

the Thalweg

Watershed Stewardship Program

Fall 2018

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Cobb County Board of Commissioners

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You're Invited! Join us for a Lunch & Learn

In response to common questions and concerns about various topics related to water quality, pollution prevention, and other issues that the Water System can help with, the Watershed Stewardship Program is offering a series of Lunch & Learns. Held in an informal setting with time consideration for the typical lunch break, these will provide Cobb residents a chance for questions and answers to better understand the ins and outs of our water supply, how to protect it, and how the system works for everyone. Topics throughout the year will vary from wildlife, system maintenance, plumbing tips, and much more. With a diverse agenda of topics, anyone and everyone is welcome!

September 21st - Water and Wastewater 101

Whether you're on sewer or septic, understanding simple steps to caring for your in-home water system is essential for health, saving money, and effectiveness.

November 16th - The Watersheds of Cobb County

There are 26 watershed basins in Cobb County. Understanding the basin you live in can help reduce your impact on water quality. We'll touch on some of the larger watersheds and highlight their prominent features.

January 18th - Rain Gardens

Capturing stormwater runoff at home is a simple and beautiful way to reduce urban runoff and decrease the volume of water that enters our waterways. Learn the basics of developing a rain garden for the typical residential landscape.

March 15th - Household Hazardous Waste

We use many products that contain chemicals that may be hazardous to the environment. Learn how to interpret labels and properly dispose of these household hazardous waste products.

All lectures are from 12:00 to 12:45 pm

Water Quality Laboratory Training Room
662 South Cobb Drive, Marietta, GA 30060

Don't forget to bring your lunch

Registration is required

To register visit www.cobbstreams.org, under calendar
For more information email Water_RSVP@cobbcounty.org or call 770.528.1482

'Forest Bathing' Really May Be Good For Health, Study Finds

Alice G. Walton

<https://www.forbes.com/sites/alicegwalton/2018/07/10/forest-bathing-really-may-be-good-for-health-study-finds/#4a3f04f3508e>

Photo credit: <https://tinyurl.com/ydg3s8zl>



'Forest bathing' or shinrin yoku—spending time in a forest or other green space to reap the health benefits—has become an increasingly popular activity in recent years, especially in some countries, like Japan, which take it pretty seriously. And with good reason—the practice isn't some new-age form of woo-woo healing; it's an increasingly well-evidenced health habit that's garnered a lot of popular and scientific interest in the last few years.

A new meta-analysis in the journal *Environmental Research* finds that people who spend more time in green spaces have significantly reduced risks for a number of chronic illnesses. There are probably several mechanisms behind the connection, but one of the more fascinating ones likely has something to do with phytochemicals that trees emit, and humans breathe in.

The researchers, from the University of East Anglia, looked back at data from a slew of earlier studies—103 observational studies and

40 interventional studies. In the latter, different types of interventions were carried out, like assigning people to engage in shinrin yoku (forest bathing) or the equivalent in an urban space. Others looked at post-operative recovery time of people who could see greenery out their hospital window compared to those who could only see a wall; another compared spending time near greenery vs. water.

All told, the research tracked a whopping 290 million participants, from 20 different countries. Participants were 50% of which were in Europe, but many studies (24) were from Japan, where forest bathing is popular. The team correlated the amount of time people spent in green spaces with 100 health outcomes over time, and found a number of relationships.

Spending more time in green spaces was linked to reduced levels of the stress hormone cortisol, lower heart rate, reduced risk of coronary heart disease, lower blood pressure, lower cholesterol, reduced risk of type II diabetes, reduced all-cause mortality and death from heart disease. For women who were pregnant, more time spent in greenery was linked to reduced risk of "small size for gestational age" in the baby as well as preterm birth. Among all the participants, on average, there was an increased likelihood of self-reporting one's health as "good."



