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Dragonfly Gazette

GEORGIA PROJECT WET Environmental Protection Division

Spring
2017

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Use [this GIS](#) to look at a detailed map for any area in Georgia.

With the Aerial View you can see landscapes and structures which might be obscured when you are looking at the area from ground level. The USGS Quad View will show you the contour lines that illustrate elevation levels, so you can see how water from a dam would flow downstream of the dam structure.

The "Lake" Effect



Georgia be dammed!

Wink! You probably know that Georgia has virtually no natural lakes (not counting a few isolated [oxbows](#) and [Carolina bays](#)) and that our largest bodies of fresh water were formed when dams were constructed across rivers. In fact, there are more than 4,600 dams in the state, most of which are privately owned. Only four states (Texas, Kansas, Missouri and Oklahoma) have more dams than Georgia. The reservoirs which are formed behind the dams provide drinking water, recreation, power and wildlife habitat.

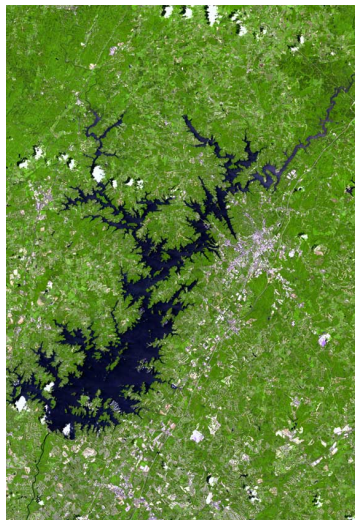


Something's rotten

While we generally believe reservoirs are good and necessary to have, they present an ecological problem. The very construction and existence of a reservoir is actually an alteration of a river ecosystem, impacting life forms and habitats that were once supported by the river. But there is more -- a recent research study from Washington State University found a disturbing connection between increased greenhouse gases and reservoirs! They say the world's reservoirs produce over 1% of all [greenhouse gases](#) entering the atmosphere.

Decomposing organic matter

As it turns out, reservoirs are a particularly large source of [methane](#), a greenhouse gas that is 34 times more potent than carbon dioxide over the course of a century. Reservoir methane production is comparable to that of rice paddies or biomass burning, both of which are included in emission estimates of the [Intergovernmental Panel on Climate Change](#).



In a natural system, carbon enters a lake as organic matter (such as falling leaves or soil suspended in runoff) and is cycled through the food chain, feeding plants and then animals. Some carbon settles to the lake bottom and is buried in sediment, and some is released back into the atmosphere as carbon dioxide and methane. As with all biological processes, lake emissions are temperature dependent, rising and falling along a temperature gradient.

Unlike natural water bodies, reservoirs usually

it produces large amounts of carbon dioxide, methane and nitrous oxide. Reservoirs also receive a lot of organic matter and nutrients like nitrogen and phosphorous from upstream rivers, which can further stimulate greenhouse gas production.

Role of natural lakes in climate change

Research is also underway on the role of natural lakes in the production of greenhouse gases. A group of researchers from [Rensselaer Polytechnic Institute](#) have taken on the challenge of predicting lake emissions for thousands of lakes across the country. The team will use lake temperature data estimated over the next 90 years to forecast changes in lake metabolism -- the absorption versus emission of carbon -- and seek to draw conclusions based on those estimates.

And BTW, are our dams safe? Check yours out!

EPD Safe Dams Program FAQ: <http://epd.georgia.gov/safe-dams-program-frequently-asked-questions-faq>

List of Dams in Georgia:

[https://en.wikipedia.org/wiki/Category:Dams_in_Georgia_\(U.S._state\)](https://en.wikipedia.org/wiki/Category:Dams_in_Georgia_(U.S._state))

High Hazard Dams in Georgia:

<http://www.damsafetyaction.org/GA/about-eaps/where.php>

Augusta area: <http://chronicle.augusta.com/news/2017-02-13/corps-engineers-says-thurmond-dam-failure-won-t-happen>

WET in the Classroom

Explore this topic with your students

These activities from *The Urban Watershed - Stormwater Edition*, *WOW! The Wonders of Wetlands* and *Project WET* fit well with this topic:

Watershed in Your Hand, Urban Watershed, pg. 15 -- Have students imagine what the watershed would be like if a dam was built between their hands. How would the water be affected? What would be underwater? What happens to all the organic matter that is now covered by water? Have them draw a cross section of the area covered by the new lake and discuss the consequences of this

nutrients on water quality through experimentation.

Dr. Runnov, Urban Watershed, pg. 89 -- Students can understand the basics of Climate Change with the activity.

Breathtaking, Urban Watershed, pg. 95 -- How does the flooding of an area affect the DO levels in the water?

A Snapshot in Time, Project WET, pg. 377 -- Students learn the parameters of a healthy water system and what can impact the water quality.

Water We Have Here? WOW, pg. 174 -- Students perform a series of scientific measurements and tests on wetlands water. How is a wetland different than land and vegetation that is completely covered with water all the time?

