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Dragonfly Gazette

GEORGIA PROJECT WET Environmental Protection Division

Fall 2013

IN THIS ISSUE:

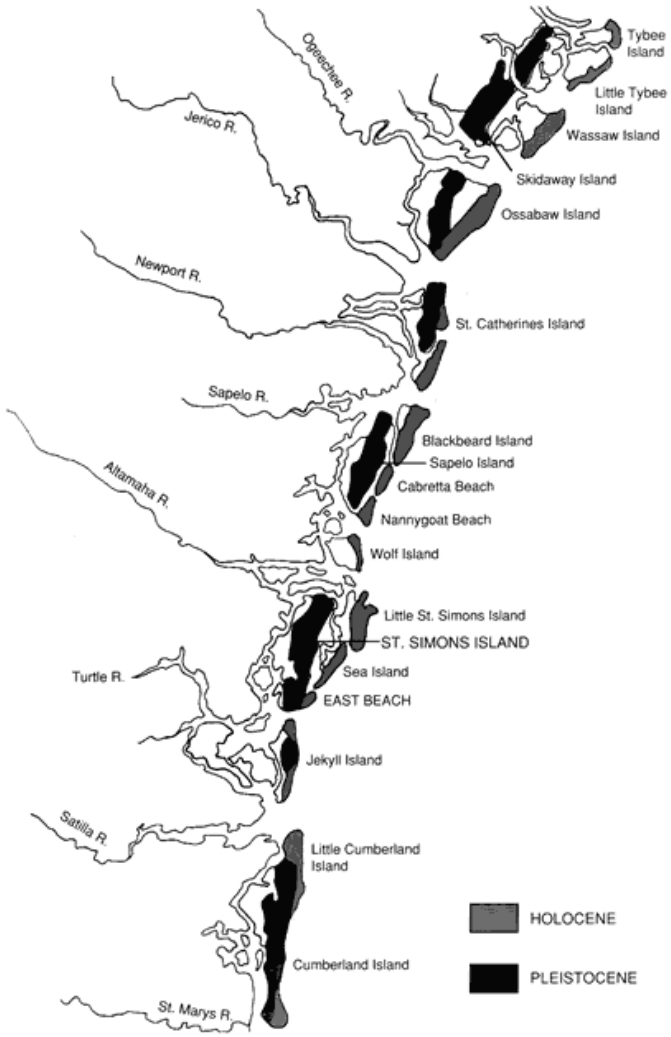
More information on this topic!

PATHWAY TO THE SEA

Everyone has an impact

Have you ever noticed that the rivers in Georgia all lead to the sea? No matter where you live in the state, you are upstream from either the Gulf of Mexico or the Atlantic Ocean!

Our beautiful Georgia coast meets the Atlantic Ocean along the sandy beaches of its 15 barrier islands known as the Golden Isles. These islands are continually changed by wind, waves, currents, tides, and sea level changes. Along Georgia's 100-mile-long coast the barrier islands from North to South are Tybee, Little Tybee, Skidaway, Wassaw, Ossabaw, St. Catherines, Blackbeard, Sapelo, Wolf, Little St. Simons, Sea, St. Simons, Jekyll, Little Cumberland, and Cumberland.



Student Watershed Questions

Can you find which watershed you live in and where the water flows?

What land uses along the river in your watershed may affect the water quality that could in turn affect the coastal area?

Get a Georgia Watershed Map

On one side of the barrier islands is tidal salt marsh.

Between the mainland and the barrier islands lay salt marsh, tidal creeks, and estuaries. Georgia's salt marsh estuaries are the largest in the continental U.S., aside from Louisiana.

Salt marsh is a wetlands ecosystem of plants and animals that are tolerant of wet, saline conditions. The soil is saturated with water or covered by shallow water. It has a salinity level

generally between that of freshwater and saltwater. The level of the water fluctuates daily due to the tides.

Why are wetlands and aquatic habitats so important?

Wetlands are among the most productive habitats on earth providing shelter and nursery areas for animals like fish and shellfish, as well as wintering grounds for migrating birds. Coastal marshes are particularly valuable for preventing loss of life and property by moderating extreme floods and buffering the land from storms; they also form natural reservoirs and help maintain desirable water quality.

