pm • Cobb County Water Quality Laboratory
- 7 Garden Work Day • 8:30am - 10:30am • Cobb County Water Quality Laboratory
- 9 Cobb County Master Gardener Garden Tour • 10:00am - 5:00pm • www.cobbmastergardeners.com
- 13 Homeschool Summer Program • Creek Stomp • TBD • contact: kaye.wilson@cobbcounty.org
- 14 Garden Work Day • 8:30am - 10:30am • Cobb County Water Quality Laboratory
- 21 Garden Work Day • 8:30am - 10:30am • Cobb County Water Quality Laboratory
- 28 Garden Work Day • 8:30am - 10:30am • Cobb County Water Quality Laboratory

June

- 9-11 Cool Waters Georgia Educator Water Workshop • 7:30am - 4:00pm • Georgia Association of Water Professionals • www.gawp.org
- 11 Garden Work Day • 8:30am - 10:30am • Cobb County Water Quality Laboratory
- 16 Every Hero Has a Story • Children's Summer Library Program • 10:00am - 11:00am • Gritters Branch Library
- 17 Every Hero Has a Story • Children's Summer Library Program • 12:00pm - 1:00pm • Stratton Library
- 18 Pollinator Day • 10:00am - 11:30am • Cobb County Water Quality Laboratory • contact: kaye.wilson@cobbcounty.org
- 18 Rain Barrel Make & Take Workshop • 2:00pm - 3:00pm • Cobb County Water Quality Laboratory
- 18 Adopt-A-Stream Bacterial Monitoring Workshop • 6:00pm - 8:30pm • Cobb County Water Quality Laboratory
- 24 Every Hero Has a Story • Children's Summer Library Program • 3:30pm - 4:30pm • Kennesaw Branch Library
- 25 Garden Work Day • 8:30am - 10:30am • Cobb County Water Quality Laboratory

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