Photo credit: <https://tinyurl.com/ydg3s8zl>

Some studies also suggested a possible link between green spaces and cancer outcomes, neurological outcomes, sleep duration, and certain biomarkers. The authors do note that some of the studies included weren't of the highest quality, and further research is certainly warranted.

A number of plausible mechanisms exist, including the obvious—green spaces promote physical activity, social interaction, exposure to sunlight, and reduced pollution, which all boost health in various ways. The less obvious explanations include the “old friends” hypothesis, which suggests that the increased exposure to microorganisms can bolster the immune system, which in turn leads to reduced risk of chronic disease and early death.

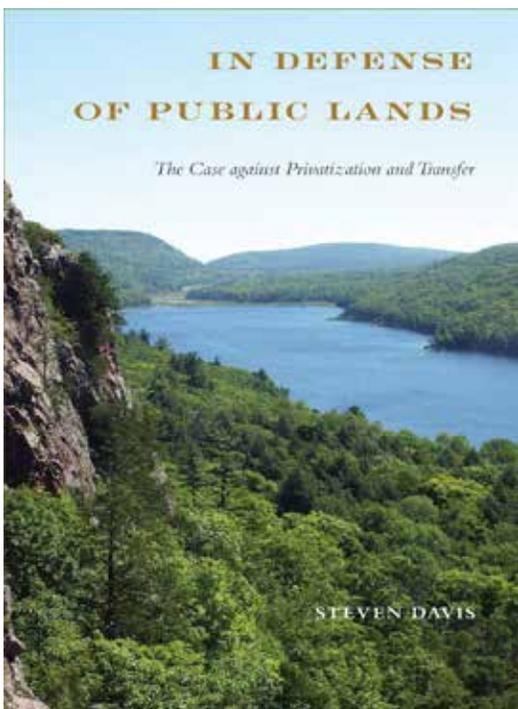
But there's also another possibility—chemicals emitted by the trees themselves, which may affect our immune systems in various ways. “Much of the literature on forest bathing suggests that phytoncides (volatile organic compounds with antibacterial properties) released by trees may explain the salutogenic properties of shinrin yoku [forest bathing],” the authors write. Some studies have also shown that the compounds may increase the activity of the immune system's natural killer cells themselves.



Photo credit: <https://tinyurl.com/ydg3s8zl>

According to the paper, people have been aware of the connection between greenery and health since the 19th century, which may be part of why city parks and green spaces were developed so thoroughly in that period. The authors suggest that “green prescriptions,” especially for those who lack everyday access to green spaces, may be a valuable addition to medicine, as they could have measurable health benefits over the years. And, as those who spend regular time in nature know, the mental health benefits of forest bathing may be just as strong.

RECOMMENDED RESOURCES



In Defense of Public Lands: The Case against Privatization and Transfer by Steven Davis

"Debates continue to rage over the merits or flaws of public land and whether or not it should be privatized—or at least, radically reconfigured in some way. *In Defense of Public Lands* offers a comprehensive refutation of the market-oriented arguments. Steven Davis passionately advocates that public land ought to remain firmly in the public's hands. He reviews empirical data and theoretical arguments from biological, economic, and political perspectives in order to build a case for why our public lands are an invaluable and irreplaceable asset for the American people.

In Defense of Public Lands briefly lays out the history and characteristics of public lands at the local, state, and federal levels while examining the numerous policy prescriptions for their privatization or, in the case of federal lands, transfer. He considers the dimensions of environmental health; markets and valuation of public land, the tensions between collective values and individual preferences, the nature and performance of bureaucratic management, and the legitimacy of interest groups and community decision-making. Offering a fair, good faith overview of the privatizers' best arguments before refuting them, this timely book contemplates both the immediate and long-term future of our public lands"