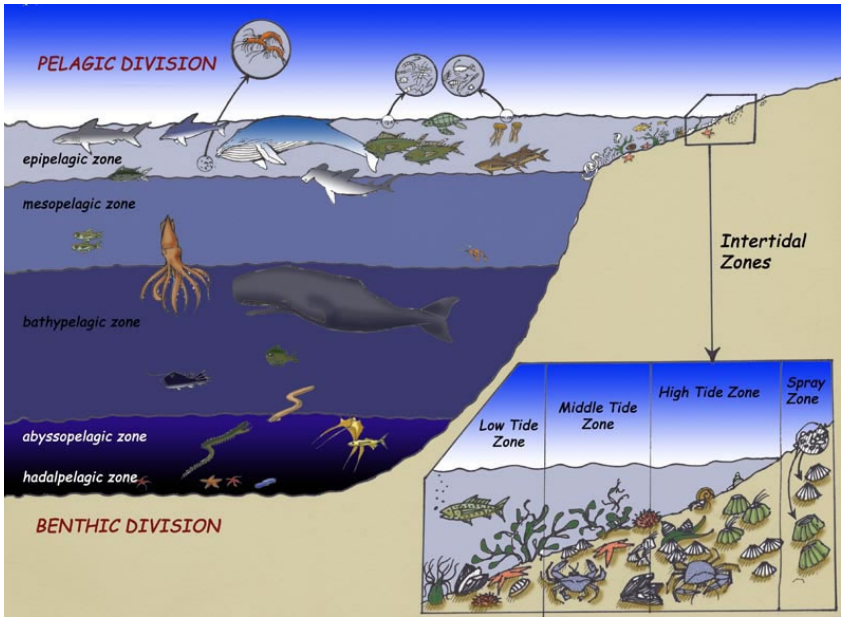
Functions and Values of Coastal Wetlands

1. Provide recreational areas and space
2. Provide coastal flooding control
3. Clean the water and produce oxygen
4. Field study areas for scientists and educators
5. Provide sediment traps and erosion control
6. Provide homes for endangered species
7. Provide habitat for migrating and breeding birds
8. Serve as a nursery and preserve for native plants and animals

Try these Salt Marsh Questions

How are marshes like coral reefs in terms biology plus geology?
How can this "wetland" of fine silt be relatively stable?
What makes these systems so productive?
What are the major stresses that can affect salt marsh plants and animals?

On the other side of the barrier islands is the Atlantic Ocean. The coast of Georgia is lined with a wide continental shelf which keeps the coastline relatively shallow. The beach sands flow out nearly 30 feet at low tide. Beyond the continental shelf the amazing variety of life and its adaptations in the ocean is controlled by the amount of sunlight, pressure, and temperature found at each level.



Because of the marsh and then the barrier islands, the ocean side of the Georgia coast is better protected from land use pollution and trash than some. However, debris and pollution from beach visitors, ships, and other shorelines can quickly build up on the coast.

Try these Coastal Questions

What preparations are happening on our barrier islands for protection of the coastline?

Why hasn't this been a problem over the last several thousand years of sea level changes?

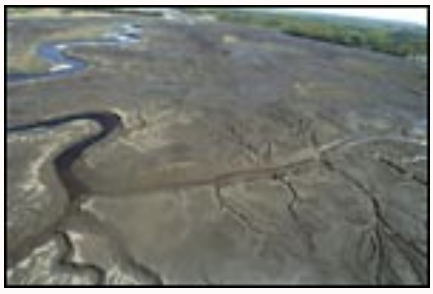
Additional Threats to the Coast

It is predicted that Georgia's coast will have a 20 percent population increase every decade over the next few decades. Communities and governments are taking measures to protect the coastal areas from uncontrolled development.

Nevertheless, with rising sea levels, the erosion of barrier island beaches is expected to increase.

Over 50% of salt marshes in the U.S. have been destroyed, mostly due to filling of marshes to create more land area for homes, industry, and agriculture.

Invasive species, like the common reed (Phragmites spp.), have displaced native species in some regions.



Salt marsh dieback is a phenomenon documented recently in numerous areas, including Georgia.

What can you do?

- Join a Rivers Alive team this fall to clean up your pathway to the sea.
- Visit the Coastal Adopt-A-Wetlands' marine monitoring program.
- Study the impacts. Education is the key! More information.

WET activities we recommend:

Sum of the Parts- Students demonstrate how everyone contributes to the pollution of a river as it flows through a watershed.
Seeing Watersheds- Students use maps to characterize what a watershed is and identify key parts and functions and boundaries.
Blue River- Students participate in a whole body exercise to simulate the movement of water through a watershed.
Common Water- Students analyze the results of a simulation to understand that water is a shared resource that needs management.
Invaders- Students participate in a simulated invasive species competition for habitat and resources.
Ocean Habitats- Students learn about mysterious marine creatures and the zones they occupy in the ocean.
*__Salt Marsh Players__ (from the original WET guide and in WOW-Wonders of Wetlands) Students act out how animals' behaviors change with the tide.

Do you know about Flipped Classrooms?

Basically, you flip your instruction so that students watch and listen to background information for homework (instead of a lecture from you), and then during your precious class-time they tackle problems, work in groups, research, collaborate, and do related activities.

HEY! Here's something for you...