Recipe for Trouble, WOW, pg. 199 -- Students conduct classroom experiment to test the effects of various pollutants on water environments.

A Rottin' Experiment, WOW, pg. 245 -- Students construct compost bins that contain different levels of oxygen and water to observe the effects on the decay of organic matter.

See also:

For more advanced climate, carbon cycle, and environmental modules and lessons, try In Te Grate:

http://serc.carleton.edu/integrate/teaching_materials/climate_fact/index.html

Climate Change in My Backyard: Grade 5-12 climate lesson plans from NASA with the Chicago Botanic Gardens:

http://www.chicagobotanic.org/nasa/Grades_5-6_Activity_Guide



Happy News! Georgia students and teachers learned about the big changes to Georgia River of Words this year and responded with a record number of entries into the art and poetry contest! We had 2000 pieces to judge and fell in love with so many we ended up with more winners than we usually have. Watch for [this year's winners](#) on our website--soon!



To find more Project WET workshops visit EEinGeorgia.org

[TOP](#)

Georgia Project WET is proud to honor the following:

1. 2017 Project WET Organization of the Year--

- [Athens-Clarke County Water Conservation Office](#)

2. 2017 Project WET Educators of the Year--

- [Dr. Warren Edwards, Tuskegee Airman Global Academy, Atlanta](#)
- [Jeannie Lanio, Lanier High School, Sugar Hill](#)

3. 2017 Project WET Facilitator of the Year--

- [Hannah Penn, Stone Mountain Memorial Association](#)

Congratulations! These very special water education stewards were honored at the Southeastern Environmental Education Alliance Conference in Buford on March 4th.

Nominate someone you believe in:

[Nomination](#) (pdf form)



Getting Little Feet WET!

Our newest publication for our youngest learners will be available March 22, World Water Day! *Getting Little Feet WET* features 11 fun activities for ages 3-6, correlated to national standards and reflects all of Project WET's water principles. Visit the [Project WET store](#) to purchase your digital or printed copy on or after March 22.

Many of the activities are linked to "*Water We Singing About!*", a volume of kid-friendly songs about water written by the NJ WET coordinator, Keven Kopp. [Purchase the CD here.](#)



World Water Day!

understands its single most precious resource: water. Here's how you can get involved. The National Project WET Foundation is sharing our award-winning water resources education materials and network of partners to encourage involvement in [#MyWaterStory](#), a global social media conversation culminating in World Water Day activities hosted by the Vatican.

Through the websites worldwatervalues.org and bluerootsproject.org, people from around the world can submit water stories, inspiring us to think about the value of water in their own lives and to respond with multimedia content, such as videos, audio recordings, tweets, photos, artistic work and more.

[Learn More](#)

Here are some easy ways to get involved:

- Share stories about your water values using the hashtag [#MyWaterStory](#) on social media or at www.worldwatervalues.org.
- Use [Project WET's free teacher resources](#) to educate your students about water and encourage them to share their water stories.
- Tune into into TED-style, live-streamed presentations from the Vatican on [World Water Day](#).
- Connect after the Watershed event to learn what you can do to take action to address the water crisis on a local and global level.



Levi's honors Project WET collaboration

Project WET was included in Levi Strauss & Co.'s "Best of 2016: Biggest Moments" list, and taking second to the Super Bowl doesn't seem half bad:

<http://www.levistrauss.com/unzipped-blog/2016/12/best-2016-lsco-s-biggest-moments/>



"Water for You and Me" award announced

The Project WET Foundation announces the Teachers' Choice Award for Preschool for "Water for You and Me":

<http://www.projectwet.org/media/news/water-storybook-wins-teachers-choice-award-preschool-learning-magazine>



Be sure to visit us here often to find the latest information and stuff!

ProjectWET.Georgia.gov



Searchable database for Standards

With the standards database, all of the correlations are easy to access for WET 2.0 activities covering Georgia and National subject area standards. [Try it out!](#)



Find more workshops on [EE in Georgia!](#)

Project WET Workshop for Educators

Friday, March 17, 2017 - 9:30am to 4:30pm

Atlanta, GA

The Outdoor Activity Center in Atlanta will host a Project WET workshop for K-12 educators. Registration fee is \$30. Contact Darryl Haddock for more information: darryl@wawa-online.org; 404-752-5385.

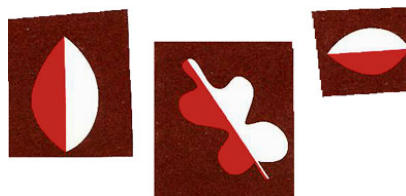
13th Annual Georgia Teacher Conservation Workshop

June 19-23, 2017 A week-long exploration of Forestry and Wildlife in GA

Charlie Elliott Wildlife Center
Mansfield, GA

\$50 pays for it all! Deadline for registration is **May 12, 2017**

[Registration and more information.](#)



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