Sources: <https://tinyurl.com/y84zwr1>



Journey North's Monarch Butterfly's Symbolic Migration

Monarch butterflies are probably the most widely recognized butterfly, due to their distinct orange, black, and white wings. They are considered the “king” of butterflies, hence the name “monarch.” Monarch butterflies pass through our area twice a year. Once in the spring heading north for the summer, and once in the fall heading to overwinter in Mexico and Southern California. While the Monarchs in the fall are a couple of generations later than the spring visitors, the generation born in the fall could be the same ones you see in spring. This year, it is predicted the Monarchs will visit our area from September 29 through October 11. Although dates can be relatively predicted, they can fluctuate based on several factors such as wind direction and speed, cold fronts, and other unpredictable weather patterns. During this time, you may see monarchs outside, but there are additional ways to follow along the monarch’s lengthy journey to Mexico.



Report your monarch sightings on journeynorth.org

One valuable resource that can help you track the monarchs journey is journeynorth.org. For the past 25 years, Journey North has provided information and tracking for citizen science projects for children and the general public. The project has over 60,000 registered sites in the US, Canada, and Mexico. Families, teachers, schools, nature centers, professional scientists, and novices report sightings from the field, take pictures, and leave comments about their sightings. These sightings are mapped in real-time as the waves of migrations move across North America. From Journey North’s homepage, you can view maps of reported sightings and see the details and photos from reported sightings. If you are interested in reporting your sightings, completing a simple registration form will get you started.

send them to Mexico. Once they arrive, students who live beside the monarchs’ winter sanctuaries in Mexico will protect the paper butterflies through the winter. Sometime in March, the paper butterflies will be returned north carrying special messages from the students in Mexico. This symbolic migration is timed to correspond with the real monarchs’ journey. The deadline for this year’s project being postmarked is October 12th. During the paper butterflies time in Mexico, participating students can read monarch butterfly news from Mexico, learn about living in the monarch sanctuary region, and see their class butterfly in Mexico. When butterflies are returned in the spring, students do not receive their own class or individual butterflies, but will receive butterflies from other students in North America. After reporting in the fall and spring, classes are able to see where their butterflies landed! Journey North also provides extensive teaching tools for vocabulary, reading, writing, and scientific inquiry.

Whether you are an educator, or just a curious citizen, journeynorth.org provides a wealth of resources and information. We hope you will enjoy following along on the fall migration of monarchs. If you’d like more information on the monarch butterfly, check out the Spring 2015 and Fall 2016 editions of *The Thalweg*. You can find these past editions on our website cobbstreams.org, under Our Newsletter, then Archived.

For teachers, classrooms, and groups of students, Journey North’s Symbolic Migration program creates a fun, interactive, and unique way for students to learn lessons of conservation, cooperation, and ambassadorship. Teachers and adults can register their group for a nominal fee of \$15 and are provided step by step instructions for completing the project. This fall, students across the globe will create symbolic class and individual monarch butterflies and



Students in Mexico with their symbolic migration butterflies

Stewardship Stars Excellence in Data Collection

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

- Bishop Lakes and its 6 Inflows** - Chemical Monitoring in the Willeo Watershed
- Cobb Progressives**- Chemical and Bacterial Monitoring in the Allatoona and Noonday Watersheds
- Connie Ghosh** - Chemical, Bacterial and Macro Monitoring in the Rubes Watershed
- ERM Atlanta** - Chemical and Visual Monitoring in the Chattahoochee Watershed
- Georgia Lake Monitoring** - Chemical Monitoring in the Lake Acworth Watershed
- Lakewood Colony** - Chemical and Bacterial Monitoring in the Rubes Watershed
- Ledbetter** - Chemical and Bacterial Monitoring in the Poplar Watershed
- Nancy Payne** - Chemical & Bacterial Monitoring in the Noses Watershed
- Noses** - Chemical Monitoring in the Noses Watershed
- Richard's Creek** - Chemical Monitoring in the Allatoona Watershed
- Rosco Peters** - Chemical and Bacterial Monitoring in the Rottenwood Watershed
- Sierra Club Centennial Group**-Chemical, Bacterial and Macro Monitoring in the Rottenwood Watershed
- Simon Locke** - Chemical and Bacterial Monitoring in the Butler Watershed
- Sydney Stream** - Chemical Monitoring in the Sope Watershed
- Team Salty** - Chemical Monitoring in the Sope Watershed
- Village N. Highland Subdivision** - Chemical, Bacterial and Macro Monitoring in the Willeo Watershed
- Willeo Watershed Alliance** - Chemical and Bacterial Monitoring in the Willeo Watershed