Project WET's *Incredible Journey* lesson appears on Flip Your Classroom Day this Friday, September 6, 2013 and is available online for a short while to everyone.
http://projectwet.org/project-wet-news-events/blog_entry/learn-to-flip-the-water-cycle/

How you can use flipped classroom techniques with this topic:

Image you want your students to learn about the Georgia coast.
For HOMEWORK, they visit websites, videos, podcasts or webinars you assign (see our list), answering questions or taking notes on what they learn.
In CLASS guided by you, they participate in related Project

WET Activities to use and support what they read, heard and saw with their homework. They get a chance to interact with you and the other students with a knowledge base already in place. Additionally they can research and problem-solve selected questions to broaden their understanding of the subject. Students might do several activities from Project WET and could even use them to teach other students what they have learned.

More about the Flipped Classroom:
http://flippedlearning.org
http://www.knewton.com/flipped-classroom/

A compiled resource page of the Flipped Classroom (with videos and links) can be found at http://www.scoop.it/t/the-flipped-classroom

Five Best Practices for the Flipped Classroom from Andrew Miller:
http://www.edutopia.org/blog/flipped-classroom-best-practices-andrew-miller

For more links about the coast, visit our website.

River of Words

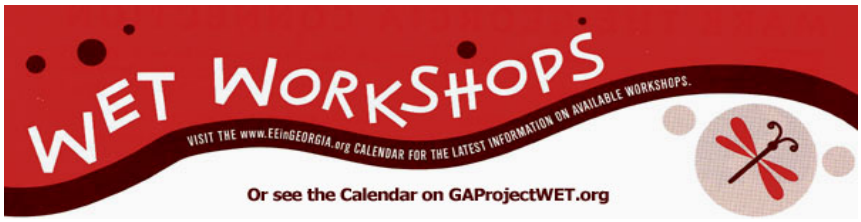
This year be sure to get your students involved in the River of Words Art and Poetry project!

Visit our website for all the details and remember the **December 1 deadline** for entry into the annual ROW contest!

To find more Project WET workshops visit EEinGeorgia.org

TOP

The national contest has a NEW ADDRESS!
Send your entries to:
River of Words
PO BOX 5060
Moraga, California 94575-5060



1) **Watch for our next Facilitator training scheduled for February 27-28 in Forsyth.** Details will be available on our website calendar and on eeingeorgia.org soon!

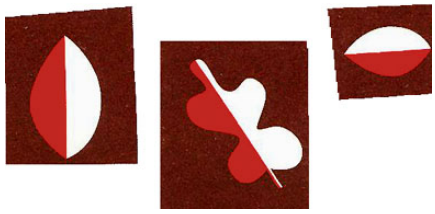
2) **WET Educator Workshop or WET 2.0 Training**
September 12, 2013
Georgia Assoc. of Water Professionals www.gawp.org
Marietta, GA, Only $10, contact Sharon Smith for more.
Choose your workshop:
A. Recertification for those WET Educators who need the new guide: 9 AM to noon
B. Full Project WET Educator Training: 9 AM to 4 PM

3) **WET Educator Workshop**
September 28, 2013; 9:00a-4:00p. Museum of Arts & Sciences, Macon
Contact Amanda DePriest for details and registration; 478-477-3232.

Have you seen our new searchable database for Standards? With it, all of the correlations are easy to access for WET 2.0 activities covering CCGPS, GPS, and National subject area standards. **Try it out!**

17th Annual Outdoor Learning Symposium on the COAST!
October 4, 2013 • Oatland Island Wildlife Center, Savannah
GROW OUTDOORS: Outdoor Learning PreK-12
Join educators from across Georgia for a day of hands-on sessions that focus on engaging students in outdoor settings. Learn how to enhance your outdoor classroom or make use of any outdoor space that you have. Outdoor learning for all ages is what we are all about!
Please visit eealliance.org to register.

2014 EEA Annual Conference - Save the Date!
March 28-29, 2014 • Rock Eagle 4-H Center, Eatonton



From Project WET USA:

Project WET Program 2.0 is now an Online Refresher Course! If you have been trained as a Project WET Educator in the last 5 years and do not have the new guide, you may be interested in taking this course online. The price is $75 and includes the new guide.
http://store.projectwet.org/index.php/online-refresher-training-course.html

Project WET Program 2.0 Online Refresher Course

Corrections have been made to the following student copy pages on the Portal:

- Adventures in Density: 11
- Is there Water on Zork: 31-32
- Ocean Habitats: 80, 81, 83, 85, 87-94
- On Track with Hydration: 106
- Super Sleuths: 121

To PRINT this edition of the Dragonfly Gazette as a pdf, view in your browser through the link provided at the top, and then using a PDF converter like http://dopdf.com to create or print PDF.