**Thank you for your hard work and dedication
in the hot weather!**

welcome

Addison Elementary

Chemical Monitoring in the Noonday Watershed

Castle Lane

Bacterial Monitoring in the Sewell Mill Watershed

Cheyney 2018

Chemical Monitoring in the Noonday Watershed

Garrison Mill Elementary

Chemical Monitoring in the Willeo Watershed

Timber Ridge Elementary

Chemical Monitoring in the Willeo Watershed

OBSERVATIONS

Autumn Leaf Colors



Photo credit: <https://tinyurl.com/yazgags9>

"The riot of color that erupts in forests every autumn looks different depending on which side of the ocean you're on.

While the fall foliage in North America and East Asia takes on a fiery red hue, perplexingly, autumn leaves in Europe are mostly yellow in color.

The red color comes from anthocyanins, which unlike carotenoids are produced only in the fall. These red pigments act as sunscreen for the trees by blocking out harmful radiation and preventing overexposure to light.

They also act as an antifreeze, preventing leaf cells from freezing easily in the autumn chill."

For more information on the science behind this phenomenon, visit <https://www.livescience.com/5749-fall-colors-europe.html>.

ECOPEDIA

Phytoncides

Phytoncide is a substance emitted by plants and trees which generally means the aroma of the forest. "Phyton" means "plant" in Latin, and "cide" means to exterminate.

The word, which means "exterminated by the plant", was coined in 1928 by Dr. Boris P. Tokin, a Russian biochemist from Leningrad University. He found that some plants give off very active substances which prevent them from rotting or being eaten by some insects and animals.



Photo credit: <https://tinyurl.com/y8r4vyaq>

Sources: forest-therapy.net/healthbenefits.html
<https://en.wikipedia.org/wiki/Phytoncide>

ANNOUNCEMENTS



Join the 2018-2019 Chattahoochee Challenge!

In this exciting challenge, scouts, families, clubs, community groups, and businesses are encouraged to attend and organize waterway events and projects throughout Cobb County. At the end of the contest, the group that has accumulated the most volunteer service hours receives a free rafting

trip in April. The rafting trip will take place on the Chattahoochee River with a National Park Ranger. Plus, local waterways will be cleaner and healthier!

We have scheduled several volunteer opportunities, including creek cleanups and storm drain marking 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 at www.cobbstreams.org located under Volunteer/Chattahoochee Challenge

Best of luck to all our competitors!

FOREST

Falling leaves hit the ground.

Over our heads the trees cast shadows.

Repeating the cycle of life and death.

Evergreens lasting through all of the cold nights during winter.

Sun just peeking through the branches of trees.

Taking a life as he uses the axe to chop down the tree.

2018 Georgia River of Words Winner

Forest

Abby Underwood, Grade 6

The Walker School, Marietta

Teacher: Hilary Adair

CONSERVATION TIP

10 Green Halloween Tips

1. Decorations. Instead of buying materials for decorations, gather supplies, arts and crafts throughout the year and make your own decorations.
2. Costumes. Make your own! If necessary, shop at thrift shops, consignment stores and yard sales, instead of buying retail.
3. Parties. When having a party, cut down on waste by avoiding disposable cups, plates and cutlery. Use regular dishes or buy biodegradable ones, and use a marker (or apply cute labels) to identify cups so party-goers can keep track of theirs.
4. Treats. Buy locally produced foods, candies and treats. Look for goodies with minimal packaging and/or those packaged in recycled materials.
5. Trick-or-Treat Bags. Use (and decorate) household items to collect candy in. A bucket, pillowcase, or old even an old bag can be decorated inexpensively at home - and reused year after year.
6. Pumpkins. Buy pumpkins from local farms or farmers' markets. Better yet, grow your own -- kids love to watch them grow!
7. Jack-o-lanterns. Don't throw away all the goodies from inside your pumpkin. Toast the seeds for tasty treats. Make pumpkin pie or muffins with the fruit - or compost it.
8. Transportation. Trick or Treat by walking around your neighborhood instead of driving to another destination. Get to know your neighbors, reduce your carbon emissions and help keep the streets safe for other walkers.
9. Compost and Recycle. From party food to treats to pumpkins, consider composting all organic matter and recycling other items.
10. Reuse! Reuse as much as you can from year to year. Instead of throwing away an old box or bag, use it to gather all your decorations and keep for next year. Plus, you can surprise your family and friends by quickly pulling out your box and throwing an impromptu Halloween party any time of year!



Photo credit: <https://tinyurl.com/ydhpz2fh>

Source: <https://www.worldwildlife.org/pages/10-green-halloween-tips>

WSP Welcomes Back Lori Waterson

The Watershed Stewardship Program would like to introduce Lori Waterson as our new part-time Environmental Program Specialist! We are very excited to have Lori re-join our team. Lori has spent the last few years creating her own business bringing environmental programs to senior citizens. Before that, Lori presented the Brooke and Branch puppet show for three years. Lori will head up our elementary school outreach, privet pull projects, and assist with community outreach. Welcome back Lori!



SEASONAL HAPPENINGS

Rivers Alive Stream Cleanup

Saturday • September 15, 2018 • 10:00am - 1:00pm

Rivers Alive is Georgia's annual volunteer waterway cleanup event that targets all waterways in the State including streams, rivers, lakes, beaches, and wetlands. The mission of Rivers Alive is to create awareness of and involvement in the preservation of Georgia's water resources. Rivers Alive is held annually each fall and is a program of the Georgia Environmental Protection Division Outreach Program.

Stream Cleanup Mob

Tuesday • September 18, 2018 • 4:00pm - 6:00pm

We will provide you with trash bags, grabbers (litter sticks), orange safety vests, blue latex gloves (sizes small, medium, and large), and data cards to record the debris we collect. For the stream cleanups, wear clothes that can get wet and closed-toes shoes like tennis shoes or water shoes.

Storm Drain Marking Mobs

Thursday • October 11, 2018 • 2:00pm - 4:00pm • JJ Daniell MS
Saturday • October 13, 2018 • 2:00pm - 4:00pm • Falcon Hills Subdivision

Each pair of volunteers will have a bucket full of supplies: maps, pens, storm drain markers, adhesive, educational material packets, and trash bags. Teams will mark the storm drains, pick up litter and distribute packets to each home to educate them on the newly marked storm drains.

Rain Barrel Make & Take Workshops

Tuesday • October 16, 2018 • 6:30pm - 7:30pm • LOCATED AT HYDE FARM
Thursday • October 18, 2018 • 12:00pm - 1:00pm

A rain barrel is a rainwater harvesting system that is connected to a downspout from a house or building. By collecting rainwater, you can save energy, water, and money. Rain barrels also help reduce erosion and storm water runoff and increase water quality. Participants will have the opportunity to make and take home a free rain barrel. Space is limited. One per household. Cobb County residents only.

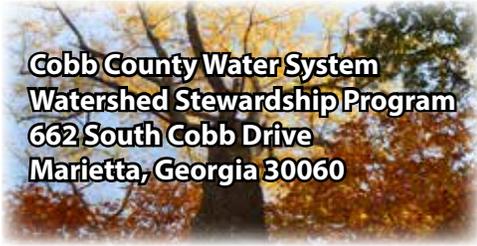
Fairy Pumpkin House Workshop

Tuesday • November 6, 2018 • 10:00am - 12:00pm

Designed to foster a foundation of service, an appreciation for being outdoors, and a sense of wonder for the natural world, Cobb County's Fairy Habitat Helpers is a youth service project that helps ensure all creatures have a healthy and secure home place. Our youngest environmental stewards will have a chance to use pumpkins and natural materials collected from along the trail to create shelters for fairies and other small creatures. Fairy pumpkin houses will be taken home to provide habitat to the creatures at your house. Workshop will take place, rain or shine, at the Water Lab, 662 South Cobb Drive, Marietta.



To register for a space in these free upcoming events, visit our website, www.cobbstreams.org, under Calendar.



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

September

- 6 Rain Garden Work Day • 8:30am - 10:30am • Cobb County Water Quality Laboratory
- 10 Adopt-A-Stream Chemical Monitoring Workshop • 6:30pm - 9:00pm • Cobb County Water Quality Laboratory
- 13 Rain Garden Work Day • 8:30am - 10:30am • Cobb County Water Quality Laboratory
- 15 Rivers Alive Stream Cleanup • 9:00am - 12:00pm • Lunch afterwards • Fair Oaks Park
- 18 Olley Creek Stream Cleanup Mob • 4:00pm - 6:00pm • Tramore Park
- 20 Rain Barrel Make-and-Take Workshop • 11:00am - 12:00pm • Cobb County Water Quality Laboratory
- 20 Rain Garden Work Day • 8:30am - 10:30am • Cobb County Water Quality Laboratory
- 21 Lunch & Learn: Water - Wastewater 101 • 12:00pm - 12:45pm • Cobb County Water Quality Laboratory

October

- 11 Rain Garden Work Day • 8:30am - 10:30am • Cobb County Water Quality Laboratory
- 11 Storm Drain Marking Mob • 2:00pm - 4:00pm • JJ Daniell Middle School
- 13 Storm Drain Marking Mob • 10:00am - 12:00pm • Falcon Hills Subdivision
- 13 Storm the Watershed 5K • Cubihatcha Outdoor Education Center • <http://stormthewatershed.com>
- 15 Adopt-A-Stream Bacteria Monitoring Workshop • 6:30pm - 9:00pm • Cobb County Water Quality Laboratory
- 16 Rain Barrel Make-and-Take Workshop • 6:30pm - 7:30pm • Hyde Farm
- 18 Rain Garden Work Day • 8:30am - 10:30am • Cobb County Water Quality Laboratory
- 18 Rain Barrel Make-and-Take Workshop • 12:00pm - 1:00pm • Cobb County Water Quality Laboratory
- 19-20 Outdoor Learning Symposium • Marietta, GA • <http://www.eealliance.org/outdoor-learning-symposium>

November

- 1 Rain Garden Work Day • 9:00am - 11:00am • Cobb County Water Quality Laboratory
- 6 Fairy Pumpkin House Workshop • 10:00am-12:00pm • Cobb County Water Quality Laboratory
- 8 Rain Garden Work Day • 9:00am - 11:00am • Cobb County Water Quality Laboratory
- 10 Privet Pull Mob • 10:00am - 12:30pm • Leone Hall Price Park
- 15 Rain Garden Work Day • 9:00am - 11:00am • Cobb County Water Quality Laboratory
- 15 Adopt-A-Stream Chemical Monitoring Workshop • 6:30pm - 9:00pm • Cobb County Water Quality Laboratory
- 16 Lunch and Learn: The Watersheds of Cobb County • 12:00pm - 12:45pm • Cobb County Water Quality Laboratory
- 27 Privet Pull Mob • 4:00pm - 6:00pm • Sweat Mountain Park
- 29 Rain Garden Work Day • 9:00am - 11:00am • Cobb County Water Quality Laboratory

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